

In cooperation with the Texas Department of Transportation

Empirical, Dimensionless, Cumulative-Rainfall Hyetographs Developed From 1959–86 Storm Data for Selected Small Watersheds in Texas



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16. Abstract <p>A database of incremental cumulative-rainfall values for storms that occurred in urban and small rural watersheds in north and south central Texas during the period 1959 to 1986 was used to develop empirical, dimensionless, cumulative-rainfall hyetographs. Storm-quartile classifications were determined from the cumulative-rainfall values, which were divided into data groups on the basis of storm-quartile classification (first, second, third, fourth, and first through fourth combined), storm duration (0 to 6, 6 to 12, 12 to 24, 24 to 72, and 0 to 72 hours), and rainfall amount (1 inch or more). Removal of long leading tails, in effect, shortened the storm duration and, in some cases, affected the storm-quartile classification. Therefore, two storm groups, untrimmed and trimmed, were used for analysis. The trimmed storms generally are preferred for interpretation. For a 12-hour or less trimmed storm duration, approximately 49 percent of the storms are first quartile. For trimmed storm durations of 12 to 24 and 24 to 72 hours, 47 and 38 percent, respectively, of the storms are first quartile. For a trimmed storm duration of 0 to 72 hours, the first-, second-, third-, and fourth-quartile storms accounted for 46, 21, 20, and 13 percent of all storms, respectively.</p> <p>The 90th-percentile curve for first-quartile storms indicated about 90 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 10th-percentile curve for first-quartile storms indicated about 30 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 90th-percentile curve for fourth-quartile storms indicated about 33 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 10th-percentile curve for fourth-quartile storms indicated less than 5 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration.</p> <p>Statistics for the empirical, dimensionless, cumulative-rainfall hyetographs are presented in the report along with hyetograph curves and tables. The curves and tables presented do not present exact mathematical relations but can be used to estimate distributions of rainfall with time for small drainage areas of less than about 160 square miles in urban and small rural watersheds north and south central in Texas.</p>					
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Conversion Factors

Multiply	By	To obtain
	Length	
inch	25.4	millimeter
	Area	
square mile	2.590	square kilometer

Empirical, Dimensionless, Cumulative-Rainfall Hyetographs Developed From 1959–86 Storm Data for Selected Small Watersheds in Texas

By Tara Williams-Sether¹, William H. Asquith², David B. Thompson³, Theodore G. Cleveland⁴, and Xing Fang⁵

Abstract

A database of incremental cumulative-rainfall values for storms that occurred in small urban and rural watersheds in north and south central Texas during the period from 1959 to 1986 was used to develop empirical, dimensionless, cumulative-rainfall hyetographs. Storm-quartile classifications were determined from the cumulative-rainfall values, which were divided into data groups on the basis of storm-quartile classification (first, second, third, fourth, and first through fourth combined), storm duration (0 to 6, 6 to 12, 12 to 24, 24 to 72, and 0 to 72 hours), and rainfall amount (1 inch or more). Removal of long leading tails, in effect, shortened the storm duration and, in some cases, affected the storm-quartile classification. Therefore, two storm groups, untrimmed and trimmed, were used for analysis. The trimmed storms generally are preferred for interpretation. For a 12-hour or less trimmed storm duration, approximately 49 percent of the storms are first quartile. For trimmed storm durations of 12 to 24 and 24 to 72 hours, 47 and 38 percent, respectively, of the storms are first quartile. For a trimmed storm duration of 0 to 72 hours, the first-, second-, third-, and fourth-quartile storms accounted for 46, 21, 20, and 13 percent of all storms, respectively.

The 90th-percentile curve for first-quartile storms indicated about 90 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 10th-percentile curve for first-quartile storms indicated about 30 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 90th-percentile curve for fourth-quartile

storms indicated about 33 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 10th-percentile curve for fourth-quartile storms indicated less than 5 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration.

Statistics for the empirical, dimensionless, cumulative-rainfall hyetographs are presented in the report along with hyetograph curves and tables. The curves and tables presented do not present exact mathematical relations but can be used to estimate distributions of rainfall with time for small drainage areas of less than about 160 square miles in urban and small rural watersheds in north and south central Texas.

Introduction

Knowledge of the distribution of rainfall with time is important for addressing hydrologic problems such as the design of culverts for small rural watersheds and the design of urban storm-sewer systems. This knowledge also is useful for studying soil erosion, studying the flood potential of various types of rainfall events, and advancing the general understanding of the physics of the atmosphere with regard to precipitation processes (Huff, 1967). To obtain knowledge about the distribution of rainfall in Texas, synthetic distributions presently (2003) are constructed using rainfall hyetographs by the Soil Conservation Service (1973). These hyetographs, which are graphical representations of rainfall with time, are an important element of numerous hydraulic designs throughout Texas and are used in conjunction with unit hydrographs (Chow and others, 1988; Haan and others, 1994) to obtain peak-discharge estimates and hydrograph shapes used for hydraulic design applications. An increase in the reliability of peak-discharge estimates can help engineers and others develop more cost-effective drainage designs.

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To determine if the rainfall hyetographs (Soil Conservation Service, 1973) presently used by the Texas Department of Transportation (TxDOT) are representative of Texas storms and to provide a new procedure to develop hyetographs if the present hyetographs are not representative, the U.S. Geological Survey (USGS) in 2000, in cooperation with TxDOT and in collaboration with Texas Tech University, the University of Houston, and Lamar University, began a multicomponent study of the characteristics of rainfall in Texas. The purpose of this study, which is part of the larger multicomponent study, was to develop empirical, dimensionless, cumulative-rainfall hyetographs using procedures similar to those given by Huff (1967, 1990). Storm-quartile classifications were determined from cumulative-rainfall values for small watersheds in Texas. The cumulative-rainfall values then were divided into data groups based upon storm quartiles, storm durations, and rainfall totals of 1 inch or more. This report presents the empirical, dimensionless, cumulative-rainfall hyetographs developed during the study.

Database

The database used for this study was developed from ongoing, collaborative, rainfall-runoff research projects

sponsored by TxDOT and the USGS. The ongoing research projects are being conducted by Texas Tech University, the University of Houston, Lamar University, and the USGS. The database includes incremental cumulative-rainfall values for 1,659 runoff-producing storms that occurred during the period from 1959 to 1986 at or proximate to 91 USGS streamflow-gaging stations located in small urban and rural watersheds in north and south central Texas (fig. 1). Descriptive information for the streamflow-gaging stations is given in supplement 1.

Rainfall-gaging stations (precipitation gages) represented in the database were located around the urban areas of Austin, Dallas, Fort Worth, and San Antonio, Tex., and in rural areas within the Brazos, Colorado, San Antonio, and Trinity River Basins. Storm durations ranged from a few hours to several days, and cumulative-rainfall amounts ranged from less than 1 inch to more than 10 inches. These rainfall amounts were assumed to be representative of rainfall amounts across the drainage area of the coinciding streamflow-gaging station. Drainage areas for the 91 streamflow-gaging stations ranged from 0.26 to 166 square miles; however, drainage areas for 72 of the stations were less than 20 square miles (supplement 1) (Asquith and others, 2004). For drainage areas that had more than one precipitation gage, an accumulated weighted-precipitation amount was derived from the multiple precipitation gages

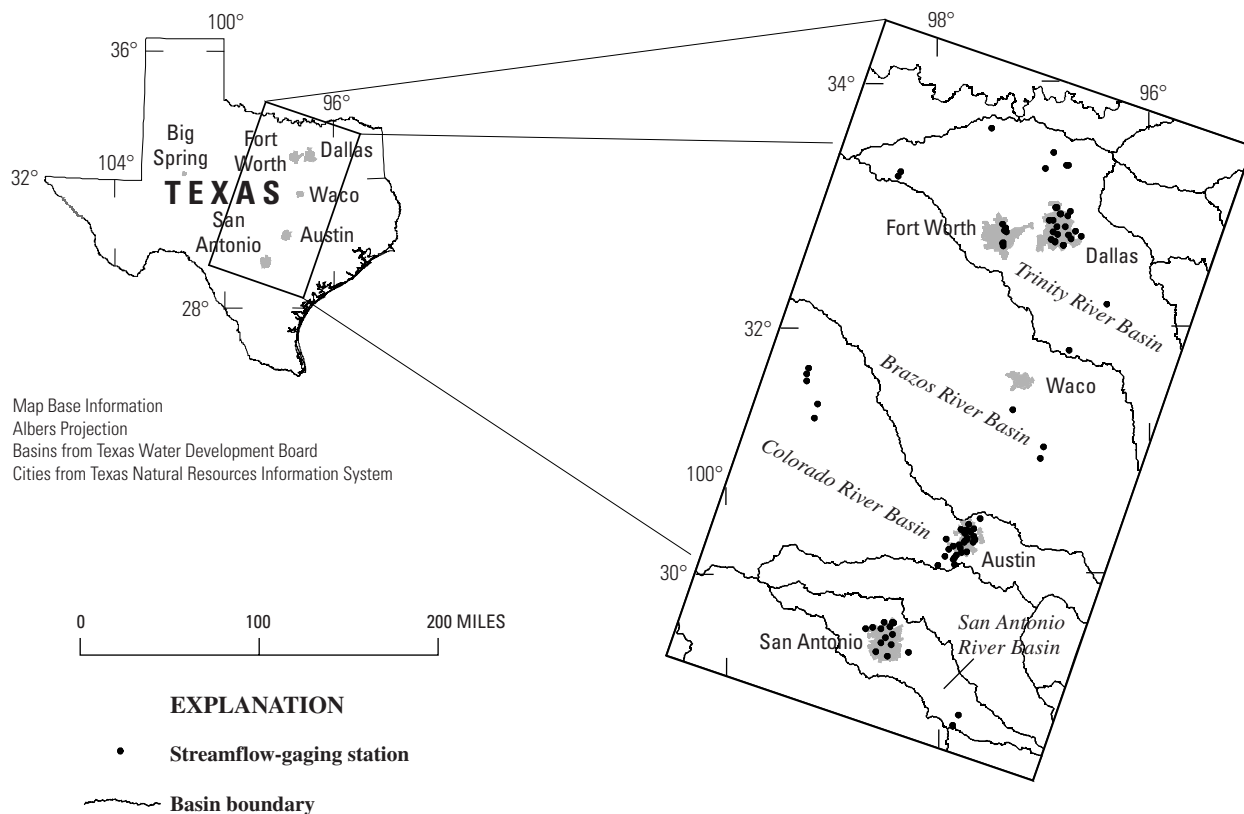


Figure 1. Locations of streamflow-gaging stations represented in hyetograph database. (From Asquith and others, 2003.)

and was considered to be the best estimate of rainfall for that drainage area. The accumulated weighted-precipitation estimates were areal rainfall values rather than point rainfall values. For stations that had only one precipitation gage, the values were point values. The precipitation data used for this study are on file at the USGS office in Bismarck, N. Dak. Detailed discussions of the database used and locations of the precipitation gages are given in Asquith (2003), Asquith and others (2003), Asquith and Thompson (2003), and Asquith and others (2004).

Previous Hyetograph Research

Previous hyetograph research was conducted by Huff (1967, 1990), the Soil Conservation Service (1973), Pani and Haragan (1981), and Asquith (2003). Most of the following discussion was adapted from Asquith (2003).

Research by Huff

Huff (1990) presented dimensionless rainfall hyetographs as families of curves that were derived for storms classified as first, second, third, or fourth quartile. The storms were classified by Huff (1967) according to whether the greatest percentage of cumulative rainfall occurred in the first, second, third, or fourth quarter of the storm duration. Huff (1967) defined a "storm" as a "rain period separated from preceding and succeeding rainfall by 6 hours or more." The database used by Huff (1967) includes data for 261 storms that occurred over a

400-square-mile network encompassing 49 recording rain gages in east-central Illinois. Data given in the database were collected between 1955 and 1966. All storms used had an areal mean rainfall of at least 0.5 inch and a duration of 3 to 48 hours. Also, at least one rain gage within the storm area had recorded at least 1 inch of rainfall during the storm duration.

In Huff (1967), the relative frequencies of the storms were 30, 36, 19, and 15 percent for the first, second, third, and fourth quartiles, respectively. These frequencies were slightly different in Huff (1990) because the differences between point rainfall and areal rainfall were considered for that study. Huff (1990) concluded that first-quartile storms often had durations of less than 6 hours, second-quartile storms often had durations of 6 to 12 hours, third-quartile storms often had durations of 12 to 24 hours, and fourth-quartile storms often had durations of more than 24 hours.

The median (50th-percentile) dimensionless hyetograph curves presented by Huff (1990) and shown in figure 2 were derived from point rainfall values (that is, rainfall data specifically for the recording device). The curves presented by Huff (1990) and shown in figure 3 were derived from areal rainfall values for areas that ranged from 10 to 50 square miles. Huff (1990) also provided curves that enveloped the median curve and represented other percentiles that ranged from 10 to 90 percent. A comparison of the corresponding curves in figures 2 and 3 indicated the difference between the curves derived from point rainfall values and the curves derived from areal rainfall values generally was small. Huff (1990) concluded that the curves derived from point rainfall values also are

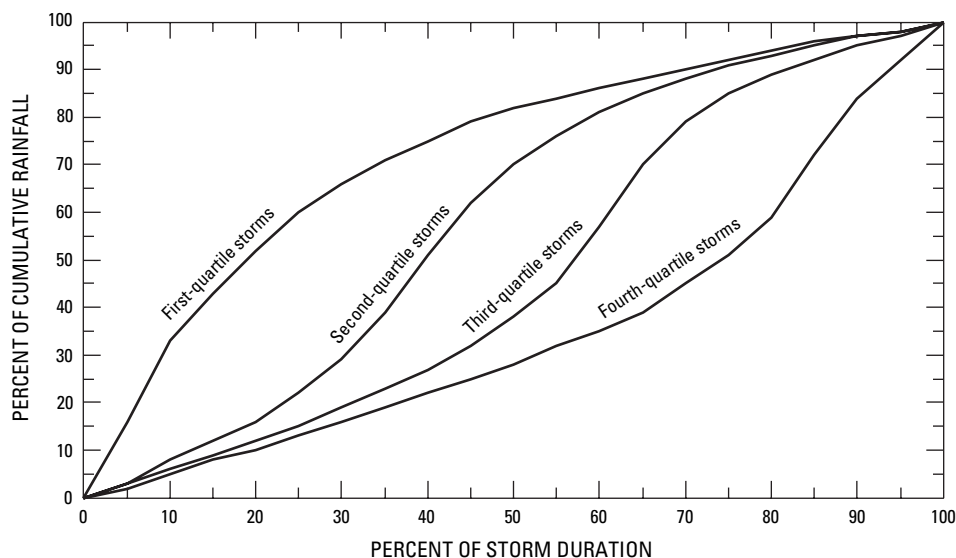


Figure 2. Median (50th-percentile) dimensionless hyetograph curves derived from point rainfall values. (Modified from Huff, 1990.)

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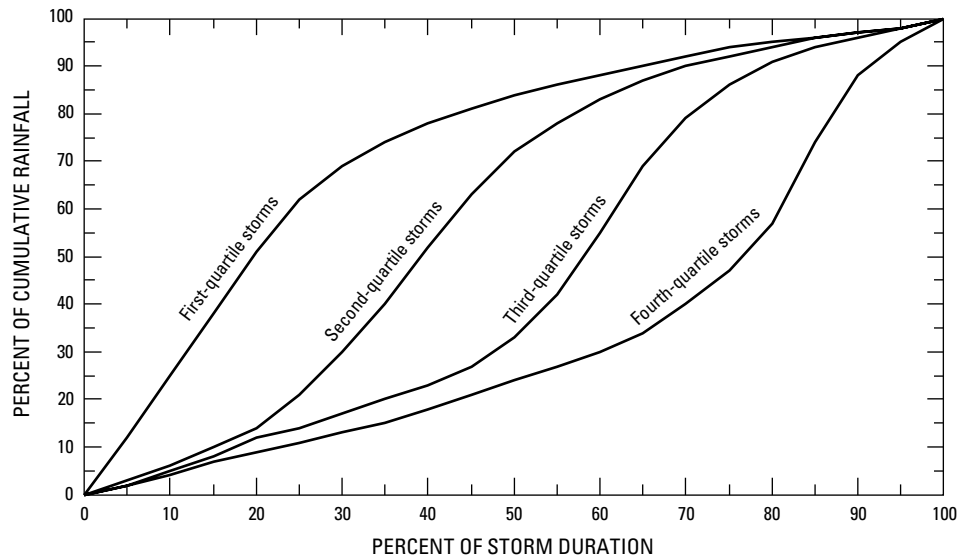


Figure 3. Median (50th-percentile) dimensionless hyetograph curves derived from areal rainfall values. (Rainfall values are for areas that ranged from 10 to 50 square miles.) (Modified from Huff, 1990.)

valid for areas but that the validity of the curves diminishes as the area increases.

A discussion on the analysis of rainfall bursts and the effects of rainfall type, storm type, and storm shape and orientation on the distribution of rainfall with time is given in Huff (1967). Huff (1990) concluded that, for hydraulic design applications, first-quartile storm hyetographs should be used for time scales of about 6 hours or less, and second-quartile storm hyetographs should be used for time scales of about 6 to 12 hours. Third- and fourth-quartile storm hyetographs were not discussed for design applications.

Research by the Soil Conservation Service

The approach used by the Soil Conservation Service (1973), now the Natural Resources Conservation Service, provides dimensionless hyetograph curves classified into four types dependent upon specific regions. The Type II and III curves represent storms in Texas and elsewhere in the United States. The Type II curves are applicable for most of Texas and represent the most intense storms. The Type III curves are similar in shape to the Type II curves. The Type II and III curves shown in figure 4 indicate most rain would fall during the period that is between 45 and 55 percent of the storm duration.

Research by Pani and Haragan

The approach used by Pani and Haragan (1981) followed the approach used by Huff (1967), and results of the two studies

were similar. Details of the approach used by Huff (1967) and clarification of the terminology used in this section are provided in the “Research by Huff” section of this report.

Pani and Haragan (1981) classified storms into four quartiles depending upon which quarter of dimensionless storm time had the greatest change in cumulative rainfall. Data were analyzed for 117 storms that occurred between May 15 and July 31 for a 3-year period (1978–80). Data for the analysis were collected from a rain-gage network that was operated as part of the High Plains Cooperative Program (HIPLEX) (Texas Department of Water Resources, 1980). The rain-gage network was located near Big Spring in the southern High Plains of Texas and encompassed about 2,600 square miles (Pani and Haragan, 1981). Data used in the analysis consisted of 15-minute rainfall values. The mid-May through July period was selected to confine the HIPLEX study to the period when convective-generated precipitation was most likely to occur. A storm was defined as a “rain period of at least 0.75-hour duration separated from preceding and succeeding rain periods by at least 1 hour” (Pani and Haragan, 1981).

In Pani and Haragan (1981), the relative frequencies of the storms were 13, 41, 32, and 14 percent for the first, second, third, and fourth quartiles, respectively. These frequencies indicate 73 percent of the storms were classified as second and third quartile. In Huff (1967, 1990), 66 percent of the storms were classified as first and second quartile. The chi-square goodness-of-fit test given in Davis (1986) and used in Pani and Haragan (1981) indicated significant differences in the relative frequencies for the two studies. Pani and Haragan (1981) stated that these differences could be attributed to advecting storm systems

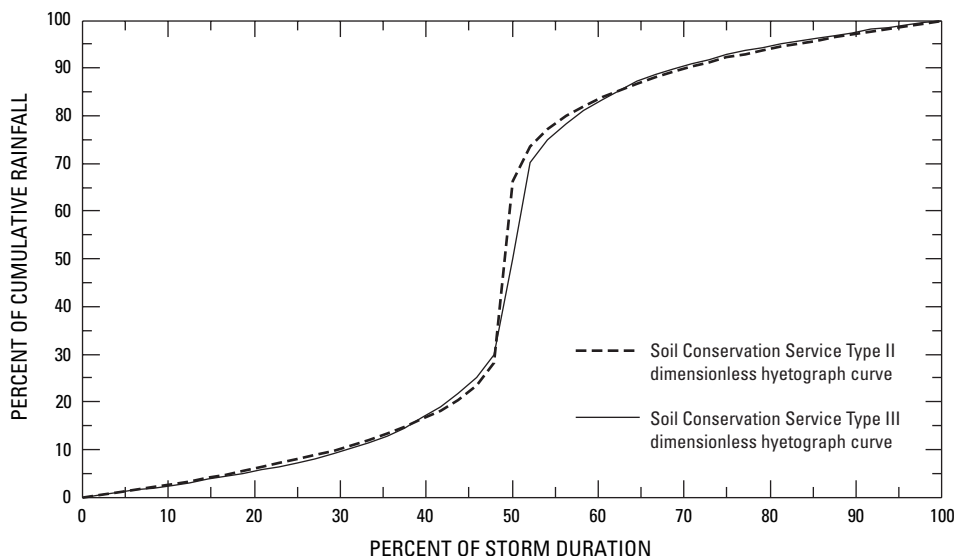


Figure 4. Soil Conservation Service Type II and Type III hyetograph curves. (Modified from Asquith and Thompson, 2003.)

across a network that was six times larger in areal extent than the Illinois network used by Huff (1967, 1990). Pani and Haragan (1981, p. 78) concluded that “if a storm’s areal extent was larger than the network, which is often the case in Illinois, the resultant temporal distribution would show more rain falling during the early portion of the network lifetime and produce a classification in the first quartile.” Thus, as a network area increases, more storms will be characterized as central peaking. Huff (1967) reached a similar conclusion.

The conclusions reached by Huff (1967) and Pani and Haragan (1981) are relevant to the research presented in this report. The accumulated weighted-precipitation amounts given in the database for each storm were derived from one to as many as six rain gages and were assumed to be representative of rainfall amounts across drainage areas that ranged from 0.26 to 166 square miles. Most drainage areas for this study were less than 20 square miles, and only two or three rain gages were in operation. Thus, the “network scale” in the database is very small in relation to the network scales used by Huff (1967, 1990) and Pani and Haragan (1981).

The median (50th-percentile) dimensionless hyetograph curves shown in figure 5 for the southern High Plains of Texas were graphically extracted from figures given in Pani and Haragan (1981). Curves are shown for second- and third-quartile storms. The chi-square test indicated no significant differences between the curves derived in Huff’s (1967) study and the curves derived in Pani and Haragan’s (1981) study. Thus, although the relative frequencies of the storms in Illinois were statistically different from the storms in Texas, the hyetograph curves were not statistically different. Hyetograph curves were

not provided for first- and fourth-quartile storms because of small sample sizes for those quartiles (Pani and Haragan, 1981).

Because the rate of change in the cumulative-rainfall amount for third-quartile storms was greatest near 55 percent of the storm duration (fig. 5), Pani and Haragan (1981) concluded that second- and third-quartile storms were similar enough to be combined for design applications. The median (50th-percentile) composite dimensionless hyetograph curve for the combined storms is shown in figure 6 along with the 10th- and 90th-percentile composite curves for the southern High Plains of Texas. Pani and Haragan (1981) did not consider the effects of storm duration on the hyetograph curves.

Approach

For this study, the general approach given by Huff (1967, 1990) was used to determine storm-quartile classifications from cumulative-rainfall values given in the database. The storm-quartile classification depended upon when the heaviest rate of rainfall occurred during the storm duration. For example, the total storm duration was divided into quarters and then the change in rainfall during each quarter was determined. The quarter that had the greatest change was used as the quartile classification. The cumulative-rainfall values were divided into data groups on the basis of storm-quartile classification (first, second, third, fourth, and first through fourth combined), storm duration (0 to 6, 6 to 12, 12 to 24, 24 to 72, and 0 to 72 hours), and rainfall amount (1 inch or more). Of the 1,659 runoff-producing storms for which data are available, 1,507 met the criteria for the storm duration (the number of hours passed) and

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the rainfall amount (the accumulated weighted-precipitation amount).

For some storms, the starting and ending times given in the database were not coincident with the starting and ending times of a substantial amount of rainfall that produced runoff. Some of the storms had long leading tails (the number of hours that passed before a measurable amount of rainfall

occurred) that were an artifact of the method by which the original data were recorded and that give the numerical impression that a storm duration is longer than the actual storm duration. Thus, if more than 1 hour had passed before a measurable amount of rainfall occurred, the leading tails were removed by changing the HOURS_PASSED value in the hyetograph data file [see Asquith and others (2004) for specific details about the database]. For example, in the data file shown

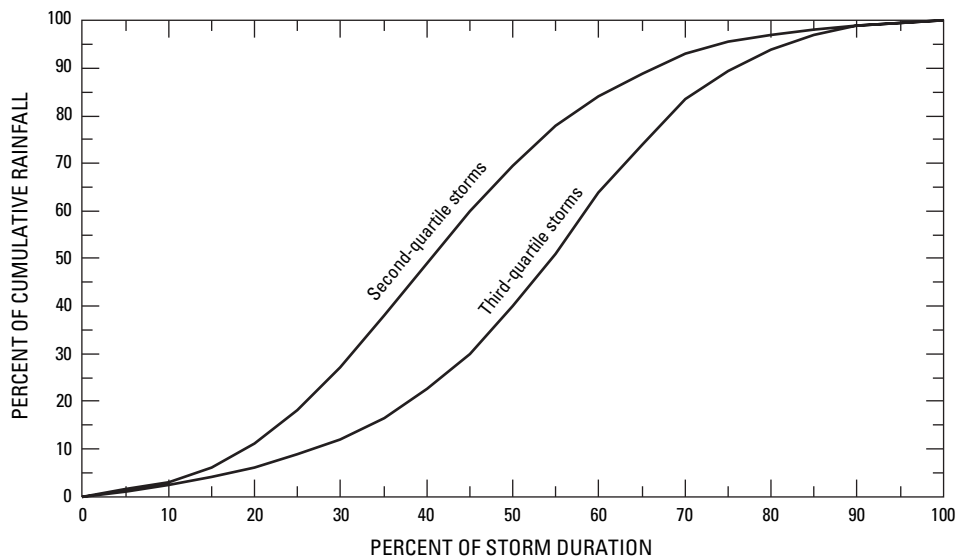


Figure 5. Median (50th-percentile) dimensionless hyetograph curves for the southern High Plains of Texas. (Modified from Pani and Haragan, 1981.)

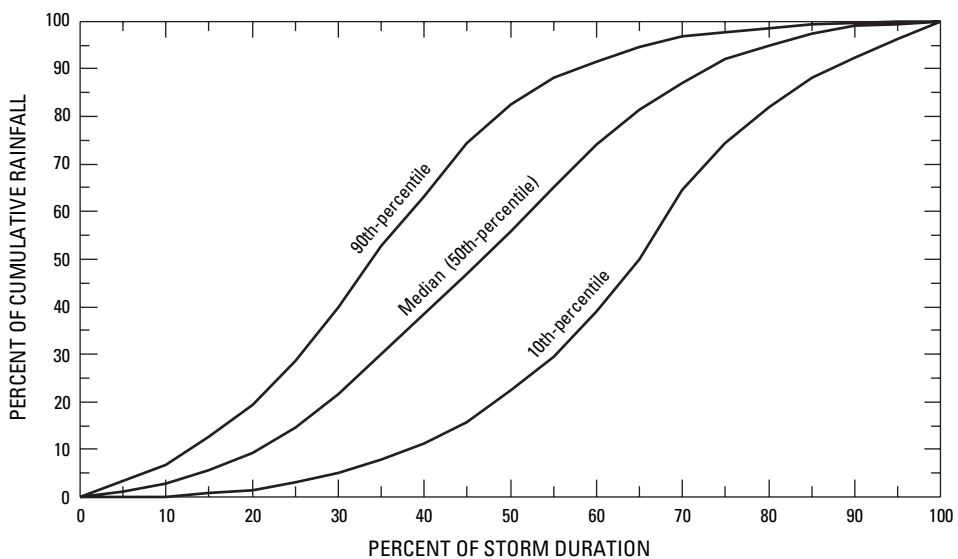


Figure 6. Median (50th-percentile), 10th-, and 90th-percentile composite dimensionless hyetograph curves for the southern High Plains of Texas. (Modified from Pani and Haragan, 1981.)

in figure 7, 21.5833 hours passed (HOURS_PASSED) before the first 0.35 inch of rainfall (ACCUM_WTD_PRECIP) was recorded. Thus, to remove the long leading tail, the zero HOURS_PASSED value shown in figure 7A was changed to the 21.5833 HOURS_PASSED value shown in figure 7B. Removal of the leading tail, in effect, shortened the storm duration, and, in some cases, affected the storm-quartile classification. Thus, the storm-quartile classifications were re-evaluated and a second group of data was generated. The original group of data is known as the untrimmed data group, and the second group of data is known as the trimmed data group.

After the storm-quartile classifications were re-evaluated, a double-tail 1-percent trimming was conducted to further reduce the length of both the leading and ending tails. The percentages of cumulative rainfall and storm duration then were recomputed. To accomplish the double-tail trimming, storms were considered to start after 1 percent or more of the cumulative-rainfall amount occurred and to stop after 99 percent of the cumulative-rainfall amount occurred.

After the double-tail 1-percent trimming was conducted, data for each cumulative-rainfall hyetograph were converted into data for a dimensionless hyetograph analysis. In dimensionless hyetographs, units of time and rainfall are expressed as percentages of the respective totals. Therefore, the time increments were converted to a percentage of storm duration, and the rainfall amounts were converted to a percentage of the cumulative-rainfall amount. The percentages of cumulative rainfall then were separated into bins and used to generate probability percentiles, averages, variances, standard deviations, and counts (number of samples) for each bin. The percentages were separated into bins by dividing the percentage of storm duration (the hours passed) into 2.5-percent intervals and by determining the percentage of cumulative rainfall that fell within each interval. The centers of the 2.5-percent intervals began at 2.5 percent and ended at 97.5 percent. Zero and 100 were included in the nearest respective increment. No interpolation, linear or otherwise, was used to determine in which bin the percentage of cumulative rainfall fell. For the example dimensionless hyetograph data given in table 1, the percentage of cumulative rainfall (the accumulated weighted-precipitation amount) for the 2.5-percent bin (0 to 3.75 hours passed) is 6.522, the percentage for the 5-percent bin (3.75 to 6.25 hours passed) is 8.696, the percentage for the 7.5-percent bin (6.25 to 8.75 hours passed) is 9.420, and the percentage for the 10-percent bin (8.75 to 11.25 hours passed) is 11.59.

The number of percentages within each bin varied, and some bins had no values. Also, because the statistics for each bin varied, the dimensionless hyetograph curves that were developed from the data might not have been monotonically increasing. Therefore, to obtain the monotonically increasing curves desired for design applications, the data were adjusted using manual adjustments and a Friedman (1984) Supersmoothing program in the S-PLUS statistics package (release 3).

Statistics for the untrimmed and trimmed data groups are given in supplements 2 through 5. The probability percentiles given in supplements 4 and 5 are the same as those given in supplements 2 and 3, but the percentiles given in supplements 4 and 5 were smoothed to ensure monotonic increases.

Averages and ranges for the cumulative-rainfall amounts for the untrimmed and trimmed data groups are given in table 2. The distribution of storm occurrences for both groups is given in table 3. Removing the leading tails increased the first-quartile occurrences for all storm durations. The second- and third-quartile occurrences increased for storm durations of 0 to 6 and 6 to 12 hours, and the fourth-quartile occurrences increased slightly for a storm duration of 0 to 6 hours.

For a 12-hour or less trimmed storm duration, approximately 49 percent of the storms are first quartile. For trimmed storm durations of 12 to 24 and 24 to 72 hours, 47 and 38 percent, respectively, of the storms are first quartile. These results are slightly different from those given by Pani and Haragan (1981) who classified most storms in Texas as second and third quartile. For a storm duration of 0 to 72 hours, the first-, second-, third-, and fourth-quartile storms in the trimmed data group accounted for 46, 21, 20, and 13 percent of all storms, respectively.

The distributions of storm occurrences by storm duration and by storm-quartile classification are shown in figures 8 and 9, respectively. The distributions were similar and typical of storm activity in the central part of Texas for all durations and for all quartile classifications. During the spring, convective storms are enhanced by frontal systems. During the fall, convective storms are enhanced by frontal and tropical systems. Dividing the hyetograph data groups into distinct spring and fall periods was not included in the scope of this study but might be helpful in further defining storm hyetographs.

Empirical, Dimensionless, Cumulative-Rainfall Hyetographs

Probability percentiles allow the selection of a time distribution that is most appropriate for a particular application. In some cases, a median (50th-percentile) distribution of rainfall with time might be most useful, and, in other cases, 10th- to 90th-percentile distributions of rainfall with time might be most useful. The median dimensionless hyetograph curves for first-through fourth-quartile storms and for the first- through fourth-quartile storms combined are shown in figure 10 for a storm duration of 0 to 72 hours. The 10th- to 90th-percentile curves are shown in figure 11. The curves shown in the figures are for the trimmed and smoothed data group. Curves for the untrimmed data group were similar to curves for the trimmed data group. Smoothed median (50th-percentile) distributions of rainfall with time are given in table 4.

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```

A (Untrimmed file)

# HYETOGRAPH FILE
# Filename=rain_sta08178300_1971_0613.dat
# SOURCE=ANNUAL COMP and ANALYSIS OF HYDRO DATA FOR URBAN STUDIES
# IN THE SAN ANT TX METRO AREA, 1971, PAGE 75,
# site=08178300 Alazan Creek at St. Cloud Street in San Antonio, Texas
# latitude=29()27'29"
# longitude=98()32'59"
# drainage area(mi2)=3.26
# DATE-TIME=date and time in Month/Day/Year@Hour:Minute
# THERE ARE TWO RAIN GAGES IN THE WATERSHED
# PRECIP1=RECORDED PRECIP IN INCHES FOR GAGE 1-A
# PRECIP2=RECORDED PRECIP IN INCHES FOR GAGE 2-A
# ACCUM_WTD_PRECIP RECORDED IN INCHES
DATE_TIME      HOURS_PASSED    PRECIP1    PRECIP2    ACCUM_WTD_PRECIP
06/13/1971@00:00:00    0.0000    0.0000    0.0000    0.0000
06/13/1971@21:35:00    21.5833    0.4000    0.2300    0.3500
06/13/1971@21:40:00    21.6667    0.5500    0.6100    0.5700
06/13/1971@21:45:00    21.7500    0.7000    0.7800    0.7200
06/13/1971@21:50:00    21.8333    0.8000    0.9000    0.8300
06/13/1971@21:55:00    21.9167    0.8100    0.9000    0.8300
06/13/1971@22:00:00    22.0000    0.8200    0.9000    0.8400
06/13/1971@22:05:00    22.0833    0.8200    0.9100    0.8400
06/13/1971@22:10:00    22.1667    0.8300    0.9100    0.8500
06/13/1971@22:15:00    22.2500    0.8300    0.9600    0.8700
06/13/1971@22:20:00    22.3333    0.8400    0.9700    0.8800
06/13/1971@22:25:00    22.4167    0.9400    0.9700    0.9500

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B (Trimmed file)

# HYETOGRAPH FILE
# Filename=rain_sta08178300_1971_0613.dat
# SOURCE=ANNUAL COMP and ANALYSIS OF HYDRO DATA FOR URBAN STUDIES
# IN THE SAN ANT TX METRO AREA, 1971, PAGE 75,
# site=08178300 Alazan Creek at St. Cloud Street in San Antonio, Texas
# latitude=29()27'29"
# longitude=98()32'59"
# drainage area(mi2)=3.26
# DATE-TIME=date and time in Month/Day/Year@Hour:Minute
# THERE ARE TWO RAIN GAGES IN THE WATERSHED
# PRECIP1=RECORDED PRECIP IN INCHES FOR GAGE 1-A
# PRECIP2=RECORDED PRECIP IN INCHES FOR GAGE 2-A
# ACCUM_WTD_PRECIP RECORDED IN INCHES
DATE_TIME      HOURS_PASSED    PRECIP1    PRECIP2    ACCUM_WTD_PRECIP
06/13/1971@00:00:00    21.5833    0.0000    0.0000    0.0000
06/13/1971@21:35:00    21.5833    0.4000    0.2300    0.3500
06/13/1971@21:40:00    21.6667    0.5500    0.6100    0.5700
06/13/1971@21:45:00    21.7500    0.7000    0.7800    0.7200
06/13/1971@21:50:00    21.8333    0.8000    0.9000    0.8300
06/13/1971@21:55:00    21.9167    0.8100    0.9000    0.8300
06/13/1971@22:00:00    22.0000    0.8200    0.9000    0.8400
06/13/1971@22:05:00    22.0833    0.8200    0.9100    0.8400
06/13/1971@22:10:00    22.1667    0.8300    0.9100    0.8500
06/13/1971@22:15:00    22.2500    0.8300    0.9600    0.8700
06/13/1971@22:20:00    22.3333    0.8400    0.9700    0.8800
06/13/1971@22:25:00    22.4167    0.9400    0.9700    0.9500

```

Figure 7. Untrimmed (A) and trimmed (B) hyetograph data files. (Removal of the long leading tail was accomplished by changing the zero HOURS_PASSED value shown in bold to the 21.5833 HOURS_PASSED value shown in bold.)

Selected percentiles for the first- and second-quartile storms are given in table 5. The 90th-percentile curve shown in figure 11 for first-quartile storms is typical of storms in which the rainfall occurs during a short period of time—that is, for 1 of 10 first-quartile storms, about 91 percent of the rainfall occurs during the first quarter of the storm and about 98 percent of the rainfall occurs during the first half of the storm. The 50th-percentile curve indicates about 69 percent of the rainfall occurs during the first quarter of the storm and about 85 percent of the

rainfall occurs during the first half of the storm. The 10th-percentile curve indicates about 39 percent of the rainfall occurs during the first quarter of the storm and about 58 percent of the rainfall occurs during the first half of the storm. The 90th-percentile curve for second-quartile storms indicates about 69 percent of the rainfall occurs during the first quarter of the storm and about 89 percent of the rainfall occurs during the first half of the storm. The 50th-percentile curve indicates about 28 percent of the rainfall occurs during the first quarter of the

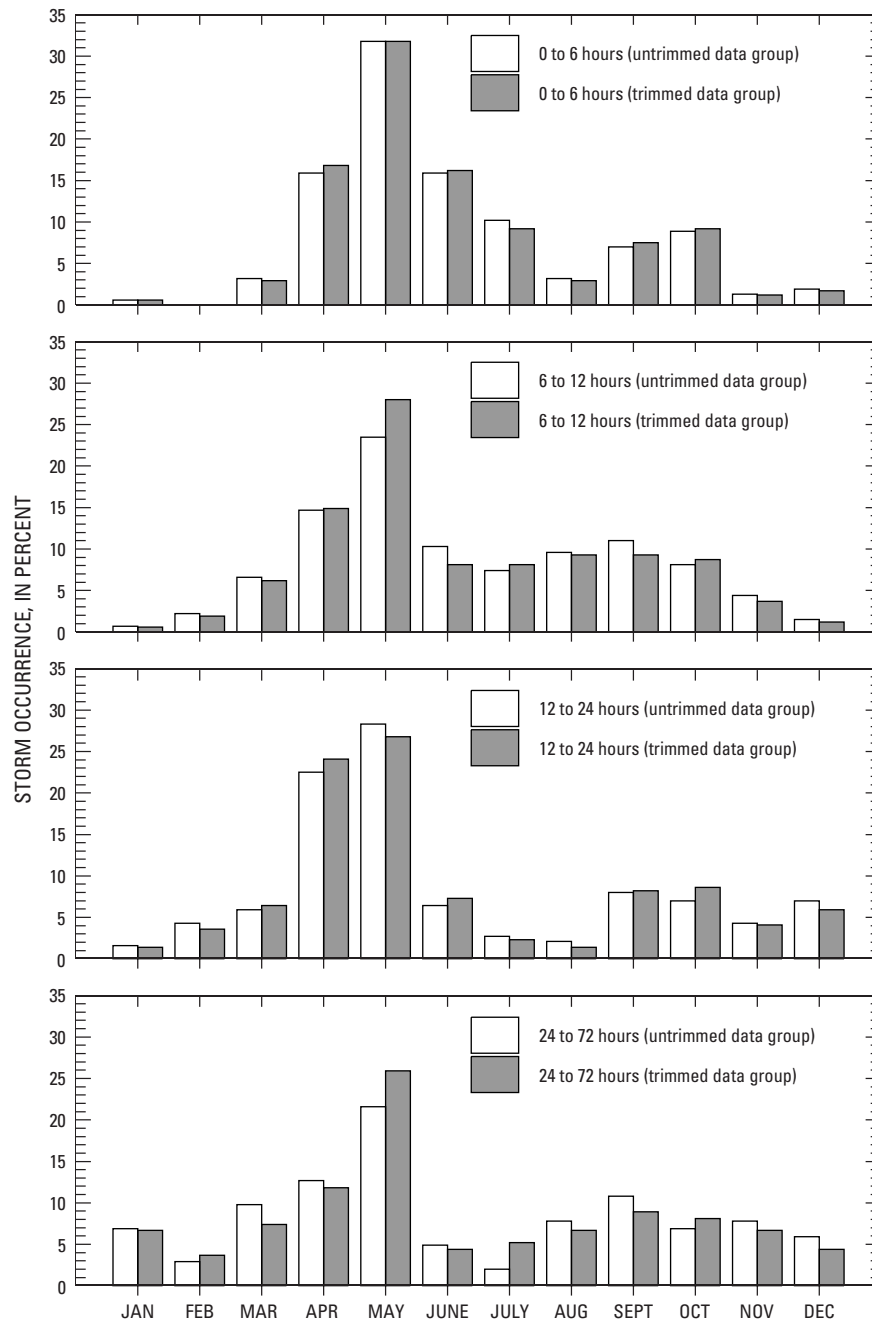


Figure 8. Distribution of storm occurrences by storm duration.

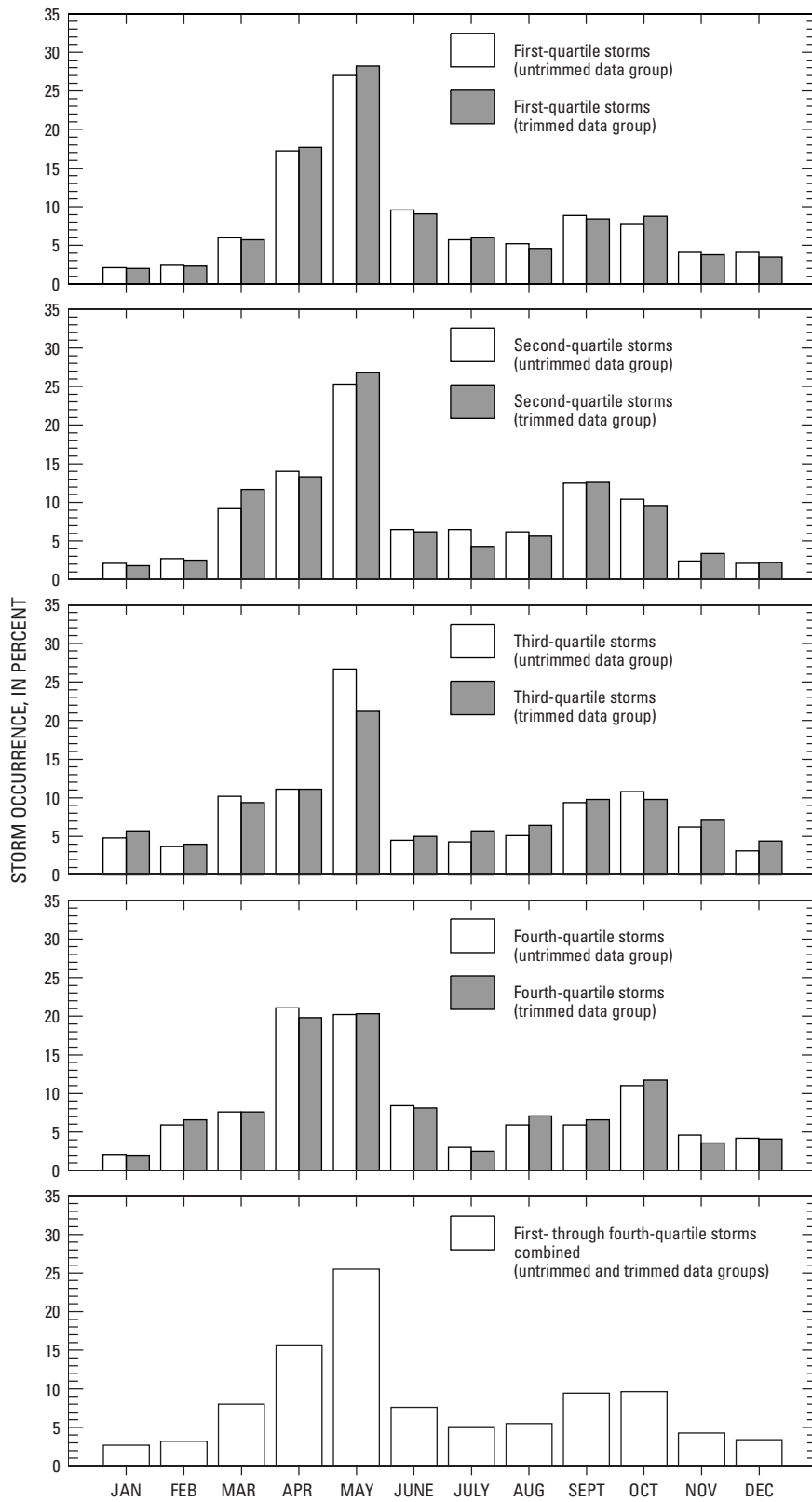


Figure 9. Distribution of storm occurrences by storm-quartile classification.

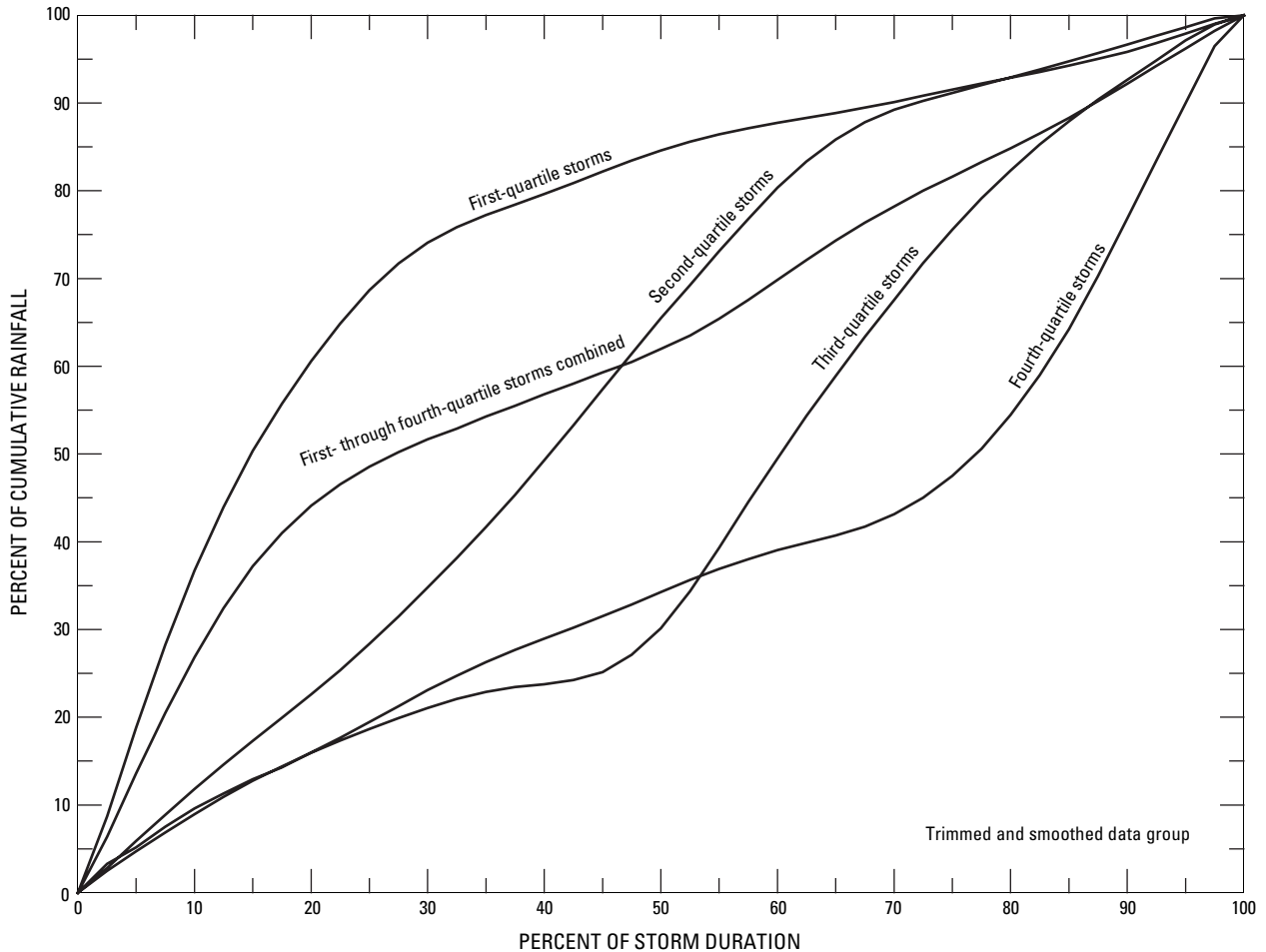


Figure 10. Median (50th-percentile) dimensionless hyetograph curves for a storm duration of 0 to 72 hours and a rainfall total of 1 inch or more.

storm and about 65 percent of the rainfall occurs during the first half of the storm. The 10th-percentile curve indicates about 6 percent of the rainfall occurs during the first quarter of the storm and about 39 percent of the rainfall occurs during the first half of the storm.

Selected percentiles for the third- and fourth-quartile storms are given in table 6. The 90th-percentile curve shown in figure 11 for third-quartile storms indicates about 39 percent of the rainfall occurs during the first quarter of the storm and about 56 percent of the rainfall occurs during the first half of the storm. The 50th-percentile curve indicates about 19 percent of the rainfall occurs during the first quarter of the storm and about 30 percent of the rainfall occurs during the first half of the storm. The 10th-percentile curve indicates about 4 percent of the rainfall occurs during the first quarter of the storm and about 9 percent of the rainfall occurs during the first half of the storm. The 90th-percentile curve for fourth-quartile storms indicates about 39 percent of the rainfall occurs during the first quarter of the storm and about 50 percent of the rainfall occurs during the first half of the storm. The 50th-percentile curve indicates about

19 percent of the rainfall occurs during the first quarter of the storm and about 34 percent of the rainfall occurs during the first half of the storm. The 10th-percentile curve indicates about 5 percent of the rainfall occurs during the first quarter of the storm and about 12 percent of the rainfall occurs during the first half of the storm.

The hyetograph curves for the various percentiles indicate characteristics of certain storm types. For example, the 90th-percentile curve for first-quartile storms (fig. 11) indicates about 90 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 10th-percentile curve for first-quartile storms indicates about 30 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 90th-percentile curve for fourth-quartile storms indicates about 33 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 10th-percentile curve for fourth-quartile storms indicates less than 5 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 90th-percentile curves for the second- and third-quartile storms indicate about 67 and

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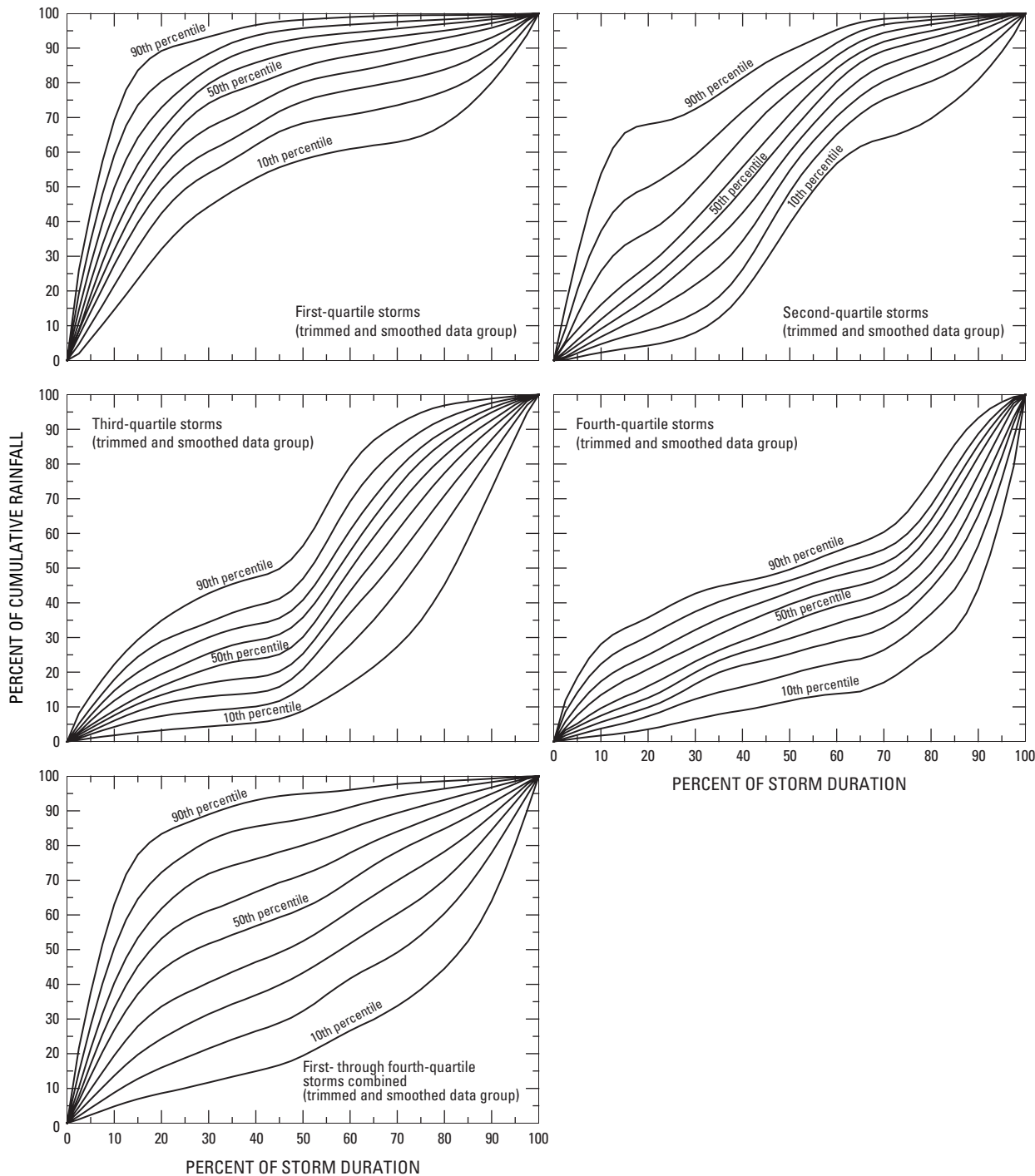


Figure 11. 10th- to 90th-percentile dimensionless hyetograph curves for a storm duration of 0 to 72 hours and a rainfall total of 1 inch or more.

33 percent, respectively, of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 10th-percentile curves for the second- and third-quartile storms indicate about 5 and less than 1 percent, respectively, of the cumulative rainfall occurs during the first 20 percent of the storm duration.

The hyetograph curves and tables presented in this report were empirically derived and do not present exact mathematical relations. However, the curves and tables can be used to estimate distributions of rainfall with time for small drainage areas of less than about 160 square miles in urban and small rural watersheds in Texas.

Table 1. Example dimensionless hyetograph data.

[--, no value]

Bin (percent)	Hours passed (percent)	Accumulated weighted- precipitation amount (percent)
2.5 (0–3.75 hours passed)	0	0
	1.888	6.522
5 (3.75–6.25 hours passed)	3.774	8.696
7.5 (6.25–8.75 hours passed)	7.548	9.420
10 (8.75–11.25 hours passed)	9.435	11.59
12.5 (11.25–13.75 hours passed)	13.21	14.49
15 (13.75–16.25 hours passed)	15.09	18.84
17.5 (16.25–18.75 hours passed)	16.98	20.29
20 (18.75–21.25 hours passed)	18.87	23.91
	20.76	32.61
22.5 (21.25–23.75 hours passed)	22.64	38.41
25 (23.75–26.25 hours passed)	24.53	39.86
27.5 (26.25–28.75 hours passed)	26.42	43.48
	28.30	53.62
30 (28.75–31.25 hours passed)	30.19	55.07
32.5 (31.25–33.75 hours passed)	32.08	57.97
35 (33.75–36.25 hours passed)	33.96	57.97
	35.85	58.70
37.5 (36.25–38.75 hours passed)	--	--
40 (38.75–41.25 hours passed)	--	--
42.5 (41.25–43.75 hours passed)	--	--
45 (43.75–46.25 hours passed)	45.28	62.32
47.5 (46.25–48.75 hours passed)	--	--
50 (48.75–51.25 hours passed)	49.06	66.67
52.5 (51.25–53.75 hours passed)	52.83	68.84
55 (53.75–56.25 hours passed)	54.72	73.91
57.5 (56.25–58.75 hours passed)	58.49	78.26
60 (58.75–61.25 hours passed)	--	--
62.5 (61.25–63.75 hours passed)	62.26	80.43
65 (63.75–66.25 hours passed)	64.15	86.23
67.5 (66.25–68.75 hours passed)	--	--
70 (68.75–71.25 hours passed)	--	--
72.5 (71.25–73.75 hours passed)	71.70	92.03
75 (73.75–76.25 hours passed)	--	--
77.5 (76.25–78.75 hours passed)	--	--
80 (78.75–81.25 hours passed)	81.13	95.65
82.5 (81.25–83.75 hours passed)	--	--
85 (83.75–86.25 hours passed)	--	--
87.5 (86.25–88.75 hours passed)	--	--
90 (88.75–91.25 hours passed)	--	--
92.5 (91.25–93.75 hours passed)	--	--
95 (93.75–96.25 hours passed)	--	--
97.5 (96.25–100.0 hours passed)	100.0	100.0

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Table 2. Averages and ranges for cumulative-rainfall amounts.

Storm duration (hours)	Untrimmed data group		Trimmed data group	
	Average rainfall amount (inches)	Range of rainfall amount (inches)	Average rainfall amount (inches)	Range of rainfall amount (inches)
	First-quartile storms, untrimmed data group		First-quartile storms, trimmed data group	
0–6	1.99	1–5.76	1.97	1–5.76
6–12	2.56	1–10.95	2.51	1–10.95
12–24	3.02	1.07–9.35	2.98	1.07–9.35
24–72	3.25	1–8.44	3.25	1–8.44
0–72	2.68	1–10.95	2.67	1–10.95
	Second-quartile storms, untrimmed data group		Second-quartile storms, trimmed data group	
0–6	1.83	1–3.55	1.82	1–3.55
6–12	2.60	1.01–4.36	2.61	1.01–5.04
12–24	3.17	1.17–6.99	3.23	1.07–7.26
24–72	3.68	1.34–8.45	3.82	1.41–8.45
0–72	2.86	1–8.45	2.83	1–8.45
	Third-quartile storms, untrimmed data group		Third-quartile storms, trimmed data group	
0–6	1.77	1–3.68	1.80	1–3.68
6–12	2.27	1–5.47	2.32	1–5.47
12–24	2.47	1.07–4.90	2.66	1.18–4.90
24–72	3.68	1.05–8.89	3.95	1.39–8.89
0–72	2.79	1–8.89	2.84	1–8.89
	Fourth-quartile storms, untrimmed data group		Fourth-quartile storms, trimmed data group	
0–6	1.71	1.03–2.93	1.68	1.03–2.93
6–12	1.97	1.02–3.97	2.02	1.02–3.97
12–24	2.31	1.06–5.42	2.34	1.06–5.42
24–72	3.88	1.02–19.26	4.57	1.56–19.26
0–72	2.75	1.02–19.26	2.82	1.02–19.26

Table 3. Distribution of storm occurrence

[Number in parenthesis is percent of total.]

Storm-quartile classification	Storm duration (hours)									
	0 to 6		6 to 12		12 to 24		24 to 72		0 to 72	
	Untrimmed data group	Trimmed data group	Untrimmed data group	Trimmed data group	Untrimmed data group	Trimmed data group	Untrimmed data group	Trimmed data group	Untrimmed data group	Trimmed data group
First	157 (51)	173 (51)	136 (44)	161 (47)	187 (39)	220 (47)	102 (25)	135 (38)	582 (39)	689 (46)
Second	90 (29)	96 (29)	50 (16)	62 (18)	106 (22)	91 (19)	90 (22)	75 (21)	336 (22)	324 (21)
Third	47 (15)	50 (15)	70 (23)	74 (21)	102 (21)	78 (17)	133 (33)	95 (26)	352 (23)	297 (20)
Fourth	15 (5)	17 (5)	53 (17)	47 (14)	85 (18)	79 (17)	84 (20)	54 (15)	237 (16)	197 (13)
All	309 (100)	336 (100)	309 (100)	344 (100)	480 (100)	468 (100)	409 (100)	359 (100)	1,507 (100)	1,507 (100)

Table 4. Smoothed median (50th-percentile) distributions of rainfall with time for a storm duration of 0 to 72 hours and a rainfall total of 1 inch or more

Center of percent-of-storm- duration interval	Median (50th-percentile)				
	First-quartile storms (percent)	Second-quartile storms (percent)	Third-quartile storms (percent)	Fourth-quartile storms (percent)	First- through fourth-quartile storms (percent)
2.5	8.70	2.81	2.51	3.28	6.37
5.0	18.81	5.89	4.73	5.16	13.58
7.5	28.27	8.89	6.86	7.53	20.49
10.0	36.71	11.82	8.96	9.59	26.83
12.5	43.93	14.60	10.92	11.30	32.42
15.0	50.35	17.32	12.76	12.93	37.21
17.5	55.74	19.93	14.41	14.30	41.00
20.0	60.57	22.61	15.95	15.98	44.11
22.5	64.85	25.34	17.34	17.64	46.55
25.0	68.65	28.36	18.66	19.46	48.54
27.5	71.70	31.47	19.91	21.27	50.23
30.0	74.09	34.77	21.05	23.10	51.68
32.5	75.85	38.14	22.08	24.71	52.90
35.0	77.23	41.69	22.89	26.30	54.27
37.5	78.42	45.34	23.45	27.67	55.49
40.0	79.62	49.29	23.77	28.95	56.80
42.5	80.86	53.27	24.24	30.19	58.03
45.0	82.20	57.39	25.14	31.51	59.31
47.5	83.43	61.42	27.11	32.86	60.49
50.0	84.59	65.46	30.15	34.27	61.97
52.5	85.59	69.27	34.37	35.65	63.51
55.0	86.42	73.09	39.28	36.92	65.39
57.5	87.12	76.77	44.53	38.02	67.56
60.0	87.75	80.35	49.48	39.04	69.85
62.5	88.28	83.34	54.35	39.90	72.11
65.0	88.85	85.85	58.90	40.72	74.32
67.5	89.46	87.80	63.36	41.71	76.38
70.0	90.10	89.24	67.56	43.15	78.21
72.5	90.81	90.23	71.75	45.03	80.00
75.0	91.53	91.15	75.58	47.52	81.61
77.5	92.22	92.03	79.15	50.60	83.25
80.0	92.87	92.90	82.29	54.45	84.84
82.5	93.54	93.81	85.28	59.01	86.54
85.0	94.25	94.75	87.93	64.24	88.30
87.5	95.01	95.69	90.36	70.27	90.21
90.0	95.84	96.66	92.62	76.81	92.18
92.5	96.82	97.64	94.86	83.44	94.22
95.0	97.90	98.63	97.15	90.01	96.21
97.5	99.02	99.65	98.94	96.48	98.21

Table 5. Selected percentiles for first- and second-quartile storms for a storm duration of 0 to 72 hours and a rainfall total of 1 inch or more.

Center of percent-of-storm-duration interval	First-quartile storms			Second-quartile storms		
	10th percentile	50th percentile	90th percentile	10th percentile	50th percentile	90th percentile
2.5	1.93	8.70	26.06	0.12	2.81	15.86
5.0	6.12	18.81	42.85	.89	5.89	30.59
7.5	10.29	28.27	57.39	1.63	8.89	43.53
10.0	14.60	36.71	69.27	2.25	11.82	53.80
12.5	18.93	43.93	78.01	2.81	14.60	61.15
15.0	23.41	50.35	83.56	3.37	17.32	65.51
17.5	27.83	55.74	86.94	3.80	19.93	67.30
20.0	32.04	60.57	89.19	4.27	22.61	68.04
22.5	35.78	64.85	90.49	4.86	25.34	68.63
25.0	39.17	68.65	91.40	5.65	28.36	69.42
27.5	41.95	71.70	92.31	6.63	31.47	70.71
30.0	44.31	74.09	93.25	8.01	34.77	72.44
32.5	46.54	75.85	94.14	9.86	38.14	74.41
35.0	48.69	77.23	95.12	12.27	41.69	76.69
37.5	50.63	78.42	95.96	15.34	45.34	79.03
40.0	52.50	79.62	96.65	19.26	49.29	81.40
42.5	54.19	80.86	97.20	23.91	53.27	83.69
45.0	55.64	82.20	97.64	28.91	57.39	85.88
47.5	56.81	83.43	97.93	34.16	61.42	87.66
50.0	57.89	84.59	98.18	39.48	65.46	89.26
52.5	58.78	85.59	98.40	44.37	69.27	90.80
55.0	59.59	86.42	98.59	48.94	73.09	92.35
57.5	60.30	87.12	98.77	53.18	76.77	93.84
60.0	60.92	87.75	98.94	56.77	80.35	95.30
62.5	61.43	88.28	99.08	59.46	83.34	96.51
65.0	61.97	88.85	99.20	61.64	85.85	97.43
67.5	62.39	89.46	99.31	63.07	87.80	98.04
70.0	62.92	90.10	99.38	63.99	89.24	98.41
72.5	63.62	90.81	99.43	64.97	90.23	98.61
75.0	64.64	91.53	99.47	66.23	91.15	98.77
77.5	66.09	92.22	99.49	67.72	92.03	98.91
80.0	68.05	92.87	99.51	69.70	92.90	99.06
82.5	70.36	93.54	99.52	72.19	93.81	99.22
85.0	73.14	94.25	99.55	74.73	94.75	99.39
87.5	76.44	95.01	99.59	77.60	95.69	99.56
90.0	80.08	95.84	99.64	80.89	96.66	99.70
92.5	84.23	96.82	99.71	84.74	97.64	99.82
95.0	88.89	97.90	99.81	89.04	98.63	99.92
97.5	93.81	99.02	99.90	93.87	99.65	100.00

Table 6. Selected percentiles for third- and fourth-quartile storms for a storm duration of 0 to 72 hours and a rainfall total of 1 inch or more.

Center of percent-of-storm-duration interval	Third-quartile storms			Fourth-quartile storms		
	10th percentile	50th percentile	90th percentile	10th percentile	50th percentile	90th percentile
2.5	0.45	2.51	8.13	0.43	3.28	11.93
5.0	.96	4.73	13.25	.92	5.16	18.53
7.5	1.42	6.86	17.94	1.37	7.53	24.03
10.0	1.81	8.96	22.26	1.75	9.59	28.07
12.5	2.21	10.92	26.05	2.04	11.30	30.76
15.0	2.59	12.76	29.37	2.51	12.93	32.60
17.5	2.91	14.41	32.21	2.95	14.30	34.08
20.0	3.22	15.95	34.87	3.55	15.98	35.70
22.5	3.56	17.34	37.16	4.18	17.64	37.55
25.0	3.80	18.66	39.21	5.00	19.46	39.43
27.5	4.08	19.91	41.07	5.71	21.27	41.14
30.0	4.32	21.05	42.74	6.48	23.10	42.66
32.5	4.61	22.08	44.15	7.16	24.71	43.85
35.0	4.82	22.89	45.40	7.86	26.30	44.73
37.5	5.12	23.45	46.48	8.45	27.67	45.45
40.0	5.39	23.77	47.38	8.99	28.95	46.11
42.5	5.84	24.24	48.28	9.58	30.19	46.79
45.0	6.48	25.14	49.80	10.25	31.51	47.54
47.5	7.51	27.11	52.46	11.03	32.86	48.52
50.0	8.84	30.15	56.44	11.73	34.27	49.60
52.5	10.53	34.37	61.64	12.44	35.65	50.83
55.0	12.45	39.28	67.86	12.95	36.92	52.17
57.5	14.51	44.53	74.03	13.45	38.02	53.56
60.0	16.71	49.48	79.32	13.76	39.04	54.83
62.5	19.05	54.35	83.56	14.04	39.90	56.11
65.0	21.52	58.90	86.82	14.42	40.72	57.25
67.5	24.30	63.36	89.28	15.66	41.71	58.66
70.0	27.37	67.56	91.37	17.04	43.15	60.39
72.5	30.78	71.75	93.22	19.05	45.03	62.82
75.0	34.87	75.58	94.79	21.42	47.52	66.21
77.5	39.77	79.15	96.02	24.00	50.60	70.65
80.0	45.21	82.29	96.91	26.18	54.45	75.41
82.5	51.52	85.28	97.51	28.99	59.01	80.60
85.0	58.42	87.93	97.99	32.14	64.24	85.60
87.5	65.64	90.36	98.44	36.96	70.27	89.88
90.0	72.88	92.62	98.86	44.05	76.81	93.26
92.5	80.35	94.86	99.23	53.75	83.44	95.95
95.0	87.52	97.15	99.55	65.55	90.01	97.86
97.5	94.68	98.94	99.85	79.24	96.48	99.34

Summary

A database of incremental cumulative-rainfall values for 1,659 runoff-producing storms that occurred during the period from 1959 to 1986 at or proximate to 91 U.S. Geological Survey streamflow-gaging stations located in small urban and rural watersheds in north and south central Texas was used to develop empirical, dimensionless, cumulative-rainfall hyetographs. Storm durations ranged from a few hours to several days, and cumulative-rainfall amounts ranged from less than 1 inch to more than 10 inches. Drainage areas for the 91 streamflow-gaging stations ranged from 0.26 to 166 square miles; however, drainage areas for 72 of the stations were less than 20 square miles.

Storm-quartile classifications were determined from the cumulative-rainfall values, which were divided into data groups on the basis of storm-quartile classification (first, second, third, fourth, and first through fourth combined), storm duration (0 to 6, 6 to 12, 12 to 24, 24 to 72, and 0 to 72 hours), and rainfall amount (1 inch or more). The storm-quartile classification depended upon when the heaviest rate of rainfall occurred during the storm duration. Removal of long leading tails, in effect, shortened the storm duration, and, in some cases, affected the storm-quartile classification. Therefore, two storm groups, untrimmed and trimmed, were used for analysis. The trimmed storms generally are preferred for interpretation. For a 12-hour or less trimmed storm duration, approximately 49 percent of the storms are first quartile. For trimmed storm durations of 12 to 24 and 24 to 72 hours, 47 and 38 percent, respectively, of the storms are first quartile. For a trimmed storm duration of 0 to 72 hours, the first-, second-, third-, and fourth-quartile storms accounted for 46, 21, 20, and 13 percent of all storms, respectively.

The 90th-percentile curve for first-quartile storms indicated about 90 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 10th-percentile curve for first-quartile storms indicated about 30 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 90th-percentile curve for fourth-quartile storms indicated about 33 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration. The 10th-percentile curve for fourth-quartile storms indicated less than 5 percent of the cumulative rainfall occurs during the first 20 percent of the storm duration.

Statistics for the empirical, dimensionless, cumulative-rainfall hyetographs are presented in the report along with hyetograph curves and tables. The hyetograph curves and tables presented do not present exact mathematical relations but can be used to estimate distributions of rainfall with time for small drainage areas of less than about 160 square miles in urban and small rural watersheds in Texas.

Acknowledgments

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Supplements 1–5

Supplement 1. Descriptive information for streamflow-gaging stations represented in hyetograph database.

[Data from Asquith, 2003; SH, State highway; FM, farm to market road; IH, Interstate highway; Sub., subwatershed]

Station number	Station name	Latitude	Longitude	Drainage area (square miles)	Approximate period of precipitation record	Number of storms
Austin (austin) database						
08154700	Bull Creek at Loop 360, Austin, Texas	30°22'19"	97°47'04"	22.3	1978–86	14
08155200	Barton Creek at SH 71, Oak Hill, Texas	30°17'46"	97°55'31"	89.7	1978–82	6
08155300	Barton Creek at Loop 360, Austin, Texas	30°14'40"	97°48'07"	116	1979–86	8
08155550	West Bouldin Creek at Riverside Drive, Austin, Texas	30°15'49"	97°45'17"	3.12	1977–85	10
08156650	Shoal Creek at Steck Avenue, Austin, Texas	30°21'55"	97°44'11"	2.79	1975–82	13
08156700	Shoal Creek at Northwest Park, Austin, Texas	30°20'50"	97°44'41"	7.03	1976–83	17
08156750	Shoal Creek at White Rock Drive, Austin, Texas	30°20'21"	97°44'50"	7.56	1976–80	14
08156800	Shoal Creek at 12th Street, Austin, Texas	30°16'35"	97°45'00"	12.3	1975–86	24
08157000	Waller Creek at 38th Street, Austin, Texas	30°17'49"	97°43'36"	2.31	1967–80	41
08157500	Waller Creek at 23rd Street, Austin, Texas	30°17'08"	97°44'01"	4.13	1967–80	40
08158050	Boggy Creek at U.S. 183, Austin, Texas	30°15'47"	97°40'20"	13.1	1976–85	10
08158100	Walnut Creek at FM 1325, Austin, Texas	30°24'35"	97°42'41"	12.6	1976–86	15
08158200	Walnut Creek at Dessau Road, Austin, Texas	30°22'30"	97°39'37"	26.2	1976–86	17
08158380	Little Walnut Creek at Georgian Drive, Austin, Texas	30°21'15"	97°41'52"	5.22	1985–86	2
08158400	Little Walnut Creek at IH 35, Austin, Texas	30°20'57"	97°41'34"	5.57	1976–81	10
08158500	Little Walnut Creek at Manor Road, Austin, Texas	30°18'34"	97°40'04"	12.1	1976–81	15
08158600	Walnut Creek at Webberville Road, Austin, Texas	30°16'59"	97°39'17"	51.3	1974–86	21
08158700	Onion Creek near Driftwood, Texas	30°04'59"	98°00'29"	124	1980–87	6
08158800	Onion Creek at Buda, Texas	30°05'09"	97°50'52"	166	1980–83	2
08158810	Bear Creek below FM 1826, Driftwood, Texas	30°09'19"	97°56'23"	12.2	1980–86	8
08158820	Bear Creek at FM 1626, Manchaca, Texas	30°08'25"	97°50'50"	24.0	1980–83	2
08158825	Little Bear Creek at FM 1626, Manchaca, Texas	30°07'31"	97°51'43"	21.0	1980–83	2

22 Empirical, Dimensionless, Cumulative-Rainfall Hyetographs for Selected Small Watersheds in Texas

Supplement 1. Descriptive information for streamflow-gaging stations represented in hyetograph database.—Continued

[Data from Asquith, 2003; SH, State highway; FM, farm to market road; IH, Interstate highway; Sub., subwatershed]

Station number	Station name	Latitude	Longitude	Drainage area (square miles)	Approximate period of precipitation record	Number of storms
Austin (austin) database—Continued						
08158840	Slaughter Creek at FM 1826, Austin, Texas	30°12'32"	97°54'11"	8.24	1979–86	11
08158860	Slaughter Creek at FM 2304, Austin, Texas	30°09'43"	97°49'55"	23.1	1981–82	2
08158880	Boggy Creek (south) at Circle "S" Road, Austin, Texas	30°10'50"	97°46'55"	3.58	1976–86	14
08158920	Williamson Creek at Oak Hill, Texas	30°14'06"	97°51'36"	6.3	1979–84	14
08158930	Williamson Creek at Manchaca Road, Austin, Texas	30°13'16"	97°47'36"	19.0	1976–84	18
08158970	Williamson Creek at Jimmy Clay Road, Austin, Texas	30°11'21"	97°43'56"	27.6	1976–86	16
08159150	Wilbarger Creek near Pflugerville, Texas	30°27'16"	97°36'02"	4.61	1967–77	29
Dallas (dallas) database						
08055580	Joes Creek at Royal Lane, Dallas, Texas	32°53'43"	96°41'36"	1.94	1974–79	7
08055600	Joes Creek, Dallas, Texas	32°51'41"	96°52'27"	7.51	1973–79	10
08055700	Bachman Branch, Dallas, Texas	32°51'37"	96°50'13"	10.0	1964–79	41
08056500	Turtle Creek, Dallas, Texas	32°48'26"	96°48'08"	7.98	1964–79	42
08057020	Coombs Creek at Sylvan Avenue, Dallas, Texas	32°46'01"	96°50'07"	4.75	1965–79	7
08057050	Cedar Creek at Bonnie View Road, Dallas, Texas	32°44'50"	96°47'44"	9.42	1974–79	3
08057120	Spanky Branch at McCallum Lane, Dallas, Texas	32°57'58"	96°48'11"	6.77	1973–78	5
08057130	Rush Branch at Arapaho Road, Dallas, Texas	32°57'45"	96°47'44"	1.22	1973–79	7
08057140	Cottonwood Creek at Forest Lane, Dallas, Texas	32°54'33"	96°45'54"	8.5	1973–78	6
08057160	Floyd Branch at Forest Lane, Dallas, Texas	32°54'33"	96°45'34"	4.17	1974–79	8
08057320	Ash Creek at Highland Road, Dallas, Texas	32°48'18"	96°43'04"	6.92	1973–78	5
08057415	Elam Creek at Seco Boulevard, Dallas, Texas	32°44'14"	96°41'36"	1.25	1973–79	8
08057418	Fivemile Creek at Kiest Boulevard, Dallas, Texas	32°42'19"	96°51'32"	7.65	1976–79	7
08057420	Fivemile Creek at U.S. 77, Dallas, Texas	32°41'15"	96°49'22"	13.2	1973–79	10
08057425	Woody Branch at U.S. 77, Dallas, Texas	32°40'58"	96°49'22"	11.5	1973–79	10

Supplement 1. Descriptive information for streamflow-gaging stations represented in hyetograph database.—Continued

[Data from Asquith, 2003; SH, State highway; FM, farm to market road; IH, Interstate highway; Sub., subwatershed]

Station number	Station name	Latitude	Longitude	Drainage area (square miles)	Approximate period of precipitation record	Number of storms
Dallas (dallas) database—Continued						
08057435	Newton Creek at IH 635, Dallas, Texas	32°39'19"	96°44'41"	5.91	1976–79	4
08057440	Whites Branch at IH 635, Dallas, Texas	32°39'26"	96°44'25"	2.53	1976–79	4
08057445	Prairie Creek at U.S. 175, Dallas, Texas	32°42'17"	96°40'11"	9.03	1976–79	8
08061620	Duck Creek at Buckingham Road, Garland, Texas	32°55'53"	96°39'55"	8.05	1973–79	8
08061920	South Mesquite Creek at SH 352, Mesquite, Texas	32°46'09"	96°37'18"	13.4	1973–79	9
08061950	South Mesquite Creek at Mercury Road, Mesquite, Texas	32°43'32"	96°34'12"	23.0	1969–79	31
Fort Worth (fortworth) database						
--	Seminary South Shopping Center and associated drainage area, Fort Worth, Texas	--	--	.38	1970–76	21
08048520	Sycamore Creek at IH 35–W, Fort Worth, Texas	32°39'55"	97°19'16"	17.7	1970–77	24
08048530	Sycamore Creek tributary above Seminary South Shopping Center, Fort Worth, Texas	32°41'08"	97°19'44"	.97	1970–77	28
08048540	Sycamore Creek tributary at IH 35–W, Fort Worth, Texas	32°41'18"	97°19'11"	1.35	1970–76	24
08048550	Dry Branch at Blandin Street, Fort Worth, Texas	32°47'19"	97°18'22"	1.08	1969–76	25
08048600	Dry Branch at Fain Street, Fort Worth, Texas	32°46'34"	97°17'18"	2.15	1969–77	27
08048820	Little Fossil Creek at IH 820, Fort Worth, Texas	32°50'22"	97°19'22"	5.64	1969–77	20
08048850	Little Fossil Creek at Mesquite Street, Fort Worth, Texas	32°48'33"	97°17'28"	12.3	1969–77	25
San Antonio (sanantonio) database						
08177600	Olmos Creek tributary at FM 1535, Shavano Park, Texas	29°34'35"	98°32'45"	.33	1970–81	14
08177700	Olmos Creek at Dresden Drive, San Antonio, Texas	29°29'56"	98°30'36"	21.2	1969–78	23
08178300	Alazan Creek at St. Cloud Street, San Antonio, Texas	29°27'29"	98°32'59"	3.26	1969–79	30
08178555	Harlendale Creek at West Harding Street, San Antonio, Texas	29°21'05"	98°29'32"	2.43	1977–80	10

24 Empirical, Dimensionless, Cumulative-Rainfall Hyetographs for Selected Small Watersheds in Texas

Supplement 1. Descriptive information for streamflow-gaging stations represented in hyetograph database.—Continued

[Data from Asquith, 2003; SH, State highway; FM, farm to market road; IH, Interstate highway; Sub., subwatershed]

Station number	Station name	Latitude	Longitude	Drainage area (square miles)	Approximate period of precipitation record	Number of storms
San Antonio (sanantonio) database—Continued						
08178600	Panther Springs Creek at FM 2696 near San Antonio, Texas	29°37'31"	98°31'06"	9.54	1969–75	13
08178620	Lorence Creek at Thousand Oaks Boulevard, San Antonio, Texas	29°35'24"	98°27'47"	4.05	1981–81	3
08178640	West Elm Creek at San Antonio, Texas	29°37'23"	98°26'29"	2.45	1976–79	8
08178645	East Elm Creek at San Antonio, Texas	29°37'04"	98°25'41"	2.33	1976–79	6
08178690	Salado Creek tributary at Bitters Road, San Antonio, Texas	29°31'36"	98°26'25"	.26	1969–81	41
08178736	Salado Creek tributary at Bee Street, San Antonio, Texas	29°26'38"	98°27'13"	.45	1972–76	12
08181000	Leon Creek tributary at FM 1604, San Antonio, Texas	29°35'14"	98°37'40"	5.57	1970–79	10
08181400	Helotes Creek at Helotes, Texas	29°34'42"	98°41'29"	15.0	1969–81	15
08181450	Leon Creek tributary at Kelly Air Force Base, Texas	29°23'12"	98°36'00"	1.19	1969–79	30
Small rural watersheds (smallruralsheds) database						
08042650	North Creek Sub. 28A near Jermyn, Texas	33°14'52"	98°19'19"	6.82	1973–79	14
08042700	North Creek near Jacksboro, Texas	33°16'57"	98°17'53"	21.6	1959–79	58
08050200	Elm Fork Sub. 6 near Muenster, Texas	33°37'13"	97°24'15"	.77	1961–70	34
08052630	Little Elm Creek Sub. 10 near Gunter, Texas	33°24'33"	96°48'41"	2.10	1966–76	29
08052700	Little Elm Creek near Aubrey, Texas	33°17'00"	96°53'33"	75.5	1959–76	58
08057500	Honey Creek Sub. 11 near McKinney, Texas	33°18'12"	96°41'22"	2.14	1960–70	32
08058000	Honey Creek Sub. 12 near McKinney, Texas	33°18'20"	96°40'12"	1.26	1959–70	29
08063200	Pin Oak Creek near Hubbard, Texas	31°48'01"	96°43'02"	17.6	1959–71	33
08094000	Green Creek Sub. 1 near Dublin, Texas	32°10'00"	98°20'30"	¹ 3.18/4.19	1959–71	29
08096800	Cow Bayou Sub. 4 near Bruceville, Texas	31°19'59"	97°16'02"	¹ 5.25/5.04	1959–75	51
08098300	Little Pond Creek near Burlington, Texas	31°01'35"	96°59'17"	22.2	1964–72	19
08108200	North Elm Creek near Cameron, Texas	30°55'52"	97°01'13"	48.6	1964–72	21
08136900	Mukewater Creek Sub. 10A near Trickham, Texas	31°39'01"	99°13'30"	21.8	1966–73	22

Supplement 1. Descriptive information for streamflow-gaging stations represented in hyetograph database.—Continued

[Data from Asquith, 2003; SH, State highway; FM, farm to market road; IH, Interstate highway; Sub., subwatershed]

Station number	Station name	Latitude	Longitude	Drainage area (square miles)	Approximate period of precipitation record	Number of storms
Small rural watersheds (smallruralsheds) database—Continued						
08137000	Mukewater Creek Sub. 9 near Trickham, Texas	31°41'40"	99°12'18"	4.02	1961–73	38
08137500	Mukewater Creek at Trickham, Texas	31°35'24"	99°13'36"	70.4	1959–61	5
08139000	Deep Creek Sub. 3 near Placid, Texas	31°17'25"	99°09'22"	3.42	1960–71	29
08140000	Deep Creek Sub. 8 near Mercury, Texas	31°24'08"	99°07'17"	¹ 4.32/5.41	1960–71	30
08182400	Calaveras Creek Sub. 6 near Elmendorf, Texas	29°22'49"	98°17'33"	7.01	1961–71	25
08187000	Escondido Creek Sub. 1 near Kenedy, Texas	28°46'41"	97°53'41"	3.29	1959–71	32
08187900	Escondido Creek Sub. 11 near Kenedy, Texas	28°51'39"	97°50'39"	8.43	1962–70	21

¹Both drainage areas have been published for this station.

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First-quartile storms; storm duration 0 to 6 hours															
2.5	0	0	0	0	0	0	0	0	0	3.57	7.75	2.43	42.52	6.52	203
5.0	4.06	6.46	8.75	9.58	13.29	17.98	19.81	22.42	25.04	28.35	37.91	18.61	162.10	12.73	70
7.5	4.79	9.65	11.01	13.79	16.23	18.11	24.63	31.44	34.68	37.00	48.09	23.42	255.77	15.99	76
10.0	11.58	19.16	21.31	23.28	27.97	32.89	37.03	45.12	46.74	50.00	58.99	34.47	307.38	17.53	85
12.5	14.49	22.60	27.19	29.31	34.35	36.22	39.34	49.15	53.74	59.80	64.29	39.41	372.42	19.30	69
15.0	18.89	30.17	31.87	34.77	37.79	41.27	48.74	53.90	59.69	61.86	72.60	44.73	388.65	19.71	72
17.5	19.65	33.13	38.87	41.37	47.83	54.33	60.92	66.42	68.97	71.79	77.39	52.33	429.78	20.73	83
20.0	32.61	45.81	50.13	51.97	59.06	63.37	67.23	71.55	75.09	78.95	83.90	61.02	365.99	19.13	69
22.5	36.13	45.91	51.92	57.41	62.03	67.72	75.25	78.29	81.48	84.39	90.81	65.72	392.25	19.81	77
25.0	36.92	44.37	49.28	53.14	61.09	67.86	75.90	79.45	81.60	83.01	89.28	65.00	422.48	20.55	67
27.5	47.00	53.79	57.83	59.78	64.02	68.21	72.92	78.95	79.71	82.36	88.29	67.76	261.11	16.16	65
30.0	52.55	60.27	62.58	64.56	73.80	76.47	83.77	85.37	85.86	86.44	91.45	74.39	219.16	14.80	61
32.5	45.27	55.23	59.29	66.51	71.53	77.60	82.28	84.31	85.85	87.29	90.18	71.78	374.61	19.35	71
35.0	56.45	61.32	64.69	65.97	75.49	80.21	86.37	87.74	88.51	90.51	96.01	77.48	208.57	14.44	52
37.5	44.95	62.51	65.27	66.76	77.25	83.81	86.79	89.17	90.13	91.51	93.20	75.53	453.94	21.31	50
40.0	67.65	76.77	79.80	80.50	82.02	85.76	88.61	91.42	92.72	93.11	95.72	84.10	107.89	10.39	60
42.5	57.69	66.67	69.92	74.68	80.00	86.83	88.89	90.05	93.28	94.09	96.79	80.52	262.30	16.20	54
45.0	54.55	68.18	74.87	78.96	81.12	88.07	90.57	92.13	92.70	93.75	96.79	81.15	279.11	16.71	54
47.5	72.66	80.17	81.12	82.55	84.85	88.50	89.36	90.97	91.74	93.79	97.41	86.06	78.44	8.86	38
50.0	67.99	71.82	74.98	76.74	85.00	87.30	91.06	93.53	93.80	94.07	95.98	84.05	140.62	11.86	54
52.5	67.46	76.89	78.84	81.48	82.93	87.62	91.28	92.97	93.94	95.97	98.28	83.68	288.56	16.99	43
55.0	73.06	77.97	81.20	84.12	87.08	92.13	93.55	94.19	96.00	96.53	98.64	86.96	164.53	12.83	43
57.5	72.73	78.07	80.02	83.99	85.65	87.69	92.15	93.93	94.84	96.30	99.02	86.50	132.49	11.51	36
60.0	73.51	82.96	85.70	87.72	91.26	93.15	94.26	95.23	95.86	96.50	98.29	87.78	254.53	15.95	44
62.5	63.64	81.12	87.63	88.18	88.80	91.50	93.06	94.74	96.64	97.10	99.76	87.07	247.91	15.75	39
65.0	86.23	89.79	90.00	91.84	93.72	94.56	96.35	96.74	97.00	97.74	99.34	93.91	17.98	4.24	27
67.5	67.07	72.73	77.33	79.43	89.09	91.75	93.35	95.07	96.26	96.94	98.40	84.95	272.23	16.50	57
70.0	78.67	88.69	91.75	92.32	93.78	94.38	95.25	96.23	97.08	97.68	98.84	92.49	46.12	6.79	27
72.5	69.18	90.96	91.20	92.08	94.18	94.85	95.63	97.34	97.73	97.91	99.26	90.54	185.61	13.62	43
75.0	73.14	79.76	88.81	92.08	94.50	95.78	96.51	96.71	97.14	97.43	99.79	90.55	129.44	11.38	38
77.5	76.95	88.46	90.59	92.46	93.69	94.41	95.64	97.96	98.22	98.60	99.37	91.58	120.34	10.97	36
80.0	77.31	87.45	92.44	94.03	95.44	96.30	97.09	98.27	98.38	98.92	99.46	91.09	299.43	17.30	35
82.5	80.42	89.15	93.07	94.83	96.48	97.14	97.57	98.31	98.53	98.66	100.00	92.58	160.69	12.68	35
85.0	81.01	84.79	94.35	95.09	96.32	96.66	97.81	98.52	98.66	98.91	99.24	94.02	47.61	6.90	28
87.5	89.71	94.38	94.98	96.40	96.61	98.06	98.57	98.87	98.93	99.24	99.94	95.48	77.56	8.81	31
90.0	88.00	93.93	94.58	95.64	96.52	98.26	98.94	99.16	99.21	99.40	100.00	95.43	66.75	8.17	40
92.5	93.26	96.01	97.46	97.49	98.55	98.66	99.44	99.84	100.00	100.00	100.00	97.17	36.57	6.05	31
95.0	84.97	95.65	97.13	97.21	97.44	98.36	98.84	99.14	99.14	99.60	100.00	96.30	27.63	5.26	19
97.5	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99	.01	.12	162

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First-quartile storms; storm duration 6 to 12 hours															
2.5	0	0	0	0	0	1.26	4.57	9.10	11.86	14.43	24.53	7.26	115.31	10.74	283
5.0	6.16	8.54	11.47	13.67	18.96	22.22	26.70	32.61	39.33	42.49	52.96	26.50	340.31	18.45	137
7.5	13.43	16.14	20.01	22.79	27.72	31.45	36.98	44.81	50.16	53.53	65.97	35.15	399.51	19.99	137
10.0	14.62	23.88	27.08	30.71	35.31	39.33	52.00	57.72	62.40	69.84	82.29	45.07	551.61	23.49	139
12.5	16.31	27.02	31.53	32.73	38.28	44.87	54.51	61.40	67.75	76.91	86.02	48.85	609.83	24.69	120
15.0	24.94	33.83	37.74	39.30	45.20	50.87	58.29	66.38	73.02	77.79	88.16	54.20	522.63	22.86	123
17.5	26.24	37.04	41.71	44.03	50.00	53.64	61.02	65.11	71.18	76.30	87.08	55.90	481.88	21.95	116
20.0	31.53	41.57	45.56	47.49	58.44	64.18	68.73	74.16	79.51	84.78	94.46	62.27	504.04	22.45	108
22.5	33.12	44.62	46.40	50.94	57.42	64.45	70.62	76.00	80.41	83.17	93.48	62.76	493.87	22.22	97
25.0	36.11	48.20	51.46	55.99	59.25	65.60	72.26	77.14	81.88	83.33	88.91	64.71	405.52	20.14	95
27.5	46.87	53.43	58.68	60.61	65.08	70.11	73.75	83.04	86.29	88.39	94.35	69.43	398.19	19.95	86
30.0	46.71	53.45	58.06	61.59	67.83	73.07	77.42	84.00	86.05	87.78	93.64	70.68	350.22	18.71	95
32.5	47.57	53.76	59.08	65.57	72.84	77.74	81.54	84.31	85.91	87.19	92.96	72.61	342.65	18.51	91
35.0	52.38	58.57	63.39	66.32	74.41	80.10	83.16	86.00	86.45	87.67	95.61	75.04	304.82	17.46	67
37.5	58.32	67.14	69.83	72.15	79.55	84.00	86.52	87.80	89.52	90.22	95.00	78.55	271.04	16.46	63
40.0	53.57	65.61	70.51	75.20	78.72	83.89	87.13	89.69	90.46	91.32	96.55	79.36	218.70	14.79	63
42.5	58.55	70.75	73.18	74.20	79.03	84.00	88.16	91.01	91.24	91.36	95.87	80.47	203.92	14.28	58
45.0	59.58	69.75	74.92	77.03	80.57	84.00	87.01	90.36	91.22	91.46	95.17	80.45	215.87	14.69	57
47.5	53.22	64.51	73.60	76.62	80.86	84.47	90.29	92.06	92.30	92.89	96.04	78.92	418.18	20.45	57
50.0	53.60	62.05	69.33	74.61	78.05	81.14	84.00	88.70	89.89	91.87	94.91	76.79	356.95	18.89	62
52.5	53.46	70.78	78.14	79.21	82.86	85.52	90.27	92.68	94.26	95.93	98.29	80.07	490.78	22.15	60
55.0	51.83	67.20	75.07	77.15	80.69	83.92	86.83	92.18	93.20	94.98	97.62	79.73	341.13	18.47	56
57.5	57.49	75.19	80.00	80.74	83.82	86.33	88.15	90.43	92.66	97.43	98.52	82.30	307.56	17.54	51
60.0	61.86	72.11	76.93	82.39	83.32	84.41	88.25	91.59	92.80	95.07	97.13	82.83	195.69	13.99	48
62.5	61.87	76.37	79.84	82.71	85.58	87.55	89.85	92.65	95.94	96.78	98.85	84.02	244.60	15.64	46
65.0	70.87	77.20	79.12	80.00	82.26	83.58	85.93	91.70	92.11	96.28	100.00	83.23	235.41	15.34	39
67.5	59.26	74.93	76.99	79.73	83.33	85.03	89.54	91.46	93.23	96.00	97.62	82.41	233.67	15.29	59
70.0	53.16	76.00	79.79	82.49	84.02	88.03	90.95	93.41	95.02	96.89	99.78	83.20	298.99	17.29	47
72.5	65.89	80.76	82.12	82.70	86.17	89.36	90.78	93.63	94.79	96.90	98.89	86.23	149.03	12.21	45
75.0	75.36	81.06	82.40	84.37	87.05	88.62	93.11	95.21	97.92	98.49	100.00	86.90	208.88	14.45	48
77.5	55.40	80.14	82.78	83.99	86.88	89.76	91.24	94.09	95.67	97.12	99.01	84.26	326.23	18.06	56
80.0	41.07	73.24	82.78	86.27	89.69	91.94	93.53	94.52	95.43	96.90	99.26	82.73	531.28	23.05	55
82.5	42.92	71.19	82.39	83.25	90.22	91.05	93.87	97.25	98.45	98.53	99.13	82.83	501.25	22.39	51
85.0	51.29	77.77	81.63	85.35	88.66	93.15	95.75	97.64	98.31	98.60	99.31	85.18	368.56	19.20	57
87.5	62.79	86.27	87.75	89.07	91.74	95.26	97.14	97.78	98.21	99.02	99.41	88.82	266.89	16.34	54
90.0	72.12	84.65	88.50	89.07	93.34	95.43	97.18	98.02	98.38	98.58	99.53	89.87	188.00	13.71	57
92.5	84.37	90.43	92.05	93.02	94.88	96.67	97.55	98.32	98.64	98.94	99.54	93.45	77.73	8.82	67
95.0	89.43	93.30	94.26	96.29	97.52	98.06	98.58	99.20	99.40	99.63	100.00	95.97	34.47	5.87	41
97.5	97.94	99.46	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.11	8.42	2.90	181

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First-quartile storms; storm duration 12 to 24 hours															
2.5	0	0	0	0.38	2.13	4.37	6.94	10.55	12.76	16.07	27.67	9.36	162.77	12.76	648
5.0	5.07	11.13	13.22	15.24	18.43	21.57	27.22	34.14	37.43	45.04	55.23	27.45	410.08	20.25	375
7.5	9.13	17.40	22.26	24.36	28.05	31.31	36.96	45.95	50.84	55.49	65.21	36.08	444.61	21.09	392
10.0	15.10	26.36	31.52	33.20	36.37	39.75	48.66	58.26	62.13	65.91	75.00	45.11	500.16	22.36	372
12.5	19.79	30.40	36.22	38.40	42.23	45.90	53.98	64.86	71.53	75.10	85.34	50.70	554.05	23.54	361
15.0	25.00	34.35	40.24	42.84	48.61	52.14	56.72	66.67	75.85	79.85	87.45	54.84	505.40	22.48	357
17.5	33.84	43.34	47.92	50.45	53.99	57.34	62.08	69.74	75.75	81.06	90.03	59.25	443.98	21.07	324
20.0	44.27	50.03	51.62	53.71	57.95	59.97	64.18	73.80	77.16	80.72	88.70	63.25	327.85	18.11	290
22.5	49.60	52.90	54.59	58.04	62.43	65.64	68.66	76.20	79.82	81.24	89.80	66.34	293.39	17.13	287
25.0	52.08	56.01	59.96	63.96	69.78	71.82	74.38	78.43	80.42	83.48	90.38	70.14	263.91	16.25	250
27.5	51.91	57.46	62.81	67.73	74.62	78.25	80.48	82.40	83.62	85.29	90.57	72.89	288.00	16.97	243
30.0	53.52	63.02	68.73	72.37	80.88	82.50	84.17	85.73	86.46	87.78	93.24	76.23	318.77	17.85	218
32.5	52.16	59.60	68.19	72.75	78.64	86.33	88.68	90.63	91.22	91.87	94.00	77.01	409.24	20.23	200
35.0	55.46	62.86	69.43	73.59	82.76	88.46	92.82	93.86	94.81	95.19	96.14	79.97	402.57	20.06	179
37.5	48.43	61.76	67.24	72.79	78.04	86.32	90.38	93.79	94.85	95.79	97.04	78.29	440.68	20.99	156
40.0	48.67	58.33	63.72	73.29	78.27	86.67	90.06	93.69	95.45	96.14	97.95	77.43	510.73	22.60	143
42.5	52.05	59.27	67.01	73.56	80.67	88.81	93.40	94.85	95.45	96.12	98.11	80.41	353.12	18.79	130
45.0	58.94	69.34	73.77	77.63	82.00	89.22	93.40	95.78	96.16	96.60	98.11	83.50	216.87	14.73	117
47.5	53.39	62.31	68.62	74.17	80.23	87.55	91.76	94.34	96.14	96.26	98.12	80.92	316.84	17.80	132
50.0	55.54	67.72	74.37	78.94	82.85	88.77	93.81	95.17	96.26	97.19	98.34	82.86	300.98	17.35	104
52.5	59.01	71.70	80.26	82.86	88.70	91.76	94.50	96.18	96.50	97.19	98.80	85.17	286.65	16.93	118
55.0	63.07	74.68	78.36	80.26	83.94	89.71	91.67	94.25	96.15	97.04	98.24	84.61	200.90	14.17	77
57.5	60.76	65.74	71.27	76.50	86.17	91.50	93.32	96.21	97.07	97.32	98.25	83.53	296.33	17.21	93
60.0	60.86	73.74	81.75	83.46	89.58	92.32	94.28	96.36	96.96	97.26	99.11	85.79	272.64	16.51	90
62.5	62.03	76.10	78.60	79.68	83.88	90.51	93.03	95.26	97.00	97.84	99.23	85.42	180.56	13.44	83
65.0	69.40	80.29	81.75	83.34	87.23	93.49	94.54	96.52	96.72	97.60	99.26	87.15	216.83	14.73	93
67.5	62.73	76.20	81.82	84.47	87.92	93.23	94.77	97.07	97.91	98.36	99.73	86.68	245.81	15.68	87
70.0	61.19	70.83	76.41	78.85	85.10	89.10	93.65	94.92	95.83	97.64	99.83	84.27	264.98	16.28	77
72.5	60.47	64.06	72.89	77.37	85.88	91.10	95.87	97.64	98.06	98.73	100.00	83.93	323.26	17.98	87
75.0	62.27	70.85	75.86	79.17	86.04	89.76	93.68	95.56	97.12	98.18	99.85	85.36	188.94	13.75	84
77.5	64.25	71.98	78.81	82.72	88.36	90.51	93.93	96.86	97.54	98.18	99.08	85.70	242.45	15.57	116
80.0	67.77	80.28	83.90	87.06	91.22	93.84	95.52	96.35	97.22	97.90	99.37	88.35	164.08	12.81	91
82.5	66.47	80.05	84.14	88.53	92.49	94.64	96.85	97.52	97.91	99.00	100.00	89.29	152.81	12.36	93
85.0	72.33	79.44	81.48	84.44	90.98	93.56	96.04	97.04	97.67	98.01	98.53	89.37	101.67	10.08	92
87.5	81.73	87.25	88.54	89.53	91.89	94.76	96.95	97.92	98.42	99.02	99.64	92.31	58.90	7.67	128
90.0	84.94	91.18	91.69	92.19	94.75	96.80	97.75	98.17	98.33	99.06	99.64	94.12	44.06	6.64	101
92.5	83.52	92.15	92.19	92.60	93.23	94.98	97.48	98.26	98.49	98.76	99.51	94.07	34.70	5.89	95
95.0	83.36	89.25	90.68	93.75	94.79	95.76	97.72	98.35	98.72	99.05	99.76	92.67	114.38	10.70	103
97.5	93.80	97.55	98.49	99.44	100.00	100.00	100.00	100.00	100.00	100.00	100.00	97.80	38.82	6.23	315

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First-quartile storms; storm duration 24 to 72 hours															
2.5	0	0	0.84	2.55	4.72	7.78	13.15	20.75	23.97	30.54	41.68	16.35	423.15	20.57	457
5.0	8.29	13.60	15.35	17.82	23.59	30.51	37.62	45.61	47.00	51.46	63.57	34.03	523.25	22.87	222
7.5	10.46	21.24	24.77	27.59	33.12	37.50	42.94	50.67	53.13	59.67	71.18	40.75	528.05	22.98	191
10.0	15.48	25.43	29.55	32.17	35.48	41.66	47.03	53.61	60.39	66.88	79.73	45.09	570.34	23.88	180
12.5	16.51	28.59	32.14	34.53	41.95	50.53	55.63	62.43	70.58	75.47	84.73	50.12	623.08	24.96	165
15.0	23.16	33.20	35.48	40.90	45.09	51.18	55.82	63.93	69.72	71.90	86.94	52.96	511.08	22.61	159
17.5	26.10	34.08	40.79	43.60	48.85	53.29	60.85	65.51	71.24	74.54	87.69	54.88	478.14	21.87	135
20.0	25.05	33.83	35.71	45.47	51.64	55.56	67.50	74.82	78.55	80.19	87.97	57.73	571.25	23.90	127
22.5	33.60	38.11	45.10	46.92	54.22	59.96	70.19	77.75	80.21	81.88	91.66	61.45	465.01	21.56	122
25.0	45.00	52.26	54.50	56.50	59.40	70.52	75.34	81.35	82.52	85.03	96.36	67.98	352.03	18.76	92
27.5	34.86	50.32	52.36	54.65	60.45	63.32	75.54	81.68	86.42	87.50	92.02	66.66	416.79	20.42	79
30.0	29.47	36.81	38.41	47.24	58.22	63.41	66.24	76.35	80.61	88.27	95.48	61.78	565.26	23.78	84
32.5	38.83	48.48	52.09	53.01	54.82	58.12	64.01	69.76	76.34	80.86	90.79	62.27	360.80	18.99	82
35.0	44.67	58.57	60.14	61.30	62.50	63.84	65.33	73.19	77.43	80.90	91.90	66.94	271.70	16.48	90
37.5	50.78	60.75	64.01	64.58	65.32	66.07	67.43	73.60	76.40	81.01	92.39	68.32	259.49	16.11	82
40.0	60.44	66.55	67.17	67.54	68.26	69.48	71.14	80.13	83.27	87.30	96.47	73.70	191.88	13.85	70
42.5	58.64	65.35	67.25	68.40	69.79	71.20	76.36	84.66	87.67	92.41	95.91	74.99	208.01	14.42	74
45.0	59.80	66.88	68.47	69.94	71.35	76.50	85.35	91.38	94.71	95.76	99.24	78.18	317.01	17.80	58
47.5	52.10	67.41	68.82	69.90	71.32	78.41	82.24	91.52	94.86	96.97	98.92	77.61	339.04	18.41	48
50.0	60.00	69.41	69.94	70.00	71.97	73.95	80.39	88.96	95.34	96.75	99.27	78.07	241.96	15.55	64
52.5	56.58	66.21	68.29	69.95	71.99	74.46	81.43	88.67	90.15	92.97	98.98	77.60	217.42	14.75	60
55.0	57.45	66.14	67.74	68.95	73.86	76.36	84.73	90.18	94.38	96.40	99.27	78.29	246.76	15.71	53
57.5	63.11	69.83	72.13	72.58	76.77	82.27	88.36	92.29	96.60	97.29	99.59	81.83	195.41	13.98	55
60.0	49.75	56.59	62.01	64.91	70.07	75.17	80.26	89.99	92.23	97.88	100.00	75.65	298.98	17.29	46
62.5	55.76	64.13	65.82	68.68	71.36	74.54	78.59	82.90	90.75	93.98	98.93	74.92	326.55	18.07	67
65.0	57.95	65.57	67.37	68.97	75.44	80.43	86.47	93.37	95.43	96.96	100.00	78.64	351.70	18.75	48
67.5	46.02	66.10	67.23	72.12	77.20	80.22	82.56	88.37	91.08	95.78	99.41	78.14	294.22	17.15	48
70.0	63.26	70.00	71.60	74.13	78.44	85.41	90.82	95.04	97.26	97.96	99.38	81.97	269.02	16.40	60
72.5	51.37	72.07	75.00	75.64	77.61	81.64	90.55	94.58	95.99	96.50	100.00	81.31	267.23	16.35	46
75.0	54.77	65.15	67.28	70.97	77.61	79.84	84.43	92.62	97.31	98.56	100.00	79.83	254.31	15.95	57
77.5	65.20	72.25	75.53	78.51	81.31	85.33	91.97	96.01	97.96	98.96	99.66	84.57	178.65	13.37	54
80.0	68.76	75.93	77.13	79.22	83.64	88.68	92.97	93.96	97.47	98.50	99.70	86.41	125.11	11.19	47
82.5	68.95	73.48	74.17	78.80	82.84	87.06	93.44	94.15	94.73	96.97	98.80	84.67	172.51	13.13	56
85.0	69.87	74.60	79.33	82.21	84.31	92.43	95.06	97.51	98.23	98.76	100.00	87.71	133.87	11.57	64
87.5	73.40	77.51	78.55	79.80	81.20	81.82	85.59	90.73	94.60	95.48	98.92	84.53	97.40	9.87	74
90.0	74.34	80.80	82.12	82.46	83.07	84.23	89.35	93.80	96.24	98.16	99.59	86.56	103.76	10.19	92
92.5	79.79	82.60	83.47	84.12	87.62	90.61	95.28	96.96	97.59	98.80	99.27	89.61	89.67	9.47	93
95.0	83.00	84.89	86.42	87.56	91.15	93.82	96.26	97.84	98.21	98.91	99.47	91.49	78.77	8.88	80
97.5	89.28	94.80	96.04	97.45	98.98	99.78	100.00	100.00	100.00	100.00	100.00	97.04	24.94	4.99	234

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples	
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th					
First-quartile storms; storm duration 0 to 72 hours																
2.5	0	0	0	0	0.96	3.72	6.55	10.89	13.70	18.02	31.08	10.11	234.17	15.30	1,591	
5.0	6.04	10.87	13.19	15.24	18.88	22.84	28.11	35.84	40.81	45.89	56.48	28.34	425.96	20.64	804	
7.5	9.36	16.30	20.42	23.59	27.98	31.97	37.31	45.61	50.28	54.66	65.57	35.83	459.47	21.44	796	
10.0	15.06	24.24	28.07	31.65	35.48	39.18	46.75	54.50	60.21	65.29	76.18	43.93	515.55	22.71	776	
12.5	18.23	28.02	32.73	35.87	40.55	45.29	53.52	61.81	66.79	74.45	84.05	49.16	572.41	23.93	715	
15.0	24.48	33.50	37.68	40.58	46.13	51.18	56.03	64.24	69.01	77.40	86.65	53.29	506.63	22.51	711	
17.5	28.39	38.87	43.54	46.80	51.85	56.11	61.52	67.93	71.88	77.16	86.13	56.89	462.25	21.50	658	
20.0	34.21	45.59	48.90	51.77	56.70	60.58	67.00	73.83	77.59	81.25	88.51	61.63	420.99	20.52	594	
22.5	37.23	49.86	52.43	54.22	60.34	65.07	69.92	76.69	80.00	81.71	90.03	64.64	380.01	19.49	583	
25.0	44.38	52.90	56.19	58.77	65.60	70.95	74.10	79.33	81.50	84.00	89.97	68.04	333.28	18.26	504	
27.5	47.26	54.65	58.89	61.94	67.96	74.39	79.47	81.98	83.69	86.33	90.67	70.52	332.50	18.23	473	
30.0	45.70	56.25	60.05	63.75	70.89	77.93	82.80	85.23	86.05	87.69	93.24	72.18	386.00	19.65	458	
32.5	47.52	54.21	57.21	62.17	70.94	77.82	83.62	87.33	88.78	90.32	93.01	72.55	409.66	20.24	444	
35.0	53.78	60.73	62.56	63.98	72.10	79.86	86.41	90.13	92.58	93.80	95.81	75.76	356.04	18.87	388	
37.5	50.23	63.24	65.00	66.34	72.90	79.67	85.89	89.52	91.25	93.07	96.34	75.61	386.93	19.67	351	
40.0	53.70	65.55	67.92	70.12	76.82	81.88	87.41	90.51	92.78	93.70	97.29	78.21	328.55	18.13	336	
42.5	54.36	65.56	68.45	70.22	76.80	83.29	88.71	91.89	93.73	94.77	97.21	79.17	281.58	16.78	316	
45.0	59.59	68.55	71.03	75.33	80.52	85.07	90.04	92.15	94.40	95.81	97.78	81.37	252.82	15.90	286	
47.5	54.16	66.97	70.88	74.58	80.54	84.87	90.30	92.73	94.21	95.78	98.19	80.64	315.09	17.75	275	
50.0	58.76	69.44	71.24	73.80	79.38	84.00	88.96	93.53	94.34	95.51	97.90	80.68	278.14	16.68	284	
52.5	58.97	70.00	72.29	77.68	82.73	87.62	91.50	94.26	95.89	96.40	98.75	82.24	325.27	18.04	281	
55.0	59.08	71.35	74.48	76.82	81.52	85.64	90.60	93.87	94.60	96.20	98.15	82.40	250.17	15.82	229	
57.5	62.82	71.12	74.39	78.62	83.90	87.68	91.30	93.98	96.26	97.23	98.65	83.32	252.36	15.89	235	
60.0	59.24	70.85	74.74	80.00	83.86	89.51	92.66	94.66	95.68	96.88	98.81	83.50	276.38	16.62	228	
62.5	61.48	69.95	73.74	76.67	81.71	86.89	90.66	93.59	95.23	96.88	99.14	82.43	269.22	16.41	235	
65.0	65.91	75.84	79.64	81.74	84.97	89.93	93.65	96.15	96.65	97.22	99.40	85.32	247.97	15.75	207	
67.5	63.01	71.82	76.96	79.03	84.22	88.18	92.24	94.70	96.30	97.27	99.01	83.65	267.93	16.37	251	
70.0	61.59	73.25	77.32	79.71	85.16	89.10	93.28	95.05	96.72	97.50	99.38	84.43	256.09	16.00	211	
72.5	60.93	75.00	77.80	81.48	87.23	91.20	94.68	96.11	97.27	97.94	99.52	85.14	258.88	16.09	221	
75.0	61.58	74.03	77.75	79.66	84.52	89.40	93.48	96.47	97.32	98.07	100.00	85.16	212.28	14.57	227	
77.5	64.93	77.08	80.92	83.29	87.44	90.57	93.76	95.99	97.54	98.19	99.20	85.97	235.81	15.36	262	
80.0	68.39	78.04	82.73	86.41	90.67	93.07	95.00	96.37	97.25	98.05	99.37	87.02	273.17	16.53	228	
82.5	65.60	75.99	82.39	85.03	90.68	93.75	95.75	97.29	97.79	98.44	99.69	87.28	246.01	15.68	235	
85.0	71.64	79.64	81.88	84.27	90.45	94.19	96.15	97.52	98.00	98.43	99.15	88.48	173.67	13.18	241	
87.5	76.39	81.77	83.87	86.98	90.10	94.27	96.10	97.77	98.28	98.87	99.48	89.99	123.59	11.12	287	
90.0	78.97	83.42	85.83	88.91	92.19	94.85	96.98	98.11	98.44	98.91	99.63	91.07	107.04	10.35	290	
92.5	82.46	86.70	89.81	92.00	93.48	95.50	97.38	98.40	98.65	98.98	99.65	92.81	68.87	8.30	286	
95.0	83.64	88.58	90.15	91.94	94.79	96.60	97.78	98.52	98.88	99.15	99.72	93.12	85.51	9.25	243	
97.5	94.78	98.32	99.18	99.68	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.26	23.11	4.81	892	

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Second-quartile storms; storm duration 0 to 6 hours															
2.5	0	0	0	0	0	0	0	0	0	0	0	0.25	1.42	1.19	97
5.0	.66	1.09	1.14	1.47	1.84	2.28	2.70	4.08	4.54	5.52	10.21	3.47	9.63	3.10	14
7.5	.81	1.84	2.84	4.22	5.16	5.81	7.17	9.38	9.76	11.77	17.19	7.20	28.61	5.35	19
10.0	1.85	3.81	5.02	5.38	6.30	7.52	9.58	13.30	15.24	17.40	19.33	10.02	61.42	7.84	37
12.5	1.41	2.91	5.14	6.06	8.33	10.04	11.35	13.53	16.67	19.15	25.00	10.89	53.87	7.34	19
15.0	5.97	6.71	6.99	7.51	9.14	10.57	13.91	16.60	17.00	18.72	34.58	14.05	82.57	9.09	15
17.5	.99	7.14	7.61	10.05	11.83	13.23	17.28	20.52	22.66	24.20	26.74	16.31	176.33	13.28	26
20.0	5.75	12.75	13.73	15.69	17.59	20.85	23.51	25.79	26.23	26.70	36.45	20.70	104.74	10.23	32
22.5	2.48	7.01	7.12	7.65	14.43	18.20	22.39	26.71	27.87	30.00	48.51	20.54	271.97	16.49	30
25.0	4.42	8.06	8.32	13.42	24.39	28.23	34.70	36.56	40.72	42.69	51.12	28.16	357.06	18.90	24
27.5	7.25	10.65	15.28	18.71	21.51	26.02	29.36	39.13	41.73	47.71	52.83	28.21	260.76	16.15	39
30.0	5.53	15.26	19.99	23.47	29.86	32.65	35.68	45.25	47.74	52.87	58.73	33.39	311.61	17.65	25
32.5	13.68	30.04	33.69	34.69	40.02	46.53	50.26	58.91	60.47	62.81	73.51	45.66	414.83	20.37	42
35.0	6.98	15.13	25.12	34.22	37.75	44.85	50.92	54.32	57.28	65.33	72.37	42.33	470.58	21.69	18
37.5	19.58	33.33	35.62	38.78	39.88	44.19	50.30	59.38	61.80	66.91	69.73	47.12	371.48	19.27	29
40.0	7.74	38.07	43.07	48.32	50.67	55.71	59.51	66.81	67.12	68.30	75.47	52.08	493.12	22.21	32
42.5	25.09	38.65	48.39	49.35	54.59	59.04	69.87	72.58	73.98	78.30	88.27	59.20	465.26	21.57	27
45.0	15.65	40.00	43.73	50.46	63.95	75.49	76.80	78.70	80.00	80.37	82.95	61.81	604.73	24.59	39
47.5	19.94	39.58	48.95	55.76	59.32	63.86	70.33	78.74	79.48	83.28	90.32	61.09	576.93	24.02	23
50.0	55.54	57.53	61.48	63.19	70.61	74.37	80.45	85.57	86.27	86.50	90.53	73.62	206.49	14.37	34
52.5	45.42	58.18	60.98	64.79	67.62	72.97	79.42	84.05	84.55	87.02	91.66	70.87	392.43	19.81	23
55.0	41.01	54.95	56.28	59.80	67.07	72.18	80.25	87.95	88.21	90.32	92.22	69.51	464.35	21.55	42
57.5	42.06	62.64	66.45	67.21	72.96	79.03	83.55	86.95	89.53	90.58	94.79	74.03	415.54	20.38	25
60.0	30.98	67.36	73.41	74.55	78.18	84.78	86.64	87.99	89.25	89.83	93.55	76.08	458.51	21.41	33
62.5	56.85	67.49	68.63	72.10	73.38	79.18	88.49	89.71	90.13	91.79	95.71	77.75	298.46	17.28	34
65.0	57.88	66.41	68.83	70.15	74.32	76.50	83.47	88.12	90.77	93.09	96.50	77.68	206.98	14.39	17
67.5	70.78	75.90	78.20	78.75	84.14	89.08	92.08	93.64	93.75	95.03	98.18	85.49	139.11	11.79	43
70.0	70.67	76.31	80.62	84.68	90.02	91.69	93.66	94.33	95.03	96.61	98.16	88.08	94.36	9.71	26
72.5	76.65	81.60	83.10	86.21	89.25	91.67	92.40	93.56	94.31	94.98	96.00	88.69	56.92	7.54	27
75.0	80.75	83.38	85.79	88.43	88.70	91.23	94.91	96.11	97.21	97.56	98.74	90.57	53.16	7.29	20
77.5	78.31	84.18	84.63	85.17	91.63	93.13	95.70	97.35	97.65	98.42	98.90	91.26	53.66	7.33	25
80.0	87.55	90.26	90.67	90.80	92.36	94.66	95.85	96.80	97.10	98.71	100.00	93.20	48.16	6.94	28
82.5	88.10	90.69	91.61	92.34	93.09	95.35	96.74	97.23	98.20	98.97	100.00	94.33	22.91	4.79	33
85.0	96.63	97.34	97.81	97.89	98.08	98.26	98.46	98.82	98.89	99.13	99.62	98.25	.92	.96	17
87.5	92.61	94.50	94.81	95.13	97.28	98.23	98.43	98.60	98.78	98.89	99.38	96.42	16.11	4.01	20
90.0	91.99	94.73	95.80	96.31	97.06	98.27	98.72	98.86	99.07	99.13	99.89	97.09	7.23	2.69	32
92.5	95.33	96.77	97.13	97.53	98.52	98.73	99.24	99.49	99.62	99.93	100.00	98.05	6.12	2.47	20
95.0	94.93	96.13	97.40	98.46	99.10	99.27	99.30	99.41	99.45	99.54	99.81	98.41	2.92	1.71	14
97.5	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.98	.01	.10	96

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Second-quartile storms; storm duration 6 to 12 hours															
2.5	0	0	0	0	0	0	0	0	0.73	1.57	5.85	1.96	29.65	5.45	69
5.0	.80	1.72	1.80	2.00	3.75	4.58	8.37	11.63	17.15	22.18	30.33	10.63	134.98	11.62	33
7.5	.97	1.87	2.43	3.57	5.35	8.69	13.01	25.92	33.58	34.95	41.19	16.50	295.97	17.20	28
10.0	1.51	3.34	4.86	6.23	9.10	10.84	13.53	29.26	33.95	34.15	40.48	17.29	254.18	15.94	28
12.5	2.00	5.72	7.64	9.37	12.12	14.74	17.00	34.10	34.32	39.81	61.71	22.48	405.46	20.14	33
15.0	3.15	4.71	7.41	9.40	16.37	17.42	22.41	34.13	34.35	34.51	40.69	21.85	265.90	16.31	27
17.5	4.45	7.83	8.22	8.85	12.45	18.25	20.37	34.06	34.51	34.96	56.83	23.36	388.73	19.72	34
20.0	4.34	9.65	13.38	14.54	17.99	21.67	24.49	31.23	34.13	34.28	35.67	22.76	233.41	15.28	27
22.5	6.37	9.98	10.78	12.36	16.80	20.00	26.84	32.20	34.51	40.62	73.84	27.62	501.38	22.39	37
25.0	6.11	11.82	18.79	19.69	23.77	29.15	32.71	37.93	40.62	40.99	74.15	31.48	421.28	20.53	35
27.5	8.31	12.62	15.23	20.38	25.50	31.03	33.56	38.53	40.95	46.47	68.01	32.37	441.68	21.02	37
30.0	11.33	13.99	15.72	20.14	23.89	32.57	33.95	44.07	56.97	70.43	80.41	37.35	599.92	24.49	40
32.5	12.20	17.84	21.17	24.39	34.68	36.72	39.25	48.19	61.56	67.35	84.97	41.46	640.97	25.32	48
35.0	12.11	18.61	24.33	25.48	29.40	37.86	41.35	45.68	61.05	66.29	81.53	41.43	634.51	25.19	43
37.5	17.80	20.40	24.75	25.94	34.39	41.68	44.61	51.97	55.08	63.00	81.59	43.15	504.52	22.46	42
40.0	27.29	31.36	31.81	33.30	43.41	47.18	50.24	61.33	66.56	67.99	84.76	50.37	410.36	20.26	38
42.5	22.23	32.98	40.27	45.58	51.85	53.71	58.04	64.04	68.02	71.38	76.38	53.20	433.08	20.81	36
45.0	32.75	41.43	45.57	49.80	55.12	57.88	60.96	73.35	75.94	78.07	85.22	58.60	392.55	19.81	33
47.5	23.08	40.73	42.60	50.01	60.08	62.29	66.10	75.06	78.00	79.98	87.45	59.85	479.32	21.89	37
50.0	34.11	49.41	53.87	63.49	67.90	72.70	75.62	78.89	80.00	82.48	88.94	67.29	390.88	19.77	32
52.5	28.72	53.24	54.95	56.65	61.74	65.87	67.42	75.02	77.46	80.35	83.30	62.92	386.45	19.66	36
55.0	41.15	56.05	59.89	65.04	68.98	72.49	75.38	82.44	83.36	85.14	89.70	70.07	295.23	17.18	34
57.5	44.54	56.06	62.97	68.57	71.15	75.73	79.17	83.35	83.68	85.53	91.74	71.88	320.18	17.89	32
60.0	57.85	61.36	62.64	63.87	71.50	75.32	82.75	85.24	86.36	88.52	90.28	73.40	282.37	16.80	32
62.5	63.96	66.84	72.00	73.56	79.82	86.03	87.18	88.15	89.77	90.33	91.12	80.75	119.36	10.93	28
65.0	66.63	73.48	74.36	76.86	80.54	84.97	88.28	91.61	91.77	93.56	97.82	82.03	197.26	14.05	38
67.5	65.64	77.06	79.53	80.84	87.83	88.82	90.46	92.76	93.93	94.64	97.08	85.07	137.62	11.73	30
70.0	67.64	77.90	79.82	81.39	83.75	88.90	90.25	93.76	94.51	95.66	98.05	86.17	102.75	10.14	28
72.5	74.20	82.67	82.96	84.08	88.18	89.95	91.29	94.11	95.85	96.42	98.55	87.28	155.13	12.46	31
75.0	67.85	80.81	83.53	84.82	90.93	91.52	92.64	95.25	96.61	97.05	97.96	87.69	136.80	11.70	22
77.5	70.88	85.03	85.37	85.54	92.12	93.21	93.65	94.74	96.08	97.08	98.71	89.06	113.14	10.64	29
80.0	74.79	81.51	85.14	86.69	90.42	93.91	95.55	96.30	97.37	98.44	99.16	90.57	68.23	8.26	22
82.5	80.88	86.82	87.84	88.56	91.05	94.93	96.00	96.92	97.68	97.94	99.50	92.30	40.65	6.38	22
85.0	86.31	89.62	90.50	90.97	95.54	96.77	98.11	98.39	98.65	98.72	99.17	94.11	42.12	6.49	24
87.5	89.31	90.02	91.21	92.25	95.45	97.36	98.43	98.68	98.79	99.18	100.00	95.36	19.01	4.36	26
90.0	89.26	92.51	93.35	93.54	95.43	97.37	97.95	98.93	99.05	99.15	99.79	95.52	21.41	4.63	26
92.5	90.45	94.05	94.91	96.20	97.70	98.93	99.13	99.75	100.00	100.00	100.00	97.03	13.69	3.70	25
95.0	94.25	95.73	96.11	96.96	98.74	98.99	99.19	99.30	99.76	100.00	100.00	98.04	4.39	2.10	22
97.5	99.68	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.68	1.34	1.16	63

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Second-quartile storms; storm duration 12 to 24 hours															
2.5	0	0	0	0	0	0.25	1.24	2.55	3.80	4.64	9.28	2.83	24.50	4.95	228
5.0	1.30	2.57	3.04	4.46	6.52	9.52	12.42	18.84	22.14	24.74	32.07	13.29	132.74	11.52	117
7.5	3.67	6.36	8.39	10.20	12.90	16.48	25.95	34.00	37.78	41.20	46.42	22.32	265.93	16.31	112
10.0	7.34	9.14	10.60	12.07	17.13	22.09	31.61	42.38	45.95	49.43	52.38	27.47	332.93	18.25	113
12.5	8.10	11.82	13.51	15.20	18.36	27.28	34.91	37.05	41.87	45.64	54.33	28.48	316.48	17.79	98
15.0	10.15	11.89	15.17	17.47	21.35	30.75	37.06	39.89	43.19	46.41	59.85	31.52	380.99	19.52	91
17.5	11.90	17.48	21.71	22.67	29.99	34.59	39.03	43.68	47.39	51.23	56.27	35.17	349.75	18.70	102
20.0	4.16	11.36	14.18	18.66	23.93	32.01	40.64	47.31	51.66	53.50	63.62	33.79	520.10	22.81	95
22.5	6.48	17.78	21.33	22.97	26.84	36.28	43.57	51.90	52.97	55.13	68.61	37.26	491.84	22.18	83
25.0	13.95	20.97	24.43	29.89	35.52	39.47	42.38	49.70	54.39	58.85	68.93	40.58	440.64	20.99	81
27.5	4.41	13.51	20.99	24.49	33.82	42.68	48.09	53.26	54.33	57.56	79.80	40.52	623.68	24.97	84
30.0	11.84	22.76	25.50	31.75	40.20	44.48	51.27	54.09	57.43	58.55	80.88	44.11	539.05	23.22	87
32.5	15.57	29.07	31.66	38.93	44.18	50.64	54.60	58.64	59.85	65.39	84.97	49.31	495.43	22.26	80
35.0	16.75	29.45	34.58	40.87	50.46	54.39	59.18	64.61	67.84	70.67	88.53	52.75	544.48	23.33	85
37.5	21.62	30.14	36.08	44.29	52.35	55.91	61.18	73.51	76.84	80.05	89.74	55.76	634.25	25.18	93
40.0	17.51	27.92	34.83	39.12	50.68	58.18	63.88	70.19	74.29	80.08	90.49	54.80	645.30	25.40	113
42.5	25.68	37.42	41.20	46.26	54.39	61.61	68.41	72.95	78.47	83.32	92.64	59.92	556.55	23.59	105
45.0	33.33	43.54	46.37	49.70	57.56	64.90	71.61	76.87	79.99	86.58	93.79	63.34	485.58	22.04	105
47.5	39.42	50.21	54.08	58.63	63.11	66.99	72.71	79.30	81.98	86.75	95.36	67.42	401.01	20.03	97
50.0	45.21	52.95	57.93	59.51	68.86	71.04	73.46	79.78	82.35	84.44	95.04	69.73	322.51	17.96	103
52.5	52.70	59.70	63.57	67.57	71.60	75.58	79.98	84.39	85.38	87.50	95.90	73.48	333.76	18.27	98
55.0	51.51	60.02	64.47	68.35	72.09	79.89	83.28	87.12	90.02	91.74	94.87	74.96	355.80	18.86	95
57.5	55.40	60.54	62.25	65.02	71.61	74.03	83.29	88.36	90.66	91.98	95.76	74.38	356.50	18.88	89
60.0	65.03	69.43	72.07	75.19	80.87	86.17	89.47	92.34	93.39	94.62	98.44	82.19	224.52	14.98	82
62.5	59.14	65.60	69.87	71.61	77.30	85.05	89.82	94.59	94.92	95.37	98.62	79.29	386.92	19.67	79
65.0	61.58	71.91	73.29	74.26	80.93	86.13	88.97	93.84	95.72	97.36	99.02	82.08	269.60	16.42	77
67.5	62.05	74.04	75.93	77.66	82.05	87.50	91.33	94.59	95.66	96.27	99.18	83.44	234.70	15.32	69
70.0	61.54	71.73	74.29	77.88	82.22	87.53	93.20	94.73	95.71	97.04	99.47	83.49	246.15	15.69	62
72.5	62.78	71.56	72.72	76.03	81.11	85.90	89.72	94.48	95.39	96.33	97.60	82.05	262.07	16.19	66
75.0	71.48	77.99	81.02	82.24	84.53	88.93	93.49	96.29	97.47	98.00	99.29	85.91	216.81	14.72	65
77.5	69.79	80.87	82.99	83.78	86.54	90.09	94.19	96.58	97.11	97.86	98.75	86.93	178.13	13.35	64
80.0	70.53	76.19	79.63	84.64	87.45	91.78	93.51	96.38	97.22	97.96	98.74	87.91	117.92	10.86	68
82.5	74.12	78.08	78.90	82.95	85.78	92.83	95.73	97.33	98.42	98.64	99.53	88.45	128.41	11.33	61
85.0	80.91	83.02	84.10	85.44	88.16	93.59	95.55	97.28	98.04	98.67	99.49	90.62	72.61	8.52	70
87.5	85.45	87.95	88.42	88.66	90.34	94.47	97.18	98.15	98.75	98.98	99.73	92.78	42.31	6.50	59
90.0	90.48	91.53	91.81	93.54	96.59	97.60	98.63	99.16	99.27	99.37	99.60	95.50	26.58	5.16	69
92.5	88.98	92.81	93.28	94.29	96.94	98.32	98.67	99.10	99.11	99.35	99.62	95.94	21.56	4.64	62
95.0	91.74	95.35	95.72	97.05	98.34	98.99	99.32	99.50	99.66	99.70	100.00	96.49	42.54	6.52	66
97.5	97.62	99.49	99.70	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.89	17.52	4.19	159

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Second-quartile storms; storm duration 24 to 72 hours															
2.5	0	0	0	0	1.36	2.98	5.22	7.79	10.36	14.03	23.02	7.60	125.57	11.21	286
5.0	2.45	5.92	7.22	9.83	12.56	19.40	22.99	29.99	37.33	41.37	47.95	23.34	407.61	20.19	120
7.5	4.12	9.35	11.77	13.92	19.28	23.57	34.78	43.48	48.09	50.22	59.46	29.73	462.71	21.51	119
10.0	2.32	7.71	11.87	15.91	23.21	34.31	54.87	62.11	65.10	67.76	80.54	39.53	856.19	29.26	116
12.5	4.78	8.26	10.05	14.33	21.47	41.22	67.33	73.10	76.46	80.74	89.76	45.11	1,132.90	33.66	104
15.0	3.15	8.30	10.59	17.03	23.53	49.36	68.77	74.78	81.17	82.43	95.78	47.04	1,188.45	34.47	99
17.5	2.59	8.43	11.22	15.48	23.97	30.37	67.02	76.90	79.57	85.20	97.52	45.91	1,283.24	35.82	103
20.0	3.66	8.60	13.38	19.91	25.03	36.33	60.51	77.62	77.94	82.00	97.52	45.14	1,161.42	34.08	91
22.5	3.34	7.60	9.09	13.36	24.51	39.17	46.03	61.55	76.81	82.17	97.52	41.93	1,108.80	33.30	96
25.0	4.83	9.09	16.63	21.54	26.27	30.30	46.73	59.46	69.37	78.60	93.58	42.27	981.92	31.34	106
27.5	5.97	13.18	18.70	26.05	33.20	40.20	51.03	64.52	74.11	79.52	93.56	46.25	938.68	30.64	119
30.0	8.26	19.09	28.79	31.24	34.04	42.76	50.84	59.18	62.02	80.16	91.56	46.71	813.89	28.53	124
32.5	11.43	16.87	22.12	30.16	37.24	41.87	51.12	61.69	64.31	73.68	96.87	46.97	814.93	28.55	125
35.0	10.62	19.33	29.64	37.41	43.43	48.25	54.62	59.97	63.43	68.39	96.52	49.26	752.72	27.44	133
37.5	14.22	27.49	37.79	43.71	50.53	56.32	61.83	64.65	68.60	70.25	83.22	52.85	613.88	24.78	122
40.0	16.88	20.04	25.18	34.57	49.34	58.61	63.33	69.28	72.99	74.64	82.70	52.25	661.63	25.72	138
42.5	23.73	29.59	32.37	38.05	44.40	59.27	66.67	74.73	76.21	78.74	88.45	56.10	604.34	24.58	129
45.0	28.91	43.73	44.49	46.36	53.23	59.78	66.47	74.21	78.09	82.11	98.09	61.12	495.15	22.25	124
47.5	43.55	50.40	53.07	55.12	60.28	63.18	71.64	77.45	82.71	84.44	96.50	65.40	429.48	20.72	108
50.0	43.09	55.49	57.42	60.41	63.61	71.82	78.29	84.70	86.39	88.25	96.73	70.13	420.15	20.50	107
52.5	46.33	59.65	61.15	62.39	63.15	66.67	76.10	78.64	84.65	86.58	98.19	70.29	307.53	17.54	97
55.0	51.20	57.84	61.06	63.13	64.65	70.51	79.04	83.68	87.55	89.59	98.54	72.73	292.22	17.09	102
57.5	59.53	62.93	63.62	66.19	71.00	74.94	81.39	85.23	89.19	90.48	97.93	76.85	181.50	13.47	99
60.0	46.55	61.91	63.83	70.66	76.30	83.39	86.03	89.54	90.94	93.17	98.01	77.93	277.95	16.67	96
62.5	57.02	62.93	64.92	74.63	81.87	86.74	91.86	94.33	94.90	95.55	98.19	81.80	239.19	15.47	100
65.0	63.59	74.74	77.32	80.28	86.59	90.15	95.75	96.60	97.34	97.80	98.35	86.00	179.87	13.41	72
67.5	62.99	69.53	69.69	73.38	84.50	88.22	93.43	96.55	97.01	98.23	98.51	84.04	218.96	14.80	68
70.0	62.94	74.03	78.12	80.87	88.61	93.35	94.92	96.94	98.23	98.48	99.05	85.64	265.21	16.29	60
72.5	61.50	76.94	79.54	81.13	87.42	92.35	93.98	96.09	96.84	96.94	98.36	85.82	216.46	14.71	60
75.0	61.02	78.90	81.53	86.46	91.50	93.65	95.50	96.94	97.25	97.75	99.11	87.54	191.74	13.85	58
77.5	74.65	86.20	89.03	91.23	93.28	94.96	96.37	96.94	97.22	97.67	98.87	91.43	82.81	9.10	60
80.0	68.10	76.92	78.96	85.41	88.50	91.34	94.41	97.15	97.21	98.25	99.10	88.29	123.18	11.10	52
82.5	64.14	72.88	76.78	79.03	91.06	94.26	95.45	97.31	97.49	98.21	99.02	87.32	169.93	13.04	61
85.0	71.12	76.56	77.52	80.91	88.37	92.75	95.75	97.43	97.84	98.25	99.13	88.19	123.09	11.09	65
87.5	67.15	77.98	85.60	87.81	92.75	96.21	97.49	98.33	98.68	99.25	99.48	89.19	238.87	15.46	69
90.0	64.51	71.93	74.92	78.10	82.40	86.98	90.94	96.91	98.22	98.63	99.14	82.40	379.11	19.47	72
92.5	71.91	82.88	85.33	88.04	90.01	94.22	96.58	98.37	98.70	98.80	99.32	89.62	146.31	12.10	73
95.0	86.53	91.07	92.72	93.71	95.93	97.88	98.87	99.32	99.39	99.58	100.00	94.75	52.84	7.27	88
97.5	91.33	95.54	96.66	97.74	98.88	99.88	100.00	100.00	100.00	100.00	100.00	97.57	16.29	4.04	210

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Second-quartile storms; storm duration 0 to 72 hours															
2.5	0	0	0	0	0	0	1.48	3.65	4.75	6.84	14.75	4.38	72.44	8.51	680
5.0	1.51	2.63	3.63	5.02	7.77	10.56	16.75	22.38	24.30	29.02	39.56	16.74	279.39	16.72	284
7.5	2.81	5.24	7.12	9.31	12.94	17.73	25.04	35.53	39.32	43.51	50.65	23.87	377.11	19.42	278
10.0	3.28	7.20	8.31	9.71	14.10	21.10	29.38	43.13	50.29	53.36	65.00	29.07	600.77	24.51	294
12.5	3.46	8.70	10.52	12.11	16.13	24.29	34.30	43.53	54.37	63.52	77.42	33.19	761.51	27.60	254
15.0	4.93	9.67	11.70	15.43	19.54	30.38	37.08	46.54	55.04	68.84	81.97	35.89	807.22	28.41	232
17.5	4.75	11.17	12.70	16.48	22.06	27.43	36.85	47.28	54.77	64.74	80.28	35.98	797.56	28.24	265
20.0	4.31	11.01	13.73	17.08	22.31	25.96	34.51	43.72	51.66	57.61	80.50	35.08	754.46	27.47	245
22.5	4.29	9.01	12.90	16.44	22.59	27.91	38.10	46.65	52.40	60.46	82.05	35.60	761.06	27.59	246
25.0	6.45	15.91	19.78	23.17	28.59	34.62	41.09	47.44	55.49	60.74	81.74	38.80	687.88	26.23	246
27.5	5.97	13.21	18.70	22.48	29.93	35.62	44.85	52.41	57.56	64.49	81.25	40.16	727.02	26.96	279
30.0	9.77	19.04	23.60	29.66	33.68	40.13	49.72	54.60	57.66	62.54	84.28	43.32	670.19	25.89	276
32.5	12.52	22.35	27.45	32.75	37.96	43.12	51.37	58.98	61.83	66.67	87.73	46.52	649.48	25.48	295
35.0	12.50	22.71	28.41	34.52	42.42	48.25	54.72	60.64	64.89	68.28	90.69	48.67	668.76	25.86	279
37.5	15.79	26.97	33.83	39.39	47.66	53.32	59.55	64.42	69.26	73.11	83.94	51.79	598.66	24.47	286
40.0	17.75	26.47	31.96	38.03	48.55	55.77	62.91	67.24	71.45	74.81	85.86	52.91	611.61	24.73	321
42.5	25.34	31.63	37.90	43.15	52.02	59.52	66.45	71.76	75.10	78.81	90.04	57.38	559.45	23.65	297
45.0	32.19	43.07	45.21	48.64	56.30	62.32	71.13	76.51	78.69	81.04	92.16	61.71	496.89	22.29	301
47.5	38.67	48.97	52.74	55.52	61.33	64.76	71.46	78.12	81.14	84.30	93.54	64.99	446.05	21.12	265
50.0	43.73	55.59	57.94	61.68	67.70	71.80	76.43	82.33	84.37	86.82	94.53	70.08	356.50	18.88	276
52.5	48.39	57.63	61.04	62.83	66.27	71.60	77.35	81.46	84.33	86.39	94.92	70.53	348.12	18.66	254
55.0	49.44	58.07	60.74	63.41	68.58	73.83	80.83	86.45	87.98	89.87	93.96	72.68	345.40	18.59	273
57.5	57.80	61.80	63.61	67.11	71.62	75.21	81.29	86.19	88.67	90.58	95.65	75.02	289.96	17.03	245
60.0	59.47	65.41	68.35	72.46	76.62	83.50	86.70	89.52	91.04	92.80	96.97	78.52	293.95	17.15	243
62.5	58.96	65.01	69.78	72.96	78.51	86.00	89.21	93.01	94.18	94.98	97.72	80.28	284.26	16.86	241
65.0	63.26	71.96	74.15	76.76	81.01	86.68	90.14	94.08	96.12	97.03	98.48	83.09	225.25	15.01	204
67.5	63.61	72.24	76.10	78.33	84.10	88.82	91.80	94.62	95.81	96.40	98.51	84.29	196.80	14.03	210
70.0	64.10	74.23	78.12	80.75	85.85	90.33	93.67	95.31	96.72	97.26	98.86	85.33	209.86	14.49	176
72.5	68.09	76.24	79.60	81.55	85.85	89.62	92.40	94.85	95.92	96.32	98.00	85.13	205.28	14.33	184
75.0	69.04	80.02	82.37	83.98	88.67	91.67	93.98	96.29	97.16	97.61	98.82	87.28	179.59	13.40	165
77.5	74.86	83.43	84.88	86.02	90.78	93.26	95.05	96.63	97.12	97.75	98.83	89.40	122.02	11.05	178
80.0	73.90	79.44	84.64	86.83	90.23	92.35	94.53	96.86	97.18	98.25	99.08	89.24	105.41	10.27	170
82.5	73.47	78.90	84.34	86.11	91.55	94.26	95.90	97.31	97.71	98.42	99.25	89.64	119.45	10.93	177
85.0	77.02	82.82	84.50	87.35	91.87	95.35	97.07	98.05	98.26	98.63	99.28	90.93	89.54	9.46	176
87.5	78.60	87.95	88.87	89.81	93.71	96.36	97.67	98.47	98.76	98.98	99.60	92.16	121.00	11.00	174
90.0	76.40	86.18	90.48	90.95	93.41	96.59	97.98	98.67	98.96	99.15	99.60	91.02	192.79	13.88	199
92.5	84.47	89.34	91.11	93.26	95.68	97.68	98.59	98.95	99.11	99.32	99.81	93.76	81.48	9.03	180
95.0	89.38	94.18	94.81	95.78	97.60	98.69	99.21	99.36	99.51	99.64	100.00	96.00	41.69	6.46	190
97.5	95.53	98.47	99.48	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.66	12.85	3.58	528

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Third-quartile storms; storm duration 0 to 6 hours															
2.5	0	0	0	0	0	0	0	0	0	0	3.33	0.57	2.56	1.60	55
5.0	--	1.75	2.39	3.19	4.29	5.52	9.49	15.79	18.22	20.74	--	9.60	71.69	8.47	8
7.5	1.40	2.20	2.74	2.85	6.01	8.25	10.83	11.21	12.73	17.88	28.63	10.16	76.15	8.73	15
10.0	1.41	4.70	4.86	5.18	8.70	14.78	15.00	15.87	16.73	16.73	32.92	13.25	93.83	9.69	14
12.5	1.11	2.61	3.07	5.27	13.79	14.55	16.67	16.67	19.58	24.62	35.61	14.87	120.06	10.96	13
15.0	--	3.67	5.48	9.82	17.29	21.12	30.70	33.10	33.10	34.25	--	20.87	168.75	12.99	7
17.5	6.34	10.51	11.74	13.47	16.67	16.67	19.06	24.13	26.29	28.62	35.61	19.13	82.81	9.10	13
20.0	2.22	7.31	9.33	11.82	13.75	21.67	21.67	28.92	31.81	31.97	33.10	19.30	116.87	10.81	14
22.5	2.31	2.63	3.77	8.83	14.96	18.25	18.60	22.50	22.50	26.25	36.87	16.87	129.44	11.38	20
25.0	4.55	6.12	7.05	8.87	10.92	14.37	19.55	28.21	30.27	32.19	39.12	18.39	147.89	12.16	16
27.5	1.42	8.10	11.52	15.39	23.82	24.17	25.58	29.39	31.46	33.10	35.61	21.76	127.30	11.28	13
30.0	3.86	11.91	15.04	17.08	18.96	25.83	25.83	31.64	35.97	40.15	52.86	25.31	223.08	14.94	13
32.5	7.36	13.04	13.80	15.18	17.46	20.50	28.33	30.88	32.81	33.10	37.95	23.13	138.77	11.78	20
35.0	--	3.47	3.58	4.95	8.72	15.58	21.30	28.95	33.10	36.01	--	17.95	186.00	13.64	7
37.5	21.34	28.33	28.33	28.33	28.91	34.05	37.29	39.59	42.15	44.66	55.60	35.50	125.86	11.22	14
40.0	3.87	5.38	13.94	23.23	27.27	30.00	30.00	32.25	32.95	33.87	61.33	27.75	329.93	18.16	13
42.5	2.06	16.80	23.51	24.10	26.36	33.54	34.17	37.06	41.32	45.57	55.10	31.31	313.39	17.70	17
45.0	0	19.92	19.92	19.92	21.26	33.81	34.43	39.73	61.79	83.84	85.03	37.55	747.04	27.33	9
47.5	6.36	10.21	15.89	16.18	30.91	35.59	36.67	37.47	40.68	45.32	61.53	31.49	307.49	17.54	15
50.0	10.31	27.78	28.64	30.69	35.40	41.74	43.81	44.17	47.89	54.29	71.88	41.08	449.13	21.19	29
52.5	19.35	21.72	25.22	28.62	30.26	38.18	45.71	50.53	54.62	56.67	60.96	39.71	282.53	16.81	17
55.0	37.42	39.31	43.22	46.25	52.23	56.86	58.36	61.89	70.71	87.70	94.63	59.40	372.12	19.29	10
57.5	33.18	40.49	40.95	41.25	42.70	49.35	58.04	68.21	78.54	81.67	82.88	56.11	383.25	19.58	20
60.0	37.64	40.84	41.90	46.14	53.11	56.57	61.63	75.36	83.64	84.99	85.00	59.24	445.92	21.12	20
62.5	7.16	47.03	52.83	56.95	61.87	66.19	72.26	81.50	85.83	85.83	87.73	62.41	612.92	24.76	17
65.0	5.95	29.10	43.20	53.72	60.94	62.22	68.40	70.63	72.57	74.64	81.50	55.88	586.07	24.21	13
67.5	35.96	52.89	54.69	58.38	68.18	69.12	73.47	77.19	80.29	83.47	85.83	66.42	347.11	18.63	24
70.0	20.58	63.67	67.01	68.48	75.37	78.40	80.90	85.43	85.83	85.83	93.28	71.45	500.86	22.38	21
72.5	47.10	56.71	58.89	62.62	71.17	72.13	83.67	85.83	85.83	85.83	87.38	71.97	208.07	14.42	14
75.0	50.55	67.45	72.25	73.35	75.62	78.53	82.41	85.55	85.99	86.61	90.85	76.64	180.35	13.43	20
77.5	69.71	81.01	81.79	82.28	83.65	85.83	87.28	90.68	90.99	91.37	93.34	84.79	70.47	8.39	18
80.0	71.75	78.36	79.86	80.88	84.98	85.83	86.41	88.08	89.04	90.15	93.21	83.93	55.21	7.43	18
82.5	70.91	85.26	85.57	85.75	85.83	86.86	88.17	88.74	90.40	92.93	97.27	85.78	121.26	11.01	18
85.0	76.38	82.10	83.46	83.62	90.29	92.86	94.50	95.59	97.97	98.15	98.68	90.16	58.51	7.65	15
87.5	84.51	85.83	85.83	86.51	90.05	91.82	95.09	96.17	96.57	96.86	98.19	91.71	25.23	5.02	13
90.0	85.30	89.93	91.06	91.93	92.50	93.70	96.56	97.00	97.15	97.21	99.28	93.69	18.66	4.32	17
92.5	90.11	93.30	93.57	95.06	96.48	97.70	98.22	98.33	98.41	98.65	98.91	95.84	16.53	4.07	18
95.0	--	97.20	97.87	97.92	98.05	98.24	98.50	98.81	98.99	99.28	--	98.09	2.12	1.45	8
97.5	99.17	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.81	.39	.63	54

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Third-quartile storms; storm duration 6 to 12 hours															
2.5	0	0	0	0	0	0	0.40	1.66	2.11	2.92	5.83	1.95	17.72	4.21	118
5.0	1.28	2.36	2.40	2.53	3.14	4.42	5.72	8.96	9.16	10.32	14.79	6.79	44.47	6.67	48
7.5	2.16	3.24	3.73	3.98	4.72	6.99	8.79	9.16	11.14	12.23	15.51	7.50	23.38	4.84	36
10.0	2.06	3.72	4.81	5.73	7.10	8.80	10.88	17.04	19.07	20.81	29.10	12.83	131.02	11.45	42
12.5	2.33	6.17	6.67	9.17	9.67	10.55	11.52	15.57	16.34	18.76	25.06	14.79	257.24	16.04	36
15.0	1.67	3.62	5.03	5.68	11.43	12.83	16.34	18.84	23.57	26.27	37.00	16.69	233.74	15.29	45
17.5	.99	6.17	6.30	6.97	9.83	12.53	13.41	17.27	19.42	21.59	40.42	15.85	274.17	16.56	31
20.0	6.22	11.70	13.57	14.17	14.66	16.34	19.76	24.22	31.34	33.73	44.59	22.42	261.20	16.16	41
22.5	1.91	4.36	6.17	10.62	14.17	14.31	14.77	16.34	18.03	24.50	34.20	16.74	241.02	15.52	40
25.0	2.93	7.82	9.91	10.89	14.17	16.61	23.64	31.12	33.08	37.99	44.84	22.86	357.07	18.90	34
27.5	8.42	11.18	13.48	14.23	14.75	19.67	22.29	31.73	36.03	44.84	49.30	25.32	330.40	18.18	34
30.0	2.39	6.17	12.28	13.60	20.66	27.16	32.14	34.29	40.42	44.84	49.71	26.99	376.43	19.40	34
32.5	1.84	8.52	11.28	11.77	15.87	18.94	26.30	34.33	38.48	43.89	44.84	24.62	364.72	19.10	41
35.0	5.39	8.35	11.85	12.24	15.24	21.31	33.57	37.89	42.57	44.75	51.42	25.71	282.23	16.80	25
37.5	4.60	7.69	11.43	14.17	19.42	21.09	30.22	33.82	42.81	44.84	54.58	29.26	562.71	23.72	29
40.0	6.23	10.74	12.96	14.21	17.58	21.05	28.00	35.89	39.08	44.84	53.67	27.02	378.17	19.45	30
42.5	5.29	12.73	14.23	18.26	21.97	28.00	29.28	38.34	39.92	42.04	53.30	28.84	342.01	18.49	33
45.0	3.50	6.39	7.33	10.12	13.62	17.11	20.40	29.18	32.18	38.47	41.99	20.73	230.05	15.17	36
47.5	3.22	9.66	11.18	14.76	20.38	22.79	24.57	30.67	33.18	42.18	54.58	26.82	465.76	21.58	43
50.0	9.39	13.53	14.26	14.98	20.64	25.54	30.09	33.65	34.82	40.00	48.35	27.57	323.02	17.97	34
52.5	6.08	14.46	19.90	22.59	26.59	29.31	34.16	41.33	48.18	52.94	69.18	34.46	527.12	22.96	50
55.0	10.64	25.93	28.34	30.20	32.22	35.09	41.02	48.84	50.02	53.72	67.36	39.08	406.80	20.17	46
57.5	6.62	18.29	24.23	30.81	34.66	38.11	41.42	49.90	52.40	59.31	71.89	39.33	509.05	22.56	48
60.0	13.42	17.30	24.55	28.75	35.70	41.93	45.99	53.80	55.06	60.55	76.09	42.29	535.55	23.14	56
62.5	20.47	32.22	34.69	35.71	42.96	48.31	51.68	59.55	64.48	71.84	85.55	50.40	513.14	22.65	59
65.0	16.80	30.76	34.18	38.48	47.60	58.82	62.77	65.42	73.80	76.09	81.03	53.35	541.31	23.27	53
67.5	19.72	34.28	40.08	44.52	48.12	57.90	65.12	69.11	74.32	78.94	88.09	56.07	554.17	23.54	67
70.0	21.67	40.72	42.80	47.92	57.90	61.40	65.21	75.23	79.85	81.89	87.82	59.44	510.25	22.59	63
72.5	19.84	44.21	50.33	56.90	61.99	66.93	72.03	81.72	83.02	86.42	90.83	63.63	561.84	23.70	79
75.0	22.95	47.66	53.19	64.39	69.84	72.89	80.89	85.16	86.33	87.38	91.69	67.95	564.67	23.76	67
77.5	44.21	60.12	63.84	67.69	74.90	79.06	84.57	89.52	90.58	92.21	94.01	74.95	358.26	18.93	72
80.0	58.38	70.88	72.62	75.85	82.07	85.76	86.78	89.12	90.45	92.48	96.77	80.67	224.30	14.98	76
82.5	61.66	78.60	80.33	82.29	87.15	89.09	90.41	92.24	93.24	94.34	96.19	84.59	166.94	12.92	70
85.0	65.60	79.37	85.00	86.54	90.15	92.24	92.69	93.69	94.48	95.27	97.21	86.91	158.97	12.61	68
87.5	78.73	85.55	88.73	89.97	92.96	93.59	94.99	95.24	95.51	96.06	97.59	91.16	51.43	7.17	68
90.0	87.15	91.63	92.61	93.97	95.16	96.09	96.82	97.59	97.77	97.95	98.66	94.34	32.77	5.72	60
92.5	91.84	93.71	94.41	94.67	95.91	96.90	97.75	98.13	98.23	98.41	99.36	95.64	18.14	4.26	59
95.0	92.78	95.92	96.38	96.67	97.54	98.06	98.36	98.64	98.92	99.11	99.26	97.12	6.84	2.61	52
97.5	98.29	98.87	99.24	99.42	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.48	.91	.96	116

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Third-quartile storms; storm duration 12 to 24 hours															
2.5	0	0	0	0	0	0	0	0.98	1.83	2.54	5.48	1.60	12.14	3.48	170
5.0	.93	1.58	2.25	2.38	3.06	5.23	5.88	7.33	8.70	9.81	17.72	6.93	47.12	6.86	58
7.5	.87	2.66	4.13	4.42	5.37	5.80	7.64	9.26	10.87	12.78	25.98	9.23	77.94	8.83	71
10.0	3.25	4.99	5.43	6.05	7.10	7.84	9.15	12.09	14.72	19.33	29.63	12.64	154.35	12.42	70
12.5	3.98	6.76	7.33	8.81	10.10	13.00	15.93	19.76	22.19	25.29	36.57	17.65	237.14	15.40	54
15.0	3.03	7.06	8.24	9.66	11.36	13.92	18.23	19.64	21.62	29.74	38.36	18.08	237.18	15.40	55
17.5	1.72	6.32	7.33	9.12	11.14	13.81	16.72	19.88	20.76	24.60	37.58	16.49	156.25	12.50	51
20.0	2.16	8.70	8.83	9.84	13.17	16.86	20.85	21.94	24.92	28.40	41.41	20.59	320.61	17.91	49
22.5	6.72	11.14	12.71	14.29	16.67	19.88	21.15	26.32	28.84	29.97	39.06	22.63	301.06	17.35	49
25.0	1.44	4.03	7.16	9.75	15.61	19.88	22.66	25.69	29.39	31.83	43.96	22.30	409.78	20.24	57
27.5	2.25	8.18	13.26	14.54	19.69	23.44	31.48	35.81	38.09	45.35	59.46	28.79	514.01	22.67	48
30.0	4.81	9.36	14.76	16.61	20.46	24.69	28.34	38.47	44.71	46.81	74.05	30.28	515.93	22.71	45
32.5	5.83	9.73	13.03	14.74	19.87	22.88	30.09	37.03	48.53	52.15	74.25	31.08	613.62	24.77	54
35.0	6.75	12.44	13.86	16.80	22.23	24.92	31.54	42.51	47.63	54.68	74.56	32.72	557.52	23.61	41
37.5	6.40	11.33	14.00	20.04	22.60	26.92	32.12	35.77	43.13	54.97	75.75	32.63	560.85	23.68	53
40.0	3.56	9.01	14.21	17.87	27.54	36.96	41.13	50.18	55.78	59.44	72.56	36.31	643.10	25.36	52
42.5	3.43	10.39	13.17	16.08	26.37	32.42	40.43	52.34	59.25	62.25	71.83	36.22	631.27	25.13	45
45.0	4.61	13.41	16.46	19.12	25.82	31.48	41.03	53.55	63.87	71.14	77.90	38.79	730.39	27.03	47
47.5	6.67	11.65	15.60	18.04	21.24	27.87	38.57	52.75	62.04	67.28	81.68	37.89	808.69	28.44	50
50.0	7.83	15.24	19.25	20.77	28.40	35.90	39.51	47.13	54.40	59.41	68.60	37.19	532.78	23.08	58
52.5	9.39	17.39	20.18	22.80	29.08	35.14	41.80	47.92	48.99	51.46	77.33	37.83	559.18	23.65	74
55.0	13.67	19.12	21.31	25.30	38.73	43.36	50.00	57.28	59.69	70.00	81.41	45.14	618.73	24.87	84
57.5	21.27	28.57	31.99	38.06	45.13	50.50	58.98	61.68	65.79	73.55	84.89	51.26	533.42	23.10	84
60.0	18.55	25.22	29.89	34.79	44.91	53.47	63.32	68.03	70.90	75.18	87.94	52.19	648.48	25.47	92
62.5	28.52	40.89	45.97	50.60	57.43	61.81	70.14	77.71	82.29	88.49	94.25	62.85	544.26	23.33	98
65.0	31.24	40.51	52.94	58.40	63.89	67.50	74.42	79.56	82.35	86.50	92.18	65.17	508.70	22.55	87
67.5	35.52	50.86	54.21	58.85	68.50	73.08	78.27	84.64	86.27	91.65	96.34	69.61	506.86	22.51	103
70.0	40.71	52.41	58.04	64.86	72.33	76.86	81.91	86.42	88.51	91.06	96.12	72.21	430.50	20.75	90
72.5	32.68	52.06	57.64	64.66	72.62	81.65	83.48	86.89	92.82	94.08	98.08	72.34	564.33	23.76	96
75.0	40.79	55.65	60.74	68.43	76.22	81.75	86.40	89.52	94.39	96.79	98.96	76.07	439.67	20.97	94
77.5	42.04	62.76	68.79	73.00	77.54	83.71	86.66	90.06	91.38	94.29	98.75	77.66	381.28	19.53	95
80.0	57.67	70.80	74.47	78.10	81.93	86.53	87.37	88.97	91.51	94.83	99.11	81.99	205.32	14.33	93
82.5	67.68	76.29	80.22	80.44	87.61	88.75	90.20	92.67	93.66	96.01	98.57	85.47	147.64	12.15	94
85.0	72.33	78.82	80.26	82.12	88.61	91.24	92.81	95.72	97.41	97.89	99.18	87.91	117.18	10.83	87
87.5	78.22	84.78	88.20	90.01	91.45	93.39	95.69	97.29	98.70	99.47	100.00	91.02	95.09	9.75	84
90.0	82.64	86.09	86.95	90.64	92.35	94.91	97.27	97.88	98.41	98.68	100.00	92.69	47.05	6.86	86
92.5	86.62	89.25	89.96	91.56	93.40	96.28	97.27	98.17	98.89	99.06	99.74	93.98	31.26	5.59	70
95.0	85.61	93.10	94.28	94.85	96.57	97.27	98.59	99.18	99.46	99.67	100.00	95.56	29.39	5.42	71
97.5	94.86	98.44	99.09	99.39	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.52	11.80	3.43	167

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Third-quartile storms; storm duration 24 to 72 hours															
2.5	0	0	0	0	0.52	1.88	3.49	5.41	6.68	7.88	14.06	4.96	62.36	7.90	405
5.0	1.52	3.46	4.33	5.56	6.12	8.27	11.30	15.27	19.07	23.35	35.97	13.96	209.96	14.49	211
7.5	3.21	5.62	6.52	8.11	11.19	13.24	15.66	22.31	25.90	34.34	51.30	19.87	338.69	18.40	190
10.0	4.88	8.53	10.09	11.19	12.52	16.27	19.07	26.10	40.74	56.28	63.02	25.71	522.06	22.85	187
12.5	4.75	7.74	10.61	11.92	15.95	20.44	23.98	37.58	46.91	64.31	76.61	30.26	713.61	26.71	149
15.0	5.39	9.10	10.57	11.99	13.90	21.44	25.84	33.61	41.43	50.24	78.07	29.54	640.95	25.32	150
17.5	5.99	11.47	12.00	13.50	16.34	25.77	29.28	34.88	42.42	53.12	82.07	31.84	683.55	26.14	139
20.0	6.03	10.69	11.92	13.24	18.64	27.67	36.04	54.33	58.48	61.77	84.86	36.04	775.26	27.84	114
22.5	2.50	7.65	12.59	14.55	17.37	24.14	31.64	45.59	56.80	64.61	77.12	33.21	774.52	27.83	105
25.0	5.61	10.45	11.45	13.62	18.73	25.90	32.25	48.78	58.63	66.55	79.84	35.09	792.09	28.14	105
27.5	9.42	12.03	13.41	15.59	20.51	26.38	31.09	37.62	55.48	68.23	83.96	34.92	742.37	27.25	122
30.0	9.00	14.39	18.41	20.31	25.94	30.73	33.06	40.96	50.37	64.27	80.19	36.82	663.77	25.76	93
32.5	6.80	10.87	11.88	14.42	21.89	27.97	33.15	36.52	37.44	47.92	71.20	31.09	497.46	22.30	88
35.0	6.41	10.24	16.06	17.93	26.40	30.23	35.72	38.86	41.80	56.83	79.30	35.05	668.35	25.85	95
37.5	7.83	12.22	13.55	15.81	20.51	29.66	35.91	40.20	46.04	62.06	76.22	34.65	642.69	25.35	87
40.0	9.31	15.30	17.67	20.23	26.42	32.31	39.03	42.25	47.99	52.23	77.55	35.74	549.02	23.43	100
42.5	10.22	17.16	18.82	21.82	29.51	32.97	40.41	42.99	48.18	54.72	77.11	36.59	469.69	21.67	92
45.0	8.56	13.35	19.08	24.31	28.87	35.83	43.65	50.59	57.92	76.59	81.37	41.06	752.72	27.44	88
47.5	8.39	10.91	13.17	15.67	25.54	33.64	37.18	46.99	52.28	57.09	78.03	35.53	634.62	25.19	124
50.0	10.39	16.11	18.38	19.34	23.04	28.91	36.64	44.38	51.39	58.33	77.06	35.48	549.04	23.43	139
52.5	9.95	23.02	26.48	29.27	34.40	37.97	41.57	44.65	48.42	54.47	75.17	39.61	457.19	21.38	136
55.0	14.93	32.52	36.86	41.44	43.67	48.05	51.78	58.08	60.68	72.96	82.68	49.28	489.56	22.13	139
57.5	14.79	40.09	43.67	46.88	50.34	56.54	63.34	74.70	79.09	80.30	85.48	56.39	580.72	24.10	155
60.0	23.01	39.59	42.85	45.68	51.27	60.62	70.59	77.70	82.95	84.28	91.05	59.54	598.19	24.46	144
62.5	20.55	41.00	43.85	46.17	58.59	64.41	69.07	77.15	84.35	85.25	91.80	60.51	639.15	25.28	148
65.0	19.68	27.19	37.88	44.31	51.42	62.34	67.71	76.12	78.33	79.73	92.20	57.62	668.25	25.85	183
67.5	25.44	40.97	45.96	51.45	59.46	68.21	73.87	79.73	83.59	86.32	93.19	62.94	607.02	24.64	169
70.0	32.10	48.27	53.76	57.28	62.58	69.74	77.39	86.30	89.19	89.19	98.19	67.20	591.25	24.32	175
72.5	28.23	50.42	56.05	62.90	70.48	77.36	83.48	89.19	89.19	92.77	98.54	71.13	609.06	24.68	186
75.0	35.87	50.17	55.85	58.22	68.78	76.21	81.81	88.57	90.50	93.30	98.45	70.63	578.34	24.05	182
77.5	23.75	52.20	58.57	61.82	70.04	77.94	83.47	87.09	89.19	92.81	97.47	70.01	655.75	25.61	164
80.0	31.66	49.48	60.44	64.47	70.86	77.37	82.28	88.07	90.52	94.44	97.72	71.05	604.47	24.59	173
82.5	41.95	57.12	65.54	70.44	78.82	81.90	85.94	89.54	92.56	95.70	97.88	75.95	470.77	21.70	173
85.0	47.41	66.23	71.75	77.12	83.05	87.72	90.63	93.08	94.64	96.32	98.32	80.44	386.57	19.66	184
87.5	54.80	73.05	76.74	81.50	85.95	89.35	94.19	95.67	96.42	97.25	98.44	83.91	302.42	17.39	166
90.0	50.04	68.32	76.50	82.86	86.18	88.45	94.27	97.03	97.26	97.57	98.65	83.34	313.07	17.69	171
92.5	77.31	85.29	86.92	88.33	90.29	92.14	94.58	96.64	97.44	98.03	99.02	90.44	76.19	8.73	170
95.0	89.08	91.78	92.88	94.04	95.18	95.90	96.89	97.91	98.42	98.62	99.82	94.97	21.25	4.61	158
97.5	93.93	97.20	97.74	98.30	98.98	99.59	100.00	100.00	100.00	100.00	100.00	98.21	8.73	2.95	336

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples	
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th					90th
Third-quartile storms; storm duration 0 to 72 hours															
2.5	0	0	0	0	0	0.30	1.53	3.23	4.45	5.51	9.43	3.40	42.49	6.52	748
5.0	1.26	2.54	3.11	3.76	5.64	6.77	8.96	12.59	14.98	17.90	27.57	11.53	164.07	12.81	325
7.5	2.30	4.21	4.88	5.72	8.11	10.43	12.38	15.81	17.97	23.98	42.78	15.55	259.64	16.11	312
10.0	3.66	6.07	6.81	7.84	10.35	12.43	16.65	20.08	23.98	32.15	58.67	20.50	408.50	20.21	313
12.5	3.81	6.78	8.83	9.92	11.99	16.11	19.71	24.06	28.41	37.58	71.05	24.56	563.63	23.74	252
15.0	4.71	7.84	9.57	10.95	12.56	16.34	21.55	29.52	31.75	37.95	61.97	24.60	505.03	22.47	257
17.5	4.92	9.06	9.94	11.62	13.76	16.86	24.33	29.05	32.93	38.12	67.07	25.67	537.10	23.18	234
20.0	6.03	9.97	11.36	13.04	15.51	21.03	26.61	32.94	40.34	45.42	64.97	28.93	590.08	24.29	218
22.5	2.66	7.19	11.58	13.23	15.75	18.20	22.48	29.25	32.88	37.29	66.06	26.18	557.99	23.62	214
25.0	3.74	8.57	10.57	11.47	16.45	21.53	26.50	32.35	35.42	44.84	68.31	28.43	615.53	24.81	212
27.5	7.03	11.81	13.41	14.29	19.93	24.17	30.64	35.31	37.62	49.13	70.70	31.27	610.27	24.70	217
30.0	6.17	13.05	14.76	18.70	22.34	27.56	32.16	38.39	43.69	46.17	71.94	32.62	563.83	23.75	185
32.5	6.61	10.83	11.94	14.36	19.11	23.08	30.51	35.56	37.30	44.84	66.19	29.00	476.52	21.83	203
35.0	6.36	10.22	12.76	16.09	22.58	28.38	34.10	38.93	41.64	48.23	74.26	32.38	583.09	24.15	168
37.5	7.33	12.56	14.29	17.21	21.83	28.38	33.71	39.29	43.23	50.43	75.26	33.28	570.73	23.89	183
40.0	6.20	13.47	15.69	18.73	25.38	30.33	36.90	41.91	45.51	52.23	74.64	34.02	546.30	23.37	195
42.5	7.90	14.14	17.96	20.16	27.80	32.25	38.03	42.52	47.00	53.39	71.75	34.65	481.25	21.94	187
45.0	4.81	11.50	14.01	18.77	24.31	30.89	38.24	44.94	51.28	58.91	78.71	36.22	703.33	26.52	180
47.5	7.27	11.07	13.41	15.88	21.91	27.82	36.23	43.38	48.69	54.98	77.15	34.16	634.13	25.18	232
50.0	9.10	15.50	18.40	19.84	24.29	31.62	37.16	44.03	47.39	54.29	71.02	35.45	517.05	22.74	260
52.5	9.78	20.79	23.09	26.43	30.36	36.69	41.36	45.26	48.67	53.08	73.52	38.21	490.02	22.14	277
55.0	14.58	26.70	30.90	34.88	41.82	45.62	49.87	56.90	59.32	65.09	82.01	46.71	530.01	23.02	279
57.5	16.18	31.25	36.59	40.41	46.14	51.08	59.11	65.48	72.40	78.76	84.70	52.30	579.71	24.08	307
60.0	18.55	29.88	36.00	40.78	46.66	53.88	62.39	70.59	75.54	81.34	88.13	54.26	633.47	25.17	312
62.5	23.70	37.31	42.46	45.76	54.33	61.11	67.22	75.05	78.06	85.22	91.96	59.47	605.31	24.60	322
65.0	20.17	34.34	40.45	46.36	56.66	63.24	67.69	75.89	77.86	79.80	90.21	58.83	620.02	24.90	336
67.5	25.63	44.04	47.90	52.54	59.48	68.58	73.75	79.73	82.58	85.83	93.54	63.80	573.08	23.94	363
70.0	32.72	46.90	53.37	57.98	64.10	71.25	77.39	83.00	86.68	89.19	96.09	67.35	548.14	23.41	349
72.5	28.22	50.32	56.13	61.37	67.51	75.42	82.47	86.94	89.19	90.73	97.47	69.89	583.43	24.15	375
75.0	35.91	52.96	57.14	63.24	71.48	77.35	83.09	86.88	89.29	91.68	97.89	71.88	527.40	22.97	363
77.5	37.20	59.42	62.42	66.37	74.52	80.39	84.91	89.19	90.50	92.56	97.47	73.88	506.78	22.51	349
80.0	44.02	63.76	67.04	71.55	78.41	82.47	86.46	88.75	90.49	93.31	97.47	76.55	422.12	20.55	360
82.5	52.70	69.65	73.99	79.02	82.42	86.17	89.06	91.36	92.97	94.74	97.66	80.67	328.89	18.14	355
85.0	60.00	75.59	78.23	81.50	86.81	89.74	91.94	93.76	95.06	96.32	98.42	83.93	276.33	16.62	354
87.5	71.86	81.04	83.61	85.69	89.88	92.51	94.55	95.81	96.77	97.47	98.96	87.51	200.40	14.16	331
90.0	67.20	82.96	85.22	86.92	90.60	93.71	96.01	97.25	97.55	97.96	98.96	88.25	204.80	14.31	334
92.5	82.68	88.14	89.29	90.55	92.83	94.67	96.61	97.68	98.10	98.42	99.30	92.50	57.29	7.57	317
95.0	89.72	92.90	94.19	94.87	95.82	96.96	97.90	98.54	98.68	99.01	100.00	95.59	20.93	4.58	289
97.5	95.63	98.13	98.63	98.96	99.62	100.00	100.00	100.00	100.00	100.00	100.00	98.64	7.80	2.79	673

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples	
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th					
Fourth-quartile storms; storm duration 0 to 6 hours																
2.5	0	0	0	0	0	0	0	0	0	0	2.33	0.49	3.54	1.88	16	
5.0	--	--	--	--	2.69	3.63	4.57	--	--	--	--	3.63	2.45	1.57	2	
7.5	--	--	--	--	3.22	7.24	11.27	--	--	--	--	7.24	45.04	6.71	2	
10.0	--	1.18	1.93	2.69	7.11	12.99	13.86	14.66	15.00	15.33	--	9.37	38.16	6.18	5	
12.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	
15.0	--	--	5.85	8.23	12.99	17.75	19.54	21.33	22.22	--	--	15.27	47.73	6.91	3	
17.5	--	--	3.09	8.29	18.68	29.07	29.44	29.81	30.00	--	--	20.72	155.52	12.47	3	
20.0	--	--	--	--	4.42	11.04	17.66	--	--	--	--	11.04	121.86	11.04	2	
22.5	--	.27	.68	1.08	3.36	6.38	19.23	29.79	32.79	35.78	--	14.66	233.52	15.28	5	
25.0	--	7.98	8.76	9.55	11.11	22.42	33.72	36.31	37.60	38.89	--	22.92	183.59	13.55	4	
27.5	--	--	--	--	6.29	13.19	20.08	--	--	--	--	13.19	132.03	11.49	2	
30.0	--	--	--	--	8.47	19.88	31.29	--	--	--	--	19.88	361.36	19.01	2	
32.5	--	5.41	7.22	7.95	12.43	25.97	27.72	34.60	38.89	39.61	--	21.81	206.74	14.38	7	
35.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	
37.5	--	--	2.61	4.64	8.70	12.77	18.22	23.68	26.41	--	--	13.93	95.07	9.75	3	
40.0	--	--	--	--	--	2.94	--	--	--	--	--	2.94	0	0	1	
42.5	--	--	--	--	--	52.33	--	--	--	--	--	52.33	0	0	1	
45.0	--	5.10	6.23	7.36	16.00	27.84	28.90	31.46	34.25	37.03	--	21.76	176.27	13.28	5	
47.5	--	--	--	--	--	26.41	--	--	--	--	--	26.41	0	0	1	
50.0	--	6.62	11.14	15.65	24.69	28.56	32.43	44.12	49.97	55.81	--	29.89	311.79	17.66	4	
52.5	--	--	0	2.55	7.66	12.77	18.40	24.03	26.84	--	--	13.20	120.16	10.96	3	
55.0	--	8.70	12.77	16.85	25.00	31.94	38.89	41.83	43.30	44.77	--	29.34	193.54	13.91	4	
57.5	--	--	--	--	34.02	42.19	50.37	--	--	--	--	42.19	185.54	13.62	2	
60.0	--	--	0	2.79	8.38	13.97	21.58	29.19	32.99	--	--	15.65	182.80	13.52	3	
62.5	--	3.10	6.66	10.23	18.18	26.54	29.58	35.72	41.89	48.06	--	24.73	305.44	17.48	5	
65.0	--	--	--	--	6.26	12.42	18.58	--	--	--	--	12.42	105.38	10.27	2	
67.5	--	16.39	23.50	29.60	36.83	39.14	41.25	47.72	48.76	48.92	--	35.48	195.62	13.99	6	
70.0	--	8.37	14.21	18.41	18.57	22.08	26.15	28.27	42.73	62.56	--	29.67	689.33	26.26	6	
72.5	--	14.58	18.64	22.62	29.58	33.61	37.24	40.71	42.42	42.72	--	30.43	142.87	11.95	7	
75.0	--	27.80	28.81	29.83	34.10	39.50	40.98	43.36	45.45	47.53	--	37.60	62.21	7.89	5	
77.5	--	39.65	40.56	45.20	53.93	61.01	61.95	71.50	77.70	82.10	--	60.09	293.30	17.13	7	
80.0	--	27.94	31.55	35.16	42.37	51.58	60.79	61.13	61.30	61.47	--	48.14	194.76	13.96	4	
82.5	--	6.91	17.28	27.65	42.44	54.26	55.19	59.90	66.04	72.17	--	44.18	662.07	25.73	5	
85.0	--	29.71	46.11	49.70	58.53	72.29	86.39	91.27	92.17	92.71	--	64.89	895.56	29.93	7	
87.5	--	28.56	34.67	40.78	52.07	62.89	65.90	74.11	83.41	92.72	--	59.81	615.16	24.80	5	
90.0	41.82	60.06	60.22	63.05	75.53	84.93	91.08	95.54	96.00	96.46	99.02	78.61	366.56	19.15	10	
92.5	--	62.86	71.43	72.27	76.05	86.11	90.71	94.14	95.65	97.25	--	81.17	259.20	16.10	7	
95.0	--	85.59	86.39	87.18	88.78	92.44	96.10	98.05	99.03	100.00	--	92.62	32.69	5.72	4	
97.5	95.95	99.04	99.73	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.91	8.22	2.87	20	

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Fourth-quartile storms; storm duration 6 to 12 hours															
2.5	0	0	0	0	0	0	1.00	2.40	3.88	5.59	13.92	3.38	36.79	6.07	94
5.0	1.57	2.63	2.97	3.70	4.55	5.41	10.95	15.12	21.75	22.96	24.77	10.45	78.31	8.85	32
7.5	.99	3.12	3.77	4.06	5.94	11.65	14.88	23.21	24.05	25.00	25.50	12.87	97.03	9.85	27
10.0	1.18	4.40	4.82	5.77	9.80	14.58	20.45	24.82	25.00	25.51	32.00	16.26	148.48	12.19	37
12.5	0	4.10	4.90	5.66	10.62	18.18	23.84	25.41	25.81	27.25	34.01	17.25	163.46	12.79	35
15.0	6.67	10.84	14.04	15.63	23.57	24.78	26.52	28.31	29.67	31.49	33.00	22.52	109.74	10.48	25
17.5	1.71	8.47	10.00	10.66	14.04	24.13	27.74	28.43	29.61	32.27	39.97	20.98	173.41	13.17	26
20.0	8.90	9.48	10.25	15.62	20.58	25.59	28.49	30.16	30.89	35.38	39.61	23.79	127.54	11.29	28
22.5	9.03	13.17	14.44	15.80	23.38	30.30	35.48	40.07	40.99	41.25	48.76	29.00	241.14	15.53	25
25.0	2.52	16.16	21.46	25.72	28.88	30.17	32.81	39.67	41.25	41.65	43.63	29.32	185.53	13.62	21
27.5	6.48	13.52	13.89	20.68	29.47	31.52	32.27	33.56	41.25	42.93	43.38	27.90	163.10	12.77	23
30.0	12.02	17.75	22.53	24.94	32.20	33.70	38.38	41.25	42.34	43.43	44.34	31.71	138.03	11.75	21
32.5	1.83	8.99	24.02	25.46	28.00	32.20	32.88	38.23	41.26	44.65	47.09	29.35	289.19	17.01	27
35.0	23.02	29.09	29.86	30.67	33.76	37.84	42.86	45.46	45.52	45.54	47.44	36.87	103.42	10.17	20
37.5	3.34	12.34	14.88	15.81	17.54	27.00	35.74	41.68	45.54	45.54	45.96	27.14	243.87	15.62	22
40.0	4.45	27.64	29.14	30.33	32.20	32.67	37.34	42.33	45.13	45.88	46.41	33.92	206.50	14.37	20
42.5	7.89	17.85	27.00	28.34	32.20	35.95	41.25	45.11	46.23	46.47	47.32	33.15	199.48	14.12	16
45.0	4.94	5.90	12.09	17.39	19.38	24.26	31.24	37.66	38.46	39.48	50.81	27.06	338.48	18.40	18
47.5	17.48	24.45	27.26	28.02	32.20	33.33	40.09	42.81	44.69	45.91	59.54	35.97	236.16	15.37	17
50.0	--	14.76	22.54	24.19	28.00	33.33	41.81	44.61	45.06	45.62	--	31.58	210.87	14.52	7
52.5	.76	8.02	11.00	14.18	25.58	29.84	32.20	33.45	37.52	43.50	62.85	28.67	414.07	20.35	17
55.0	8.20	14.49	19.03	24.20	25.96	28.57	37.09	40.28	46.97	47.52	62.98	32.91	355.40	18.85	15
57.5	2.57	13.13	14.40	16.25	27.85	30.88	33.90	42.15	44.83	45.54	59.16	30.25	353.04	18.79	24
60.0	2.53	12.86	16.54	18.31	23.18	32.36	35.59	41.85	42.92	45.14	58.83	31.15	408.88	20.22	17
62.5	1.42	10.36	18.83	19.35	20.87	31.14	36.76	37.59	38.08	42.87	72.57	30.65	433.23	20.81	16
65.0	3.56	5.56	6.21	10.75	30.88	42.42	43.37	50.05	53.98	60.57	78.87	36.54	644.33	25.38	13
67.5	5.76	19.54	26.09	29.28	40.06	41.53	44.92	46.14	55.24	60.49	83.92	42.12	594.73	24.39	27
70.0	3.44	8.69	9.90	17.35	23.08	38.81	47.19	48.81	50.74	51.81	58.72	33.85	500.52	22.37	28
72.5	5.75	25.44	28.43	30.86	38.95	42.78	49.63	53.35	59.24	64.66	90.09	44.86	596.92	24.43	25
75.0	12.89	29.55	33.33	34.54	45.68	53.57	54.24	57.35	70.89	73.91	89.83	50.18	613.26	24.76	34
77.5	16.60	34.53	38.39	39.51	44.64	46.21	48.73	54.24	54.24	58.33	89.96	47.98	497.78	22.31	36
80.0	38.96	44.98	45.90	47.42	49.40	53.97	58.35	61.61	64.01	66.93	86.59	54.90	348.17	18.66	52
82.5	36.98	49.50	50.30	50.63	59.07	61.41	65.04	73.85	75.13	77.32	92.00	61.77	391.23	19.78	44
85.0	35.59	50.04	52.54	53.45	72.03	76.73	79.40	81.18	87.73	89.33	94.88	69.21	523.52	22.88	42
87.5	40.51	52.53	53.68	66.15	77.81	83.09	83.90	88.38	90.89	91.43	94.31	73.62	441.50	21.01	49
90.0	25.22	55.12	58.00	63.01	79.25	87.46	91.32	93.89	94.35	95.01	98.31	75.15	642.38	25.35	56
92.5	43.29	64.51	72.71	78.58	82.32	91.77	94.40	95.50	95.98	96.33	98.31	80.80	448.20	21.17	66
95.0	44.99	71.54	77.47	86.08	92.45	96.15	96.92	97.18	97.83	98.07	100.00	85.07	406.46	20.16	55
97.5	84.49	96.44	97.48	98.18	99.00	100.00	100.00	100.00	100.00	100.00	100.00	94.48	180.53	13.44	115

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Fourth-quartile storms; storm duration 12 to 24 hours															
2.5	0	0	0	0	0	0.34	0.98	3.01	4.84	6.61	13.30	3.86	45.61	6.75	199
5.0	1.39	2.38	2.74	3.04	4.83	6.58	8.28	13.14	13.87	17.38	21.58	8.76	53.14	7.29	78
7.5	1.79	2.66	3.34	4.25	5.82	7.44	8.64	11.83	14.77	19.15	21.58	9.60	62.09	7.88	50
10.0	1.46	3.70	4.32	5.36	7.73	8.29	9.27	15.97	17.59	18.95	23.42	10.66	55.41	7.44	50
12.5	0	3.66	5.24	7.30	8.06	9.20	10.87	19.05	19.54	21.58	25.74	12.23	82.88	9.10	39
15.0	1.12	3.66	4.73	4.94	5.73	7.77	9.73	12.13	15.99	19.09	23.97	11.17	138.11	11.75	37
17.5	.72	1.80	3.06	3.23	5.67	7.84	8.54	12.34	17.75	19.11	28.02	10.74	116.29	10.78	36
20.0	4.87	6.29	6.89	7.09	8.22	9.31	10.89	13.31	20.08	23.35	35.24	14.87	209.92	14.49	34
22.5	1.15	4.00	5.10	6.47	8.23	10.95	12.44	12.82	13.63	20.11	26.28	12.04	90.59	9.52	34
25.0	6.75	10.37	12.60	13.33	15.26	16.77	18.88	20.73	21.59	23.17	34.08	18.84	174.14	13.20	54
27.5	1.21	9.90	13.88	17.08	20.96	22.98	28.97	31.14	32.78	34.16	47.87	24.94	300.36	17.33	52
30.0	2.71	9.28	13.87	14.90	17.23	21.37	23.57	25.83	28.13	32.20	36.14	20.99	155.82	12.48	31
32.5	1.35	9.55	9.82	18.19	20.11	24.87	28.73	34.38	35.90	39.17	45.96	26.26	365.61	19.12	45
35.0	1.67	5.80	7.50	9.55	19.57	21.46	25.70	31.86	37.07	38.54	44.87	24.17	391.92	19.80	39
37.5	3.35	7.78	9.09	15.35	24.00	26.88	29.81	33.99	36.05	40.86	47.39	27.16	349.09	18.68	40
40.0	6.66	13.48	13.72	17.88	26.71	29.12	32.15	40.65	42.03	42.98	48.90	29.86	306.80	17.52	40
42.5	5.20	8.15	10.61	12.91	15.34	25.61	29.72	35.41	42.68	45.34	49.71	27.24	421.96	20.54	51
45.0	8.27	10.87	14.69	18.33	19.86	32.38	35.48	41.75	43.54	49.33	52.67	30.78	406.10	20.15	49
47.5	10.43	15.25	19.40	20.40	23.46	25.61	31.71	37.99	42.11	43.54	53.01	30.68	334.16	18.28	57
50.0	11.28	19.08	21.49	21.86	29.26	33.66	37.23	42.68	44.48	46.98	49.46	32.82	246.20	15.69	59
52.5	11.19	16.39	21.49	23.56	31.61	38.83	42.68	46.50	48.85	51.57	56.68	36.64	377.82	19.44	65
55.0	13.99	21.49	22.64	28.77	32.54	39.89	42.71	43.16	46.12	49.03	57.67	37.51	329.49	18.15	56
57.5	17.09	21.86	25.36	25.56	32.37	42.68	43.16	48.99	49.52	54.81	60.24	40.43	418.64	20.46	51
60.0	16.14	18.87	21.86	23.30	33.40	39.89	43.16	48.43	49.52	53.13	59.52	38.76	395.86	19.90	43
62.5	17.06	21.84	23.77	25.61	38.11	42.71	45.15	50.00	52.53	57.67	61.75	41.12	404.72	20.12	39
65.0	16.54	20.93	22.28	23.89	27.82	36.17	39.89	48.68	53.06	57.67	58.36	38.09	403.46	20.09	39
67.5	24.06	30.39	33.74	36.33	39.50	40.84	44.64	49.51	55.70	58.09	84.65	46.59	425.01	20.62	46
70.0	18.50	24.06	24.61	29.33	36.69	39.86	41.35	45.29	46.49	48.31	58.52	37.89	232.23	15.24	44
72.5	24.84	30.53	36.59	40.06	45.03	46.47	50.30	53.85	57.67	60.08	94.03	50.19	475.37	21.80	51
75.0	12.46	25.13	30.51	36.45	42.80	48.68	53.78	55.48	57.97	59.62	77.19	46.26	473.49	21.76	51
77.5	25.53	32.95	34.32	38.90	46.10	51.07	56.89	60.32	65.19	70.83	89.43	52.58	459.77	21.44	52
80.0	13.93	31.18	40.40	43.24	48.72	55.56	59.05	63.55	67.86	69.66	85.36	52.73	573.10	23.94	67
82.5	17.14	29.44	37.54	46.22	49.46	55.56	61.91	69.17	73.19	83.45	90.24	55.51	632.99	25.16	64
85.0	26.38	31.05	33.36	37.94	46.59	51.77	60.56	71.43	74.78	80.42	88.71	55.31	574.73	23.97	90
87.5	29.06	38.14	44.56	49.15	54.82	62.97	70.99	75.86	79.52	83.75	93.09	61.19	559.93	23.66	105
90.0	33.46	54.08	59.75	64.46	74.90	79.17	82.50	85.95	87.28	89.37	95.60	71.42	540.48	23.25	132
92.5	27.77	52.12	64.03	79.98	84.57	88.55	90.23	91.81	92.44	93.11	96.13	75.87	651.77	25.53	130
95.0	43.22	53.34	65.57	74.97	89.40	93.22	94.14	95.44	96.08	96.68	97.82	80.22	526.16	22.94	146
97.5	75.54	91.15	94.02	95.47	96.96	98.06	99.13	100.00	100.00	100.00	100.00	92.49	215.88	14.69	262

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Fourth-quartile storms; storm duration 24 to 72 hours															
2.5	0	0	0	0	0	1.18	3.23	5.88	8.22	9.99	18.41	5.04	52.83	7.27	223
5.0	1.15	3.04	3.33	3.96	6.70	10.65	13.72	20.92	23.93	29.36	31.40	14.27	164.37	12.82	106
7.5	2.08	4.03	5.96	6.67	8.14	11.41	15.90	23.62	29.30	31.36	32.96	16.35	184.76	13.59	93
10.0	3.14	7.11	7.81	8.96	10.75	14.83	19.69	24.88	30.82	31.61	35.15	18.93	210.05	14.49	70
12.5	1.11	2.66	5.21	6.24	9.81	11.38	16.25	19.86	28.52	30.81	31.72	16.82	257.72	16.05	66
15.0	2.62	7.56	8.81	9.91	12.02	15.09	20.16	23.28	25.45	31.18	31.72	18.51	195.23	13.97	67
17.5	3.13	9.67	11.57	12.22	15.42	19.56	23.36	25.81	30.03	31.51	33.33	20.73	192.19	13.86	67
20.0	3.45	6.06	8.23	11.43	15.63	18.50	24.01	26.44	31.67	32.00	36.45	21.29	266.32	16.32	66
22.5	3.97	6.55	8.64	10.03	12.63	18.48	22.71	26.79	27.28	33.60	38.36	20.73	245.17	15.66	60
25.0	6.22	9.77	10.96	11.40	12.79	20.89	23.85	28.25	31.98	34.52	40.32	22.52	241.19	15.53	61
27.5	11.49	13.67	14.46	15.41	18.96	23.81	28.27	32.95	33.94	37.43	46.33	26.86	272.55	16.51	60
30.0	9.35	14.72	16.46	18.09	22.62	30.39	32.22	36.55	40.20	41.08	50.70	29.94	287.67	16.96	55
32.5	9.25	15.58	16.98	18.10	20.15	22.41	32.96	39.18	41.07	41.90	46.64	28.36	243.36	15.60	68
35.0	12.03	19.76	20.72	21.38	24.43	30.74	36.74	41.75	43.37	44.16	47.24	32.38	288.63	16.99	60
37.5	12.57	21.56	22.13	23.12	25.18	26.62	29.77	36.34	41.73	42.54	50.49	30.88	218.75	14.79	57
40.0	12.66	22.90	24.76	26.73	29.85	32.09	36.48	40.97	42.08	44.90	47.24	33.44	222.28	14.91	59
42.5	24.57	26.93	27.84	28.90	30.84	32.98	37.35	42.08	43.81	46.03	49.54	36.45	214.09	14.63	68
45.0	12.31	17.64	19.43	24.74	27.90	36.05	38.50	40.65	42.08	44.19	47.41	32.73	250.63	15.83	63
47.5	13.36	17.81	20.96	26.03	31.36	35.13	39.31	44.21	45.86	48.02	57.08	35.25	298.71	17.28	55
50.0	11.18	26.98	28.63	30.14	35.52	39.81	42.66	47.61	48.35	49.10	61.33	39.56	392.56	19.81	48
52.5	12.15	20.34	21.77	25.82	33.29	38.02	43.03	46.81	48.47	49.58	58.20	37.11	323.96	18.00	57
55.0	14.85	25.11	27.97	28.65	36.93	42.08	45.05	46.98	47.99	48.86	53.18	38.85	236.90	15.39	59
57.5	10.50	19.01	25.71	28.54	30.41	38.75	44.18	46.98	48.57	49.46	58.34	36.90	343.75	18.54	76
60.0	19.46	27.47	30.57	32.97	39.49	43.37	46.58	49.16	50.04	51.07	59.10	41.43	255.35	15.98	77
62.5	22.89	30.12	31.84	33.51	41.15	46.98	50.83	52.62	52.99	54.64	59.19	43.92	244.10	15.62	73
65.0	19.33	31.22	32.12	33.01	39.66	45.66	51.68	55.31	56.21	57.05	61.63	44.15	323.13	17.98	66
67.5	20.85	26.37	33.51	34.50	41.20	45.17	52.88	56.18	58.15	59.34	63.84	44.91	322.78	17.97	79
70.0	17.92	31.59	35.87	37.90	44.49	46.35	47.82	55.44	57.24	60.72	67.88	45.44	319.62	17.88	65
72.5	23.21	27.69	32.77	33.19	38.44	46.99	49.86	54.21	57.12	58.26	78.82	46.70	359.50	18.96	74
75.0	27.52	31.49	34.83	36.17	43.25	49.61	55.88	59.46	61.51	62.18	72.18	49.61	332.05	18.22	102
77.5	30.42	36.84	41.05	44.92	47.66	55.02	59.23	63.30	64.26	64.79	75.69	52.50	376.41	19.40	99
80.0	32.32	36.50	41.04	46.75	53.70	58.12	62.01	64.24	65.93	68.17	78.03	54.97	338.45	18.40	124
82.5	37.66	45.72	48.95	51.34	54.47	60.90	64.44	68.93	70.76	73.91	81.54	59.35	332.47	18.23	117
85.0	35.34	52.96	55.41	58.49	62.70	69.12	73.35	76.92	79.85	81.69	86.54	65.27	359.41	18.96	125
87.5	38.12	54.84	58.15	59.83	65.75	72.66	78.28	84.21	86.50	87.89	91.59	69.33	415.69	20.39	149
90.0	50.54	61.44	62.99	63.82	71.50	77.16	83.87	89.09	92.12	94.29	98.61	76.11	322.50	17.96	158
92.5	55.43	67.96	70.87	74.98	79.40	86.29	90.80	93.53	94.82	96.84	99.15	81.68	257.52	16.05	172
95.0	64.29	75.55	78.51	80.63	85.51	89.68	93.44	95.14	96.04	96.81	99.15	85.52	186.74	13.67	190
97.5	84.59	92.74	94.34	95.48	97.28	98.26	99.31	100.00	100.00	100.00	100.00	95.07	67.02	8.19	334

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples	
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th					90th
Fourth-quartile storms; storm duration 0 to 72 hours															
2.5	0	0	0	0	0	0.38	1.67	3.96	5.33	7.97	14.76	4.17	46.68	6.83	532
5.0	1.48	2.48	3.05	3.36	5.14	7.23	11.47	15.86	19.15	21.58	29.36	11.64	117.57	10.84	218
7.5	1.90	3.37	4.25	5.64	7.34	9.04	13.58	18.88	21.68	24.45	31.43	13.73	142.98	11.96	172
10.0	2.40	4.56	6.41	7.53	9.21	12.07	16.78	20.67	23.12	24.73	31.71	15.47	156.56	12.51	162
12.5	1.11	3.70	5.26	6.74	9.10	11.11	18.38	21.49	24.76	25.96	31.72	15.65	190.00	13.78	140
15.0	2.60	5.50	7.18	8.06	10.87	14.04	19.13	23.12	24.72	27.71	31.71	17.14	176.18	13.27	132
17.5	1.66	5.66	7.84	8.47	11.75	15.42	20.41	25.72	27.88	29.50	32.87	18.05	187.01	13.68	132
20.0	4.00	7.05	8.39	9.32	11.71	17.70	22.16	26.37	30.14	31.82	36.06	19.99	231.51	15.22	130
22.5	2.61	6.25	7.94	9.72	12.44	14.80	21.19	26.76	28.74	33.97	39.62	19.77	236.54	15.38	124
25.0	6.91	10.38	11.43	12.60	15.44	19.35	22.07	26.99	29.97	32.72	41.25	22.13	217.34	14.74	140
27.5	4.84	13.14	13.95	15.95	21.31	24.68	29.82	32.31	33.60	35.18	43.33	26.11	266.43	16.32	137
30.0	8.58	13.87	15.95	17.38	22.44	26.99	32.20	35.29	38.01	40.20	43.93	27.55	242.25	15.56	109
32.5	5.60	11.79	16.31	18.41	21.43	25.30	32.18	36.38	39.46	41.30	45.26	27.59	290.43	17.04	147
35.0	8.39	13.55	20.11	20.87	24.49	29.35	33.86	40.41	42.08	43.93	47.24	30.44	313.09	17.69	119
37.5	7.88	13.00	16.46	21.56	24.56	26.64	29.77	35.71	41.02	42.08	46.20	28.57	271.76	16.49	122
40.0	11.46	17.08	24.19	26.05	28.99	32.00	34.65	40.91	42.27	44.34	46.56	32.07	256.15	16.00	120
42.5	10.52	14.82	24.06	26.48	28.88	31.44	35.67	41.25	43.81	46.25	49.35	32.72	309.82	17.60	136
45.0	8.21	14.17	17.77	19.35	24.83	31.88	36.53	39.60	41.75	43.97	50.50	30.86	322.64	17.96	135
47.5	11.96	19.18	20.68	21.45	26.87	32.20	37.02	41.79	43.89	45.80	53.43	33.27	309.69	17.60	130
50.0	11.11	20.54	22.98	26.99	31.02	35.37	40.52	44.62	47.00	48.14	54.96	35.39	318.10	17.84	118
52.5	9.81	15.92	20.99	22.43	31.41	35.78	41.57	45.24	48.15	49.03	57.67	35.38	372.80	19.31	142
55.0	13.96	21.86	25.08	28.04	33.07	39.17	43.16	45.88	46.98	48.68	56.35	37.34	292.69	17.11	134
57.5	12.62	19.84	23.42	26.53	30.31	38.58	43.16	46.98	48.69	49.58	58.28	37.11	379.52	19.48	153
60.0	15.91	21.87	25.74	29.79	35.53	39.89	43.91	48.17	49.51	51.04	58.15	38.81	337.99	18.38	140
62.5	16.98	24.24	27.07	30.64	37.01	42.71	46.46	51.75	52.59	54.15	60.39	40.78	343.74	18.54	133
65.0	16.59	22.36	24.61	30.73	35.01	40.12	46.30	53.05	55.62	57.03	59.96	40.83	404.37	20.11	120
67.5	19.85	28.40	32.13	34.64	39.66	43.14	46.98	54.26	56.18	58.39	72.06	44.56	399.60	19.99	158
70.0	12.29	22.45	24.11	28.94	37.73	42.09	46.27	48.31	51.52	56.36	63.41	40.19	370.34	19.24	143
72.5	23.29	27.85	32.56	33.97	40.75	45.81	49.48	53.05	56.37	58.30	81.71	46.82	441.57	21.01	157
75.0	25.13	30.36	33.74	36.16	42.82	48.90	54.24	57.69	59.90	62.05	77.87	48.51	417.96	20.44	192
77.5	29.42	36.39	39.35	42.28	46.33	52.32	56.84	61.77	63.39	65.63	79.49	51.96	423.84	20.59	194
80.0	28.39	39.26	42.37	46.30	49.59	57.67	59.46	63.53	65.28	68.26	79.55	54.24	403.40	20.08	247
82.5	29.59	44.92	47.88	49.62	53.62	60.17	63.91	69.20	72.21	75.16	85.70	58.42	443.85	21.07	230
85.0	29.72	42.68	47.47	51.74	58.20	65.47	72.03	77.19	80.21	82.68	88.67	62.49	501.72	22.40	264
87.5	35.08	48.10	52.63	55.72	63.10	71.78	77.01	83.17	85.35	87.96	92.55	67.08	494.14	22.23	308
90.0	43.90	58.12	61.52	63.88	74.91	79.58	84.70	88.73	91.11	93.39	97.52	74.29	460.04	21.45	356
92.5	46.04	65.73	70.87	76.46	81.96	88.09	90.97	92.96	94.29	95.52	98.86	79.50	434.87	20.85	375
95.0	53.03	71.50	76.15	80.49	87.94	92.23	94.22	95.93	96.47	97.03	98.61	83.57	348.34	18.66	395
97.5	83.25	92.94	94.71	96.00	97.50	98.67	99.50	100.00	100.00	100.00	100.00	94.16	138.63	11.77	731

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First- through fourth-quartile storms combined; storm duration 0 to 6 hours															
2.5	0	0	0	0	0	0	0	0	0	0	4.96	1.50	25.22	5.02	371
5.0	1.90	3.95	4.29	5.32	8.94	12.61	17.78	20.13	21.05	25.00	35.25	15.27	162.99	12.77	94
7.5	2.25	5.15	6.28	8.49	10.84	14.75	17.59	22.62	28.46	31.95	41.99	18.60	239.09	15.46	112
10.0	4.31	6.67	8.94	12.43	16.72	20.25	26.52	33.33	37.02	42.56	53.93	25.06	347.40	18.64	141
12.5	3.59	12.01	14.31	16.67	22.38	29.31	34.69	37.93	40.78	49.66	61.44	30.89	437.86	20.93	101
15.0	7.51	16.80	18.92	21.56	32.60	35.98	39.47	48.65	52.10	57.88	69.52	37.35	473.89	21.77	97
17.5	9.71	16.67	17.83	20.76	26.83	39.47	47.93	60.38	63.44	66.65	72.84	40.62	605.79	24.61	125
20.0	11.93	19.39	21.87	24.67	31.92	42.75	53.43	63.05	66.26	70.22	81.71	44.15	671.47	25.91	117
22.5	6.55	16.90	18.67	23.40	33.12	43.29	59.97	67.73	74.93	75.86	86.27	46.12	859.12	29.31	132
25.0	8.11	21.62	25.26	32.10	39.31	45.65	58.93	70.97	76.02	78.10	85.20	48.80	768.09	27.71	111
27.5	10.65	23.29	24.68	29.36	41.73	52.06	59.44	67.44	70.14	74.38	83.96	48.85	680.62	26.09	119
30.0	16.79	29.86	34.31	40.00	53.36	60.31	70.15	76.66	82.63	84.35	87.95	56.85	722.60	26.88	101
32.5	14.86	28.33	33.10	36.64	47.55	55.26	67.13	74.84	79.19	82.68	87.94	54.49	713.40	26.71	140
35.0	15.54	42.11	50.33	54.14	61.10	66.87	77.66	84.07	86.81	87.85	92.76	63.85	692.98	26.32	77
37.5	22.73	33.19	37.43	40.02	49.34	62.70	67.97	81.20	84.83	87.80	91.76	59.19	698.98	26.44	96
40.0	26.22	43.32	51.41	57.14	67.13	75.81	81.14	86.28	88.25	89.12	93.33	66.76	710.63	26.66	106
42.5	25.00	38.98	49.08	54.20	64.85	71.18	78.00	87.25	88.75	89.34	94.83	65.97	659.86	25.69	99
45.0	20.99	39.30	47.06	61.32	72.80	78.30	80.46	84.98	89.06	90.63	93.81	67.66	711.40	26.67	107
47.5	21.41	36.67	47.72	58.90	65.25	79.25	82.99	88.16	89.15	90.05	94.86	67.20	727.65	26.97	77
50.0	31.24	44.17	54.01	57.27	69.42	73.91	82.49	86.90	89.70	91.04	94.02	69.03	583.27	24.15	121
52.5	25.35	44.89	54.06	59.28	69.42	78.50	82.80	87.52	90.38	92.36	96.31	69.10	696.20	26.39	86
55.0	41.91	56.28	59.32	62.99	73.86	83.90	87.94	90.97	92.78	93.87	96.20	74.44	497.31	22.30	99
57.5	40.66	55.61	61.79	67.36	75.19	81.67	85.00	87.98	90.58	92.45	96.80	74.35	448.65	21.18	83
60.0	39.08	56.62	65.66	74.25	81.62	85.09	88.08	91.97	93.52	94.26	96.45	76.05	584.48	24.18	100
62.5	38.60	62.25	67.48	71.27	77.18	86.26	88.80	90.45	92.36	93.29	97.21	76.04	557.16	23.60	95
65.0	40.46	64.34	69.57	70.89	79.14	86.61	91.69	93.93	94.62	96.37	97.55	78.09	569.95	23.87	59
67.5	49.21	68.06	69.81	74.01	78.62	85.83	90.80	93.11	94.11	95.04	97.60	79.42	384.39	19.61	130
70.0	31.94	73.87	75.27	78.81	85.18	89.40	93.23	94.32	94.89	95.71	97.90	80.82	511.79	22.62	80
72.5	44.53	71.32	77.59	83.17	87.15	91.67	93.48	94.80	95.33	96.09	97.96	82.51	415.09	20.37	91
75.0	54.07	73.45	77.97	80.11	85.49	90.71	94.41	96.03	96.54	96.96	98.15	84.02	292.07	17.09	83
77.5	68.19	81.74	83.28	84.92	90.10	92.18	93.72	95.45	96.91	97.84	98.85	87.50	178.38	13.36	86
80.0	69.88	84.74	86.14	87.53	90.68	93.15	95.50	96.78	97.09	98.21	99.17	88.25	251.06	15.84	85
82.5	74.27	85.83	87.88	88.92	92.08	94.83	96.59	97.30	97.77	98.31	99.23	89.21	258.11	16.07	91
85.0	77.91	83.58	90.00	93.12	95.12	96.66	97.87	98.23	98.49	98.70	99.10	91.19	215.31	14.67	67
87.5	83.63	90.61	92.85	94.44	95.21	96.70	98.19	98.58	98.72	98.91	99.40	92.46	174.85	13.22	69
90.0	87.30	91.96	92.50	94.56	95.92	96.96	98.25	98.84	99.07	99.16	99.62	93.97	97.40	9.87	99
92.5	90.42	94.25	95.66	96.71	97.50	98.41	98.64	99.17	99.44	99.67	100.00	95.61	66.08	8.13	76
95.0	89.14	95.74	96.63	97.35	97.89	98.50	99.09	99.26	99.35	99.51	100.00	96.95	18.60	4.31	45
97.5	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.89	.63	.80	332

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First- through fourth-quartile storms combined; storm duration 6 to 12 hours															
2.5	0	0	0	0	0	0	1.44	3.80	5.69	8.21	17.69	4.85	77.39	8.80	564
5.0	2.36	3.54	4.56	5.84	8.54	13.14	19.42	24.22	26.68	30.70	44.49	18.57	300.75	17.34	250
7.5	3.15	6.00	8.62	11.13	15.83	22.59	27.72	32.91	37.71	43.39	54.79	25.86	427.45	20.67	228
10.0	4.26	8.83	10.95	13.65	20.98	26.85	33.77	40.46	47.22	54.05	73.21	32.07	606.51	24.63	246
12.5	4.86	10.47	12.22	14.79	21.19	30.76	36.03	44.87	53.37	58.74	79.27	34.55	693.79	26.34	224
15.0	5.40	14.91	17.40	20.50	29.50	34.24	41.65	49.83	56.84	61.71	81.24	38.96	683.04	26.13	220
17.5	7.40	12.49	16.50	20.46	28.00	37.85	46.37	53.64	60.62	63.76	82.38	40.17	716.66	26.77	207
20.0	9.94	16.34	20.45	24.28	31.08	39.40	46.01	61.91	66.84	70.19	86.05	43.75	753.87	27.46	204
22.5	6.78	14.29	15.94	18.56	29.31	39.90	50.21	61.06	66.99	72.61	83.76	42.74	810.22	28.46	199
25.0	10.07	20.85	27.25	30.16	37.32	44.41	54.71	62.19	69.55	73.85	85.39	46.72	723.81	26.90	185
27.5	11.42	19.52	22.37	30.52	35.65	44.84	58.45	65.93	70.69	78.26	88.63	48.17	782.65	27.98	180
30.0	13.02	23.51	31.59	32.62	41.42	48.87	62.07	72.41	75.06	81.94	88.62	51.54	760.93	27.58	190
32.5	11.50	20.54	25.80	32.45	39.15	46.45	60.07	73.01	78.39	81.81	88.47	50.24	834.04	28.88	207
35.0	13.85	26.38	30.24	33.83	42.78	49.32	62.36	74.40	80.10	82.77	89.27	52.84	767.51	27.70	155
37.5	13.00	20.12	26.12	31.57	43.34	47.95	65.72	77.70	83.10	86.35	90.23	52.61	872.90	29.54	156
40.0	17.69	30.49	32.20	35.63	45.53	53.03	66.84	78.52	82.17	85.57	91.20	55.65	763.98	27.64	151
42.5	15.76	28.86	33.24	39.35	47.85	54.72	68.93	76.17	81.74	86.37	91.41	56.40	766.34	27.68	143
45.0	9.42	18.81	24.92	32.78	41.91	57.68	69.51	79.43	81.79	85.24	91.28	53.84	924.54	30.41	144
47.5	12.62	22.96	27.62	33.07	43.84	55.41	66.41	79.81	83.03	87.50	92.92	55.05	905.26	30.09	154
50.0	15.11	29.02	33.88	42.32	54.25	67.26	76.25	80.86	83.16	85.87	92.96	59.80	797.72	28.24	135
52.5	11.93	25.99	29.84	33.59	49.62	58.38	70.85	80.76	83.09	87.13	95.05	56.93	914.08	30.23	163
55.0	25.33	31.59	35.24	41.46	51.77	66.04	75.38	82.44	84.00	86.56	93.26	60.52	725.40	26.93	151
57.5	15.16	31.21	35.80	39.42	49.76	62.01	74.67	82.78	84.31	86.93	92.97	58.78	840.23	28.99	155
60.0	17.08	32.25	36.34	42.99	54.49	63.04	73.90	83.58	84.99	87.91	92.79	60.28	770.27	27.75	153
62.5	26.92	36.19	40.11	47.73	59.07	71.70	79.82	86.35	87.61	89.97	96.15	64.36	716.69	26.77	149
65.0	25.10	44.00	51.33	59.99	69.19	76.51	80.27	84.37	86.77	90.86	95.59	67.59	660.81	25.71	143
67.5	27.82	43.14	47.02	53.45	65.72	74.94	80.87	86.53	88.92	90.91	96.15	67.26	653.69	25.57	183
70.0	22.04	43.25	48.31	52.99	62.52	73.35	81.89	85.80	89.01	90.72	96.76	66.36	722.97	26.89	166
72.5	29.79	49.43	54.96	61.44	69.10	81.53	84.25	89.28	90.21	92.55	96.29	70.74	615.76	24.81	180
75.0	33.33	50.65	56.44	66.20	73.71	81.66	86.14	89.33	91.47	92.61	97.76	72.28	614.43	24.79	171
77.5	38.95	53.62	57.17	63.81	77.60	84.17	88.81	91.76	93.06	93.66	97.17	74.74	528.83	23.00	193
80.0	44.98	54.30	61.33	67.37	75.21	83.55	87.74	91.62	93.05	94.22	97.20	75.75	477.23	21.85	205
82.5	50.14	61.69	69.50	74.98	82.51	88.30	90.62	93.04	94.44	95.66	98.25	79.65	401.97	20.05	187
85.0	52.73	72.69	79.21	80.99	87.76	90.97	92.96	95.31	95.91	97.19	98.57	83.41	350.98	18.73	191
87.5	61.94	81.24	83.93	86.33	89.93	92.89	94.56	95.86	97.08	97.49	98.79	86.71	263.79	16.24	197
90.0	59.46	84.78	88.25	90.06	93.25	94.67	96.06	97.52	97.84	98.13	98.96	87.81	314.21	17.73	199
92.5	73.58	88.67	91.25	92.59	94.48	95.94	97.09	97.99	98.29	98.64	99.54	90.61	210.21	14.50	217
95.0	81.94	92.41	94.49	95.82	96.75	97.54	98.12	98.68	99.06	99.25	99.98	93.06	173.44	13.17	170
97.5	96.78	98.82	99.28	99.71	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.15	51.68	7.19	475

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First- through fourth-quartile storms combined; storm duration 12 to 24 hours															
2.5	0	0	0	0	0	1.45	3.51	5.74	7.83	10.53	18.75	6.22	109.18	10.45	1,245
5.0	2.12	4.41	6.18	7.62	11.90	16.74	19.95	24.65	28.31	33.60	48.55	20.60	353.23	18.79	628
7.5	4.57	7.96	9.40	11.82	19.85	25.94	30.50	36.94	41.52	46.74	58.94	28.45	453.95	21.31	625
10.0	6.76	10.70	13.38	17.14	25.37	34.20	38.32	47.20	51.37	56.58	69.79	35.21	572.32	23.92	605
12.5	8.83	15.44	19.25	21.92	33.33	39.45	44.06	51.94	58.46	65.07	78.32	40.80	648.71	25.47	552
15.0	10.06	18.68	21.85	26.11	37.13	44.28	50.44	55.14	61.83	68.41	82.01	44.17	678.12	26.04	540
17.5	8.89	19.75	25.81	32.60	41.30	49.78	54.61	59.05	63.54	69.92	81.82	46.81	681.01	26.10	513
20.0	9.06	20.70	25.10	38.00	46.74	52.30	58.25	63.08	68.75	74.17	83.51	49.29	699.32	26.44	468
22.5	12.30	22.80	29.25	38.00	51.62	56.07	62.86	67.19	70.80	77.53	86.20	52.21	698.50	26.43	453
25.0	13.48	20.87	25.67	33.21	45.58	56.62	67.78	71.98	74.30	77.32	86.83	52.29	762.24	27.61	442
27.5	13.24	25.69	31.71	37.41	52.36	59.97	71.88	79.34	80.50	82.26	87.52	55.73	791.17	28.13	427
30.0	15.31	27.60	36.29	43.97	53.68	66.18	78.17	82.59	83.91	85.39	89.85	58.97	814.57	28.54	381
32.5	14.15	26.90	32.20	39.46	53.20	60.31	75.09	85.62	87.46	89.44	92.28	58.59	880.47	29.67	379
35.0	13.34	28.57	38.13	44.78	56.92	64.46	74.90	88.31	91.06	93.29	95.41	61.29	907.97	30.13	344
37.5	13.51	26.94	32.33	40.15	53.56	61.47	74.57	81.95	87.91	90.82	95.79	59.11	900.15	30.00	342
40.0	14.47	27.88	34.29	39.96	50.88	59.91	70.73	81.85	86.79	90.62	96.06	58.47	870.24	29.50	348
42.5	14.64	29.72	35.48	42.63	52.43	61.61	71.96	81.25	88.04	92.69	95.97	59.71	871.82	29.53	331
45.0	19.11	33.51	40.40	46.51	55.27	66.26	75.84	82.80	88.65	92.31	96.42	62.11	811.09	28.48	318
47.5	19.00	33.27	39.91	46.26	54.95	65.65	76.07	83.85	89.49	92.86	96.93	62.10	819.34	28.62	336
50.0	19.65	35.11	39.81	44.99	54.88	66.60	73.16	81.26	85.86	90.49	96.51	61.40	762.77	27.62	324
52.5	20.18	32.37	41.39	47.47	56.03	67.46	78.57	86.62	90.68	93.54	97.19	63.19	826.14	28.74	355
55.0	20.66	35.83	42.61	46.12	57.25	66.30	76.34	83.39	87.35	90.57	95.66	62.59	744.75	27.29	312
57.5	25.32	42.70	47.51	51.83	60.57	67.17	76.34	87.03	90.34	92.11	97.00	65.47	667.98	25.85	317
60.0	23.10	41.38	48.43	55.38	66.23	73.67	83.38	89.96	92.16	93.66	97.30	68.17	730.74	27.03	307
62.5	31.30	48.94	54.23	59.16	66.67	76.57	83.28	90.55	93.10	94.59	97.91	70.62	597.45	24.44	299
65.0	32.49	53.28	59.45	63.75	72.58	80.66	85.79	91.29	93.96	95.03	98.30	72.90	603.82	24.57	296
67.5	38.31	51.92	58.19	64.94	74.18	81.00	86.22	92.29	94.13	95.59	98.62	74.14	544.31	23.33	305
70.0	36.87	47.67	57.56	61.51	72.63	78.88	85.13	90.78	93.65	94.83	98.03	72.64	569.65	23.87	273
72.5	39.84	51.99	57.69	63.46	72.86	81.58	86.57	93.31	95.08	96.27	98.67	74.07	552.87	23.51	300
75.0	42.05	55.13	60.15	65.37	76.92	82.57	87.92	93.36	94.96	96.90	99.02	75.73	524.71	22.91	294
77.5	45.84	61.19	66.15	71.84	79.96	85.61	89.70	93.94	95.42	97.11	98.72	78.34	444.06	21.07	327
80.0	48.86	61.59	67.69	71.83	80.24	86.53	90.44	93.86	95.61	96.69	98.67	78.92	441.62	21.01	319
82.5	51.35	67.50	71.95	76.27	84.26	88.22	92.00	95.11	96.73	97.33	99.03	81.05	415.64	20.39	312
85.0	43.90	69.04	72.36	76.17	82.27	87.84	92.31	95.36	96.23	97.51	98.74	80.21	450.15	21.22	339
87.5	52.48	72.68	77.99	81.77	88.02	90.21	93.89	96.92	97.46	98.28	99.52	83.41	395.82	19.90	376
90.0	62.71	79.52	82.53	84.92	90.13	92.19	95.50	97.42	98.05	98.40	99.50	86.33	325.82	18.05	388
92.5	69.54	84.86	87.39	89.34	92.01	93.07	94.92	97.49	98.24	98.68	99.50	87.75	337.68	18.38	357
95.0	63.10	85.51	89.53	92.23	94.27	95.52	97.05	98.12	98.70	99.17	99.78	89.15	292.43	17.10	386
97.5	90.99	96.85	97.67	98.38	99.63	100.00	100.00	100.00	100.00	100.00	100.00	96.58	88.44	9.40	903

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First- through fourth-quartile storms combined; storm duration 24 to 72 hours															
2.5	0	0	0	0	1.40	3.40	5.76	9.07	11.91	15.76	28.11	9.32	219.95	14.83	1,371
5.0	2.48	5.17	6.10	7.87	11.39	15.82	22.20	29.36	33.86	39.82	50.40	22.47	423.32	20.57	659
7.5	3.86	7.37	9.76	11.54	16.23	22.80	31.22	37.85	42.77	48.66	59.61	28.02	495.92	22.27	593
10.0	5.36	10.11	11.79	14.69	19.44	27.97	35.59	48.94	54.68	60.26	70.31	34.06	666.75	25.82	553
12.5	4.89	10.03	11.92	15.36	21.31	31.38	42.03	57.20	64.98	71.38	81.37	38.39	851.04	29.17	484
15.0	7.12	11.71	13.64	17.00	24.21	32.11	44.07	55.57	61.30	69.98	83.20	39.47	814.76	28.54	475
17.5	6.55	12.55	15.23	18.05	25.90	32.29	43.88	56.11	64.34	71.71	85.05	40.43	838.24	28.95	444
20.0	6.06	13.09	16.86	20.87	27.75	35.52	49.25	61.70	69.13	76.92	86.77	42.60	876.27	29.60	398
22.5	4.97	12.23	16.34	19.96	28.15	36.49	46.93	61.02	66.87	75.47	87.24	42.44	889.18	29.82	383
25.0	7.96	12.36	16.87	21.46	28.02	36.70	51.47	61.41	69.21	75.66	86.96	43.39	889.88	29.83	364
27.5	10.53	14.88	18.34	22.39	30.73	35.50	48.25	61.12	68.73	75.67	87.83	43.79	843.08	29.04	380
30.0	11.13	19.50	23.42	28.38	33.01	38.11	49.50	60.64	64.34	70.68	88.53	45.09	754.62	27.47	356
32.5	10.90	17.25	20.33	24.09	34.10	39.16	47.31	55.87	59.89	66.34	84.56	43.09	692.19	26.31	363
35.0	11.42	20.85	25.45	30.14	37.91	44.69	56.09	62.25	64.01	70.97	88.33	47.22	709.58	26.64	378
37.5	12.92	21.53	25.52	29.64	39.29	49.71	59.68	65.26	66.85	70.12	81.29	48.35	670.89	25.90	348
40.0	13.89	22.48	26.02	30.43	39.25	47.24	59.06	67.40	69.33	73.58	82.57	48.82	677.84	26.04	367
42.5	19.32	27.88	29.87	32.47	40.44	46.47	60.09	69.73	71.68	76.49	85.76	51.33	635.06	25.20	363
45.0	17.56	26.99	33.12	37.20	43.99	50.10	61.14	71.58	76.45	80.11	94.52	53.42	736.23	27.13	333
47.5	12.29	21.37	29.26	35.09	43.73	51.53	58.87	69.95	73.83	80.45	88.87	51.14	768.58	27.72	335
50.0	16.30	23.46	29.48	34.41	44.69	56.22	63.41	73.32	77.39	82.18	91.59	54.00	777.11	27.88	358
52.5	21.02	31.13	35.24	38.87	44.57	55.01	62.45	69.63	73.62	77.94	88.89	54.22	648.86	25.47	350
55.0	27.61	39.98	43.52	45.55	49.87	57.64	64.35	74.69	78.57	82.64	90.53	58.67	569.19	23.86	353
57.5	22.82	41.04	46.96	49.37	57.63	63.47	72.09	79.12	81.84	84.58	92.12	61.44	625.80	25.02	385
60.0	28.55	42.43	44.83	48.58	53.13	62.90	72.81	81.11	84.14	86.57	93.96	62.60	585.33	24.19	363
62.5	29.46	44.71	50.93	53.48	60.24	67.06	74.55	83.77	86.74	90.71	95.27	65.36	588.59	24.26	388
65.0	22.51	38.85	45.25	49.33	58.10	66.67	75.21	80.62	86.74	90.38	97.17	63.48	682.69	26.13	369
67.5	26.87	42.58	46.58	53.02	59.75	68.11	76.14	82.33	86.52	88.93	96.71	64.97	611.63	24.73	364
70.0	33.69	45.39	49.10	56.89	63.75	71.78	79.49	89.01	90.79	93.95	98.54	68.81	610.07	24.70	360
72.5	30.21	46.24	50.28	55.45	67.79	76.89	82.28	89.19	91.44	94.09	97.88	69.88	618.77	24.88	366
75.0	34.10	46.01	51.70	56.63	62.55	71.65	80.00	86.85	90.98	94.12	98.54	69.03	576.96	24.02	399
77.5	35.05	51.84	56.38	61.51	66.95	76.08	83.89	89.19	92.70	94.95	97.97	70.91	606.02	24.62	377
80.0	35.20	49.41	57.87	61.08	66.10	73.98	79.81	87.00	89.99	93.31	97.78	70.10	548.15	23.41	396
82.5	44.32	54.88	59.76	64.53	71.25	78.57	84.09	89.52	93.37	94.84	97.99	74.08	450.42	21.22	407
85.0	52.30	63.34	68.31	71.41	77.40	83.09	87.94	91.87	94.30	96.32	98.38	78.32	380.60	19.51	438
87.5	53.94	66.72	72.36	75.32	80.39	85.03	88.70	94.19	95.25	96.71	98.43	80.06	355.19	18.85	458
90.0	56.00	66.10	72.11	76.99	82.69	85.71	89.14	94.46	96.69	97.54	98.95	81.49	302.05	17.38	493
92.5	68.27	78.13	81.61	84.12	88.25	90.63	93.63	96.37	97.38	98.30	99.20	87.20	165.88	12.88	508
95.0	76.86	84.91	87.40	89.71	92.79	94.84	96.18	97.59	98.25	98.80	99.56	90.91	114.82	10.72	516
97.5	90.46	95.11	96.32	97.32	98.53	99.42	100.00	100.00	100.00	100.00	100.00	96.90	32.65	5.71	1,114

Supplement 2. Untrimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First- through fourth-quartile storms combined; storm duration 0 to 72 hours															
2.5	0	0	0	0	0	1.15	3.36	6.13	7.98	11.03	21.27	6.71	144.22	12.01	3,551
5.0	2.29	4.42	5.94	7.28	10.99	15.57	20.20	25.34	29.61	34.68	47.87	20.74	366.21	19.14	1,631
7.5	3.94	7.29	9.03	11.32	16.30	23.46	29.08	35.57	40.51	45.62	58.22	27.20	457.05	21.38	1,558
10.0	5.42	9.69	12.04	14.99	21.10	29.63	36.33	45.11	51.21	56.01	69.00	33.37	599.11	24.48	1,545
12.5	6.17	11.90	14.89	18.23	25.24	34.34	41.56	51.79	58.41	65.18	79.58	38.18	721.36	26.86	1,361
15.0	7.88	14.25	17.82	21.83	30.71	38.51	46.44	54.18	59.57	67.00	81.82	41.14	719.34	26.82	1,332
17.5	7.89	14.71	18.99	23.56	32.25	41.98	50.92	58.46	62.89	69.01	81.94	42.95	743.48	27.27	1,289
20.0	8.81	16.34	21.18	25.00	34.56	45.76	54.34	62.32	67.36	73.83	84.19	45.59	774.45	27.83	1,187
22.5	7.14	16.13	20.48	24.81	36.39	47.95	57.29	65.61	69.60	75.75	85.94	46.70	818.76	28.61	1,167
25.0	9.28	18.42	22.09	26.99	37.08	48.71	58.75	69.75	72.84	76.75	86.22	48.06	813.28	28.52	1,102
27.5	11.47	20.00	24.17	29.94	37.27	50.36	60.46	71.28	77.28	80.05	87.50	49.66	822.18	28.67	1,106
30.0	13.56	23.57	29.47	32.84	41.30	53.13	62.92	74.66	81.01	83.77	88.77	52.58	811.41	28.49	1,028
32.5	11.77	21.15	26.87	32.56	40.31	50.67	59.35	72.31	77.82	83.78	90.70	51.31	829.90	28.81	1,089
35.0	12.50	24.92	30.29	36.97	45.18	56.51	63.35	74.24	80.67	86.85	93.97	54.55	834.32	28.88	954
37.5	13.60	24.84	28.37	33.87	45.18	55.49	65.21	74.19	78.48	83.80	92.42	54.06	814.75	28.54	942
40.0	14.57	26.89	31.61	36.58	46.33	57.23	66.94	75.49	79.66	84.95	93.15	55.29	797.46	28.24	972
42.5	18.73	28.92	32.81	37.81	46.58	57.96	68.43	76.34	79.73	86.18	94.09	56.61	764.96	27.66	936
45.0	16.49	30.16	35.50	40.28	50.02	60.90	71.73	79.51	82.27	87.87	94.95	58.24	817.21	28.59	902
47.5	14.29	26.40	33.94	39.45	50.06	59.56	68.82	79.16	82.98	87.40	95.04	57.26	839.22	28.97	902
50.0	18.41	30.69	36.65	41.83	53.28	63.25	71.82	79.47	83.52	87.24	94.87	59.33	774.63	27.83	938
52.5	20.15	31.09	37.08	41.80	52.60	61.48	71.35	80.57	84.21	88.52	96.15	59.36	789.13	28.09	954
55.0	25.00	38.74	43.16	46.98	55.60	63.41	73.48	81.34	84.95	88.45	94.34	62.02	668.57	25.86	915
57.5	24.22	40.19	45.45	49.53	59.29	67.16	75.08	83.08	85.58	89.14	95.31	63.50	676.86	26.02	940
60.0	25.74	41.77	45.90	50.01	61.70	70.62	79.65	85.51	88.77	91.35	95.93	65.53	686.50	26.20	923
62.5	29.84	45.26	51.53	56.30	63.54	72.36	79.82	87.48	89.82	92.50	96.59	67.98	622.56	24.95	931
65.0	26.76	44.27	51.40	57.76	66.69	74.53	80.79	87.43	90.86	93.52	97.39	68.37	668.20	25.85	867
67.5	33.47	47.03	53.14	58.21	68.58	76.39	82.24	88.29	91.51	93.52	97.38	70.16	596.28	24.42	982
70.0	33.62	46.88	53.76	60.00	69.29	77.39	83.87	89.19	92.40	94.33	97.96	70.63	625.41	25.01	879
72.5	33.17	49.89	55.46	61.47	72.70	81.05	86.16	90.87	93.50	95.12	97.98	72.61	591.09	24.31	937
75.0	35.87	51.77	56.86	61.19	71.84	79.93	85.35	90.88	93.40	95.65	98.31	73.01	562.22	23.71	947
77.5	39.80	56.16	61.78	65.63	76.30	83.76	88.42	92.69	94.00	95.93	98.46	75.58	523.05	22.87	983
80.0	41.87	58.31	62.46	66.10	74.82	82.61	87.58	92.12	93.95	95.88	98.33	75.59	503.69	22.44	1,005
82.5	48.72	61.63	67.24	71.47	80.00	85.71	89.99	93.85	95.49	96.87	98.54	78.69	433.57	20.82	997
85.0	51.40	67.52	72.20	76.27	82.09	87.71	91.66	94.91	96.12	97.28	98.67	80.71	398.15	19.95	1,035
87.5	54.71	72.40	76.49	80.41	86.02	89.69	93.28	95.68	97.12	97.77	99.15	83.17	353.09	18.79	1,100
90.0	60.25	76.27	80.24	83.03	87.55	91.57	94.85	97.08	97.75	98.22	99.25	85.20	308.54	17.57	1,179
92.5	70.82	82.68	85.93	88.27	91.36	93.51	95.69	97.53	98.23	98.67	99.51	88.56	225.66	15.02	1,158
95.0	75.25	87.08	89.51	91.73	94.28	95.79	97.23	98.21	98.67	99.10	99.67	90.87	184.49	13.58	1,117
97.5	92.49	97.04	97.98	98.69	99.65	100.00	100.00	100.00	100.00	100.00	100.00	97.36	51.06	7.15	2,824

Supplement 3. Trimmed percentiles and statistics for empirical hyetograph analysis, 1959–86.

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First-quartile storms; storm duration 0 to 6 hours															
2.5	0	0	0	0	0	0	0	0	0	3.80	8.22	2.71	53.08	7.29	224
5.0	4.07	7.14	9.02	10.34	14.31	18.28	20.31	23.61	25.69	31.61	39.89	19.85	192.88	13.89	75
7.5	5.05	10.00	11.40	14.23	16.35	19.32	26.17	32.59	35.21	38.70	55.00	24.51	285.13	16.89	79
10.0	11.58	19.16	21.37	23.86	28.48	33.33	37.40	45.73	47.52	53.19	62.60	35.44	332.84	18.24	95
12.5	14.51	23.42	27.60	29.50	34.63	36.54	40.66	51.59	59.59	61.26	68.24	40.98	395.92	19.90	73
15.0	18.98	30.61	33.86	35.84	38.76	42.94	50.38	59.43	61.65	65.56	74.59	46.48	409.83	20.24	78
17.5	19.65	33.13	38.87	41.37	47.83	54.88	63.08	67.43	71.44	72.56	77.68	52.83	465.06	21.57	93
20.0	32.17	46.53	51.32	52.45	58.62	63.46	67.34	73.70	76.37	80.33	83.95	61.28	387.23	19.68	76
22.5	36.77	46.22	52.95	59.18	63.49	69.60	75.60	78.69	81.48	84.83	90.54	66.48	385.12	19.62	81
25.0	37.75	45.21	50.16	56.14	62.89	70.98	77.07	78.63	81.48	83.01	88.84	65.71	407.19	20.18	72
27.5	46.93	53.62	58.21	59.93	63.56	68.37	73.94	78.91	79.65	82.47	89.69	67.91	271.39	16.47	74
30.0	53.49	60.89	63.76	69.30	74.32	76.96	82.40	85.36	85.93	86.71	91.42	75.06	204.92	14.31	68
32.5	44.55	55.46	63.20	68.03	72.02	77.60	81.38	84.21	85.85	87.71	91.88	71.75	394.10	19.85	79
35.0	56.88	61.54	65.26	66.49	76.80	80.21	86.08	87.52	88.22	90.06	95.64	77.58	201.15	14.18	54
37.5	44.56	62.76	65.83	70.23	78.04	83.75	87.14	89.51	90.71	92.30	94.77	76.22	434.73	20.85	57
40.0	69.88	78.49	79.76	80.34	82.21	85.45	88.55	91.88	92.81	93.10	94.93	84.23	101.82	10.09	66
42.5	57.46	67.05	70.31	76.08	80.17	85.51	88.80	89.99	92.74	93.71	96.54	80.34	254.88	15.97	60
45.0	49.99	68.74	75.80	79.12	81.05	86.42	90.53	92.14	92.91	94.00	97.09	81.13	276.21	16.62	60
47.5	73.61	80.17	80.88	82.41	84.86	88.35	89.35	90.97	91.77	94.26	97.13	86.15	76.05	8.72	41
50.0	66.12	71.81	74.98	76.86	85.00	87.20	90.88	93.52	93.80	94.16	96.01	83.21	188.36	13.72	62
52.5	68.15	77.34	79.97	81.43	82.99	88.01	91.26	93.01	93.98	96.09	98.24	84.01	274.06	16.55	46
55.0	71.23	77.97	81.14	83.92	87.08	91.45	93.55	94.26	96.00	96.53	98.84	86.50	182.96	13.53	48
57.5	72.04	78.07	81.07	83.90	85.65	87.88	91.35	93.90	94.50	95.69	98.53	85.90	150.88	12.28	41
60.0	75.09	83.37	86.91	87.93	91.69	93.58	94.26	95.50	95.96	96.68	98.35	88.36	243.56	15.61	47
62.5	70.38	81.20	87.73	88.46	88.98	92.30	93.24	94.56	96.21	97.10	99.53	87.69	226.01	15.03	44
65.0	86.23	89.79	90.00	91.84	93.72	94.56	96.35	96.74	97.00	97.74	99.34	93.91	17.98	4.24	27
67.5	67.24	73.70	77.54	80.34	88.75	91.75	93.63	95.02	96.22	96.93	98.40	85.27	255.08	15.97	63
70.0	79.55	88.89	91.76	93.16	93.91	94.38	95.28	95.83	96.79	97.57	98.75	92.67	43.37	6.59	29
72.5	76.52	89.85	91.04	91.91	93.91	94.78	95.30	96.88	97.54	97.82	99.20	90.48	173.06	13.16	47
75.0	73.47	80.00	90.32	92.20	94.62	95.80	96.50	96.61	97.08	97.40	99.76	90.70	126.93	11.27	39
77.5	78.20	89.11	90.73	92.61	93.72	94.85	96.00	97.86	98.21	98.53	99.31	91.70	117.63	10.85	37
80.0	82.56	91.81	93.93	95.12	95.72	96.97	97.33	98.38	98.74	99.09	99.61	94.25	53.16	7.29	38
82.5	85.36	90.06	92.25	94.83	96.38	96.91	97.51	98.30	98.42	98.65	100.00	93.21	117.05	10.82	41
85.0	81.34	87.01	94.81	95.13	96.38	97.02	97.82	98.57	98.73	98.98	99.92	94.33	45.88	6.77	30
87.5	91.56	94.71	96.36	96.50	97.58	98.13	98.57	98.87	98.93	99.24	99.94	97.04	8.64	2.94	31
90.0	88.78	94.02	94.79	95.66	96.63	98.26	98.86	99.15	99.19	99.25	100.00	96.54	13.63	3.69	44
92.5	93.30	96.33	97.46	97.51	98.58	98.78	99.37	99.76	100.00	100.00	100.00	97.22	35.51	5.96	32
95.0	90.01	96.11	97.15	97.26	97.44	98.27	98.71	99.12	99.14	99.50	100.00	97.17	13.10	3.62	20
97.5	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.98	.01	.12	179

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First-quartile storms; storm duration 6 to 12 hours															
2.5	0	0	0	0	0	1.15	4.49	8.06	11.62	13.57	23.95	7.15	114.25	10.69	333
5.0	4.95	8.34	10.23	13.58	18.50	21.81	27.11	33.01	40.14	44.00	53.46	26.40	360.89	19.00	163
7.5	10.73	15.84	18.47	21.24	27.63	30.44	35.85	43.42	49.59	52.96	65.88	34.48	413.71	20.34	158
10.0	13.25	22.61	26.07	28.31	35.18	40.45	51.87	57.25	61.75	67.96	82.55	44.63	573.68	23.95	166
12.5	15.18	26.45	31.36	32.67	37.63	44.42	53.80	62.19	68.23	77.72	86.36	48.65	629.79	25.10	138
15.0	21.75	33.66	37.97	39.73	45.28	51.50	58.93	66.26	71.07	78.41	88.46	54.21	538.94	23.22	141
17.5	23.42	36.49	41.22	43.72	48.44	53.35	59.85	64.98	71.03	75.16	87.76	54.91	500.08	22.36	134
20.0	30.66	42.18	45.58	48.54	59.08	65.33	69.13	74.00	79.62	85.06	95.48	62.52	529.31	23.01	119
22.5	27.45	41.66	45.83	48.50	55.95	62.91	70.58	76.00	80.07	82.68	94.04	61.46	543.30	23.31	110
25.0	33.63	50.21	53.37	55.88	59.91	67.22	72.94	77.51	81.88	83.27	89.12	65.07	435.93	20.88	111
27.5	46.97	53.90	55.69	59.72	65.03	69.05	74.08	82.28	85.45	87.62	95.56	69.37	382.29	19.55	107
30.0	46.07	52.13	55.56	59.90	67.07	73.07	76.53	84.00	86.05	88.35	94.52	69.94	395.48	19.89	111
32.5	48.28	55.96	60.75	66.06	73.01	76.91	81.39	83.28	85.41	86.27	91.87	72.84	305.37	17.47	108
35.0	50.84	57.81	63.31	66.43	73.90	79.12	81.67	85.22	86.42	87.71	96.92	73.95	361.17	19.00	81
37.5	52.52	65.62	67.48	70.14	77.11	81.70	84.77	87.29	88.09	89.72	95.46	76.75	307.89	17.55	80
40.0	53.76	59.46	69.01	72.31	76.99	81.13	84.87	89.57	90.07	91.20	96.88	78.38	224.13	14.97	75
42.5	59.88	68.83	71.60	73.41	77.44	81.74	85.41	89.70	91.09	91.31	95.34	79.48	191.28	13.83	73
45.0	59.26	69.75	74.60	76.72	78.85	82.97	85.96	90.10	91.22	91.71	97.27	80.37	212.47	14.58	72
47.5	54.20	66.50	75.37	77.50	81.04	84.58	89.82	92.08	92.44	93.03	97.27	79.68	370.48	19.25	70
50.0	54.28	62.96	70.61	75.05	78.99	80.91	84.00	89.04	89.89	91.69	95.24	77.13	379.90	19.49	74
52.5	53.79	75.01	77.79	78.56	82.71	85.30	89.69	92.22	94.26	96.30	98.83	80.98	427.91	20.69	72
55.0	50.80	67.04	74.61	77.28	80.66	83.46	87.33	91.93	92.68	94.99	98.07	78.90	403.09	20.08	70
57.5	54.20	75.42	79.84	80.83	83.78	86.50	88.67	91.01	92.86	97.59	98.92	81.54	395.55	19.89	62
60.0	62.17	72.54	81.37	82.70	83.84	85.71	90.12	92.81	94.83	95.45	98.25	83.68	203.78	14.28	59
62.5	51.50	76.37	78.14	82.35	85.74	89.47	92.44	95.17	96.50	97.98	99.25	83.55	354.98	18.84	61
65.0	70.71	77.20	79.38	81.44	82.71	85.33	90.25	93.22	96.23	98.95	100.00	84.74	230.23	15.17	48
67.5	54.68	74.93	77.24	79.79	84.14	86.45	89.89	93.15	96.04	96.73	98.94	82.28	320.71	17.91	74
70.0	53.67	71.00	79.02	82.26	84.35	89.74	91.92	95.19	96.88	97.66	100.00	82.93	379.07	19.47	62
72.5	63.05	80.44	82.19	83.67	87.25	89.59	93.00	94.77	97.32	98.17	99.51	86.05	239.21	15.47	58
75.0	71.43	80.89	82.40	85.25	87.85	90.67	93.23	97.74	98.42	99.27	100.00	86.83	254.10	15.94	60
77.5	55.50	78.54	82.71	83.59	86.58	89.70	92.81	94.22	97.09	98.26	99.36	84.55	312.04	17.66	67
80.0	61.97	82.71	83.94	87.39	91.02	92.24	94.23	96.14	97.60	98.69	100.00	85.50	414.31	20.35	64
82.5	45.94	77.72	81.88	83.36	90.34	92.63	94.56	97.07	98.42	98.53	99.75	84.33	433.81	20.83	62
85.0	52.47	81.15	82.05	86.41	90.96	94.55	96.04	98.07	98.55	98.80	99.57	86.45	335.48	18.32	66
87.5	69.58	86.36	88.50	89.50	94.26	95.57	97.17	98.05	98.85	99.12	100.00	90.11	228.03	15.10	67
90.0	72.33	88.21	89.07	91.76	93.89	95.57	97.67	98.37	98.51	98.91	100.00	91.14	166.90	12.92	68
92.5	84.11	89.62	91.47	92.83	94.78	96.42	97.35	98.32	98.62	98.98	99.51	93.32	74.36	8.62	74
95.0	90.12	93.41	95.24	95.81	97.47	98.03	98.58	99.15	99.32	99.60	100.00	96.09	30.19	5.49	49
97.5	98.09	99.62	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.21	7.46	2.73	207

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First-quartile storms; storm duration 12 to 24 hours															
2.5	0	0	0	0.46	2.14	4.48	6.93	10.18	12.39	15.09	24.53	8.80	143.67	11.99	768
5.0	6.07	11.82	14.09	15.77	18.84	22.10	26.62	32.99	35.62	40.26	54.10	26.87	366.17	19.14	436
7.5	9.44	17.47	22.77	25.25	28.68	32.28	38.58	45.48	49.37	54.15	61.88	35.94	406.68	20.17	470
10.0	15.10	24.21	29.56	32.70	36.50	41.58	50.00	55.75	60.99	64.71	73.75	44.59	478.22	21.87	440
12.5	20.06	27.01	33.77	38.05	41.65	45.37	52.31	62.23	67.27	74.45	82.38	49.61	537.22	23.18	413
15.0	25.03	33.25	39.91	42.97	48.89	52.30	56.84	67.62	73.81	78.79	86.52	54.69	497.47	22.30	400
17.5	32.88	42.20	47.11	50.08	53.50	56.55	61.73	69.50	76.43	80.11	86.87	58.77	433.12	20.81	370
20.0	43.75	49.40	51.39	52.47	57.19	59.66	64.26	74.10	77.49	80.38	88.68	62.79	331.79	18.22	328
22.5	48.46	52.43	53.44	56.09	61.61	65.26	68.56	75.25	79.19	80.93	88.49	65.60	294.77	17.17	321
25.0	49.46	54.17	57.81	61.55	68.91	71.47	74.29	78.16	80.25	83.52	90.02	69.29	284.10	16.86	274
27.5	48.05	55.64	58.89	63.46	73.26	78.08	80.19	82.32	83.50	85.34	90.57	71.73	311.77	17.66	277
30.0	48.94	58.53	63.80	68.80	78.47	82.05	83.51	85.43	86.30	87.87	92.39	74.47	345.25	18.58	236
32.5	48.93	56.18	60.05	68.43	76.69	84.46	87.42	90.16	90.83	91.56	93.56	75.51	410.25	20.25	232
35.0	50.62	58.83	61.29	69.61	77.03	87.23	90.83	93.52	94.12	94.96	95.99	77.73	433.33	20.82	207
37.5	50.71	57.75	61.18	64.98	75.44	82.00	89.00	92.07	93.95	95.14	96.78	76.55	422.21	20.55	186
40.0	49.80	58.32	61.06	64.50	75.12	79.83	87.66	92.21	93.70	95.83	97.52	75.86	457.54	21.39	178
42.5	53.34	59.27	62.04	67.46	75.83	83.09	91.42	94.16	94.89	95.51	97.72	78.57	327.87	18.11	155
45.0	58.54	64.46	70.50	73.69	79.89	86.71	91.56	94.79	96.15	96.45	98.11	81.95	231.57	15.22	138
47.5	53.16	60.61	66.99	71.72	78.11	83.77	90.19	93.66	94.57	96.15	97.87	79.56	307.33	17.53	156
50.0	56.72	67.22	71.44	74.29	80.80	86.43	90.80	94.50	95.32	96.26	98.22	81.37	298.01	17.26	124
52.5	59.81	67.59	73.00	79.85	86.47	90.94	94.00	95.87	96.26	96.77	98.77	84.38	238.43	15.44	139
55.0	59.67	71.22	74.30	78.58	82.77	89.10	91.67	94.36	96.05	96.89	98.09	83.54	227.05	15.07	92
57.5	60.47	65.01	69.77	73.11	80.45	90.03	91.97	94.72	96.39	97.25	98.23	82.80	233.71	15.29	117
60.0	60.78	71.68	74.07	82.94	88.38	92.16	94.11	95.71	96.41	97.25	98.75	85.32	221.61	14.89	99
62.5	61.33	70.00	73.47	78.45	82.97	87.32	92.35	94.46	95.24	97.63	98.98	83.64	207.17	14.39	104
65.0	68.38	73.93	79.23	81.25	84.05	91.80	94.21	96.15	96.57	97.07	99.17	86.26	155.61	12.47	106
67.5	63.49	76.89	81.62	84.04	87.87	93.31	94.75	96.65	97.28	98.11	99.70	87.27	169.45	13.02	104
70.0	61.19	70.55	73.90	76.41	82.07	86.99	91.65	94.54	95.13	97.29	99.76	83.11	240.55	15.51	90
72.5	61.24	69.23	74.40	78.75	85.91	92.92	95.90	97.35	97.99	98.65	100.00	85.69	219.07	14.80	100
75.0	63.99	71.20	74.34	77.54	81.75	88.86	92.62	95.15	96.51	98.01	99.72	84.63	179.51	13.40	98
77.5	65.63	73.42	78.33	81.64	88.32	90.90	94.30	97.05	97.47	98.17	99.10	86.24	207.81	14.42	128
80.0	68.12	75.00	78.76	82.61	88.14	92.45	95.10	96.22	97.12	97.70	98.84	87.08	162.80	12.76	114
82.5	68.35	77.78	81.04	84.11	91.27	93.95	95.94	97.33	97.81	98.28	99.59	88.60	147.55	12.15	114
85.0	72.36	79.62	81.22	82.40	85.17	90.84	94.70	96.32	97.18	97.91	98.51	88.13	97.68	9.88	119
87.5	80.30	86.98	88.02	88.62	90.22	93.69	95.39	97.41	97.93	98.62	99.44	91.44	63.48	7.97	153
90.0	84.94	90.91	91.56	91.73	93.58	96.79	97.70	98.18	98.56	99.10	99.54	93.96	42.91	6.55	131
92.5	83.03	91.00	92.19	92.19	93.01	94.40	96.36	97.91	98.26	98.54	99.32	93.29	45.07	6.71	119
95.0	84.88	89.43	91.53	93.75	94.79	95.60	97.36	98.23	98.71	98.98	99.77	93.13	98.65	9.93	121
97.5	93.68	97.50	98.19	99.13	100.00	100.00	100.00	100.00	100.00	100.00	100.00	97.70	38.43	6.20	379

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First-quartile storms; storm duration 24 to 72 hours															
2.5	0	0	0.36	1.95	4.28	7.45	12.38	19.70	23.35	28.55	39.39	14.79	327.78	18.10	568
5.0	7.44	11.84	14.46	16.97	21.49	26.18	35.84	42.95	45.65	49.79	62.15	32.20	500.00	22.36	280
7.5	11.60	21.24	23.33	25.20	31.47	36.42	42.77	50.37	52.84	59.39	70.05	39.85	524.75	22.91	251
10.0	15.40	23.91	29.33	32.11	36.35	42.50	50.38	58.63	65.03	68.89	84.89	46.26	632.28	25.15	235
12.5	16.57	28.97	33.20	35.48	40.90	50.45	56.47	69.01	73.38	79.01	90.71	51.85	687.45	26.22	219
15.0	23.01	33.94	35.48	40.93	47.32	52.56	59.51	69.58	73.64	80.44	95.93	55.30	646.47	25.43	203
17.5	24.10	30.50	34.12	40.93	50.03	56.11	63.33	71.27	74.85	79.85	96.09	56.73	655.58	25.60	180
20.0	24.84	34.79	36.69	43.54	51.97	61.73	72.90	76.75	79.89	82.88	96.60	59.91	659.61	25.68	169
22.5	33.21	38.97	44.67	46.10	51.74	60.21	70.29	78.65	81.43	85.61	96.24	61.88	547.62	23.40	165
25.0	37.61	47.00	51.31	54.41	58.41	63.81	74.34	81.42	84.19	86.34	97.62	66.27	479.13	21.89	127
27.5	34.86	46.92	50.42	52.91	60.53	63.67	75.67	85.64	87.64	91.21	99.59	67.61	508.75	22.56	112
30.0	29.47	36.81	38.40	45.50	56.23	62.77	67.67	77.57	85.29	90.67	96.95	62.02	607.98	24.66	119
32.5	38.89	47.39	48.73	52.14	55.35	61.70	66.53	78.85	83.33	90.13	98.21	64.80	446.48	21.13	115
35.0	42.11	50.61	54.32	57.73	61.35	63.00	64.40	75.00	80.31	87.69	97.74	66.20	376.15	19.39	129
37.5	48.68	57.88	61.32	62.65	64.71	66.00	67.52	75.77	81.15	85.81	95.97	69.05	296.01	17.20	117
40.0	54.66	64.01	65.88	67.12	68.05	69.43	73.30	81.99	85.60	89.53	97.45	73.55	223.23	14.94	107
42.5	60.89	66.09	67.88	69.24	70.19	75.08	77.31	85.78	89.97	94.49	98.01	76.54	218.84	14.79	93
45.0	58.64	66.95	68.82	70.00	76.15	79.65	84.34	91.14	94.13	96.30	99.58	78.81	295.63	17.19	84
47.5	56.69	67.18	68.92	69.99	73.63	82.04	84.97	94.86	96.27	96.96	99.32	79.67	300.24	17.33	76
50.0	59.04	69.94	70.13	71.32	74.92	81.36	88.06	91.65	95.48	96.65	99.34	80.70	229.23	15.14	85
52.5	59.29	64.56	68.36	69.97	72.31	80.60	85.59	89.79	92.48	96.40	99.45	79.08	235.34	15.34	78
55.0	57.86	64.63	68.02	71.25	76.36	84.58	88.90	93.13	94.76	96.40	99.59	80.34	256.75	16.02	72
57.5	62.60	68.49	69.94	72.10	76.90	83.99	87.93	91.83	93.17	96.70	99.35	81.35	197.99	14.07	71
60.0	51.34	62.26	62.93	66.12	71.06	77.40	83.44	92.43	95.64	96.21	100.00	77.71	281.23	16.77	63
62.5	57.15	62.93	65.25	68.98	73.00	76.06	82.47	90.63	92.25	95.03	99.89	77.01	322.24	17.95	83
65.0	61.51	65.32	68.25	72.88	77.33	85.39	90.93	95.39	96.74	97.21	100.00	80.88	318.80	17.85	67
67.5	51.35	66.10	66.32	74.29	77.55	81.39	86.81	89.34	94.78	96.74	99.88	79.56	293.04	17.12	52
70.0	63.10	69.86	70.25	74.76	79.72	85.93	90.78	93.72	96.74	97.79	99.57	82.20	260.37	16.14	66
72.5	54.53	73.59	76.71	77.67	82.26	86.84	91.69	93.78	94.94	96.05	99.55	83.29	222.96	14.93	62
75.0	55.70	66.68	70.44	74.27	79.28	83.68	87.41	93.50	96.70	98.05	100.00	81.30	243.12	15.59	68
77.5	66.49	72.30	77.18	77.38	84.41	89.58	92.70	95.27	97.21	98.20	99.31	85.27	172.47	13.13	62
80.0	68.00	75.93	77.38	78.04	86.14	90.67	93.07	93.99	97.10	98.50	99.70	86.58	134.19	11.58	57
82.5	65.82	73.48	75.07	78.33	83.83	89.18	93.87	94.64	95.62	97.00	99.16	85.09	176.11	13.27	71
85.0	69.91	77.31	80.30	82.18	88.40	93.53	95.39	97.46	98.02	98.63	99.72	88.39	130.41	11.42	77
87.5	73.25	78.31	79.36	80.38	81.79	85.59	91.97	95.45	96.88	98.32	99.30	86.41	112.38	10.60	93
90.0	74.35	80.49	82.16	82.46	83.44	86.92	92.15	96.40	97.91	98.60	99.65	87.46	107.96	10.39	109
92.5	80.72	83.00	83.64	85.04	88.91	91.59	95.91	97.40	98.52	98.78	99.26	90.30	85.26	9.23	105
95.0	83.64	86.63	89.13	91.10	94.00	96.51	97.86	98.85	99.09	99.31	99.80	93.08	71.09	8.43	101
97.5	90.58	95.67	97.29	98.40	99.55	100.00	100.00	100.00	100.00	100.00	100.00	97.49	21.96	4.69	281

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First-quartile storms; storm duration 0 to 72 hours															
2.5	0	0	0	0	1.01	3.86	6.66	10.75	13.29	17.13	29.28	9.59	198.02	14.07	1,893
5.0	6.04	10.98	13.41	15.33	19.01	22.53	27.45	34.91	39.52	44.76	55.17	27.80	402.30	20.06	954
7.5	9.49	16.54	20.47	23.58	28.07	32.28	37.81	45.61	50.00	53.70	64.09	35.78	443.84	21.07	958
10.0	14.76	23.36	27.14	31.04	35.51	40.50	48.76	55.02	60.36	65.19	75.91	44.09	528.01	22.98	936
12.5	18.23	27.30	32.32	35.27	40.15	45.33	53.47	61.93	67.85	74.49	85.12	49.29	586.97	24.23	843
15.0	24.32	33.38	37.26	40.77	47.04	51.81	57.01	66.48	71.85	77.93	87.97	53.98	539.08	23.22	822
17.5	26.34	37.35	42.08	46.30	51.55	56.19	62.04	69.06	73.64	77.93	88.35	56.92	504.37	22.46	777
20.0	33.43	45.27	48.08	51.48	56.74	61.70	67.84	75.01	78.20	81.51	90.68	61.88	453.35	21.29	692
22.5	36.36	47.85	51.35	53.11	59.65	64.62	70.17	76.69	80.00	82.03	90.74	64.13	411.66	20.29	677
25.0	42.31	52.26	54.39	57.54	63.53	70.62	74.17	78.78	81.51	84.31	90.76	67.39	373.88	19.34	584
27.5	45.35	53.61	56.82	60.00	66.12	74.08	79.01	82.07	83.97	86.72	92.11	69.98	361.68	19.02	570
30.0	41.13	53.23	57.32	61.65	69.44	75.92	82.02	84.83	86.05	88.17	93.49	70.83	421.97	20.54	534
32.5	46.16	53.71	56.48	60.46	70.00	77.31	82.63	87.09	88.78	90.54	93.27	72.11	411.12	20.28	534
35.0	49.30	57.54	59.84	62.37	68.08	76.71	84.04	89.11	92.11	93.78	96.07	73.90	402.88	20.07	471
37.5	49.72	59.76	62.65	65.03	69.90	77.25	83.93	89.14	90.92	92.61	96.25	74.55	380.48	19.51	440
40.0	53.77	62.69	66.45	68.02	74.53	79.69	85.41	89.69	91.96	93.61	97.23	77.02	314.45	17.73	426
42.5	56.30	64.38	67.73	69.83	75.44	79.90	86.80	91.31	93.58	94.53	97.23	78.53	265.25	16.29	381
45.0	59.05	68.04	70.16	73.87	79.10	83.24	89.37	92.11	94.18	95.68	98.10	80.74	251.95	15.87	354
47.5	54.56	66.73	70.03	73.94	80.10	84.00	89.47	92.69	94.29	95.65	98.11	80.40	295.49	17.19	343
50.0	58.37	69.83	71.35	73.93	79.71	84.80	88.83	92.88	94.22	95.44	97.83	80.63	282.95	16.82	345
52.5	59.77	69.96	72.31	77.35	82.36	87.26	91.21	94.26	95.86	96.47	98.85	82.37	288.31	16.98	335
55.0	58.79	69.63	73.86	76.80	81.54	86.11	91.12	94.02	94.82	96.21	98.63	82.07	278.12	16.68	282
57.5	61.30	69.94	72.57	76.61	82.67	87.00	90.47	93.28	95.46	96.98	98.72	82.62	249.97	15.81	291
60.0	60.69	70.36	73.76	79.54	83.86	89.81	92.95	94.74	95.69	96.65	98.75	83.70	248.75	15.77	268
62.5	60.82	68.94	73.05	76.55	82.66	87.35	91.60	94.14	94.91	96.82	99.23	82.35	286.91	16.94	292
65.0	64.78	74.26	77.36	80.98	84.63	89.71	93.57	96.10	96.64	97.28	99.52	85.35	212.95	14.59	248
67.5	63.01	72.84	77.06	79.75	84.93	89.07	92.98	95.02	96.62	97.32	99.23	84.21	256.34	16.01	293
70.0	61.19	72.05	76.39	78.81	84.21	89.06	93.12	94.97	96.50	97.47	99.55	83.94	267.72	16.36	247
72.5	61.60	76.18	79.58	82.23	87.90	91.80	94.65	96.11	97.21	97.95	99.55	86.06	221.52	14.88	267
75.0	63.18	73.10	76.82	79.55	84.71	89.49	93.34	96.40	97.33	98.04	100.00	85.17	214.07	14.63	265
77.5	65.76	76.81	79.62	83.12	88.21	91.12	93.84	96.68	97.33	98.20	99.25	86.34	217.36	14.74	294
80.0	68.72	77.03	81.96	84.62	90.60	93.07	95.14	96.92	97.49	98.22	99.40	87.60	208.05	14.42	273
82.5	67.01	77.72	81.04	84.51	90.55	93.79	95.50	97.28	97.75	98.31	99.52	87.47	220.59	14.85	288
85.0	71.88	80.44	81.85	83.11	88.60	93.60	96.00	97.35	97.99	98.38	99.29	88.45	159.23	12.62	292
87.5	77.57	82.01	85.72	88.00	90.18	94.27	96.19	97.77	98.31	98.78	99.50	90.33	112.58	10.61	344
90.0	79.79	83.98	87.89	89.58	92.21	95.51	97.36	98.28	98.64	99.08	99.64	91.73	93.80	9.68	352
92.5	82.46	86.89	89.74	91.71	93.24	95.40	97.17	98.29	98.64	98.91	99.51	92.73	67.53	8.22	330
95.0	84.88	89.87	91.57	93.69	95.33	97.13	97.91	98.71	99.04	99.31	99.82	93.89	73.69	8.58	291
97.5	95.04	98.46	99.26	99.82	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.33	22.25	4.72	1,046

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Second-quartile storms; storm duration 0 to 6 hours															
2.5	0	0	0	0	0	0	0	0	0	0	0	0.24	1.34	1.16	103
5.0	.67	1.10	1.16	1.66	1.94	2.45	3.45	4.47	5.52	6.44	9.95	3.68	9.62	3.10	15
7.5	.78	1.78	2.59	3.80	5.04	5.51	6.43	8.77	9.47	10.16	17.34	6.74	25.23	5.02	18
10.0	1.55	2.88	4.49	5.35	6.23	7.41	9.28	13.22	15.24	17.57	20.70	10.47	92.61	9.62	41
12.5	1.56	2.20	2.76	4.92	6.33	8.51	10.23	13.06	14.32	17.66	23.39	9.88	53.53	7.32	22
15.0	5.65	6.64	6.99	7.63	9.52	10.57	10.98	15.95	16.50	17.00	34.40	13.09	70.01	8.37	19
17.5	4.28	7.46	7.61	10.05	12.75	13.59	17.28	20.44	21.22	23.17	25.95	14.79	58.42	7.64	26
20.0	6.31	13.01	14.58	15.98	17.54	20.85	23.58	25.87	26.40	26.75	36.44	21.00	105.43	10.27	34
22.5	3.49	7.05	7.63	8.06	15.90	18.64	23.39	26.93	29.68	30.24	53.98	22.27	310.04	17.61	35
25.0	4.47	8.16	8.37	18.65	24.64	29.93	33.87	37.68	41.90	43.95	52.71	27.96	264.29	16.26	26
27.5	7.41	10.51	15.28	18.90	22.05	26.85	30.44	39.11	41.73	48.09	54.03	29.14	289.21	17.01	43
30.0	6.88	16.76	22.95	27.85	30.40	34.31	41.89	47.59	52.57	56.49	65.39	36.40	365.12	19.11	28
32.5	18.54	31.84	34.34	35.51	42.05	47.15	50.59	59.63	62.72	65.39	72.98	46.82	368.93	19.21	45
35.0	7.63	15.39	28.37	36.74	38.37	46.43	54.14	54.72	64.95	66.87	73.85	43.87	489.23	22.12	19
37.5	22.55	34.07	37.88	39.40	43.63	48.78	56.49	62.71	67.37	68.79	78.48	50.00	399.56	19.99	33
40.0	7.80	42.18	43.91	48.88	51.74	56.96	63.42	67.05	67.90	71.76	82.54	53.99	525.94	22.93	34
42.5	25.85	41.33	48.56	49.56	54.92	58.04	69.20	72.18	73.77	78.10	86.33	58.76	425.45	20.63	28
45.0	16.27	41.31	45.52	54.05	68.63	75.76	77.62	79.93	80.26	80.66	85.42	63.22	618.36	24.87	41
47.5	21.04	45.72	53.94	56.55	60.78	65.78	71.92	79.39	82.47	83.90	91.06	63.29	558.70	23.64	26
50.0	56.08	59.59	61.31	62.95	70.67	74.26	82.94	85.34	86.06	86.38	89.79	73.67	199.03	14.11	37
52.5	46.95	59.47	62.70	65.90	69.93	77.42	82.80	84.96	86.77	88.33	92.77	72.47	389.88	19.75	25
55.0	41.40	55.54	56.81	60.20	67.17	73.24	80.79	87.95	88.34	90.49	92.59	70.26	455.34	21.34	45
57.5	42.06	62.64	66.45	67.21	72.96	79.03	85.35	88.47	89.53	90.58	92.62	74.09	411.48	20.28	25
60.0	37.36	69.56	74.23	75.12	79.32	84.61	86.51	88.08	89.34	90.55	94.57	77.05	437.25	20.91	36
62.5	57.36	68.09	69.99	73.04	74.86	82.86	88.74	89.71	90.44	92.30	95.67	78.65	285.05	16.88	37
65.0	60.06	67.10	69.36	70.35	74.66	77.82	85.38	88.85	89.95	92.74	96.37	78.30	201.89	14.21	18
67.5	71.45	76.86	78.32	79.79	87.67	90.11	92.14	93.65	93.85	94.91	96.61	85.93	130.97	11.44	46
70.0	70.95	77.76	82.15	85.08	90.52	91.92	93.56	94.33	94.75	95.85	97.99	88.39	89.04	9.44	28
72.5	77.21	82.75	86.17	86.80	90.61	92.38	93.48	94.03	94.66	95.75	96.92	89.61	56.44	7.51	31
75.0	81.51	84.94	88.41	88.66	91.60	94.33	95.16	96.87	97.56	97.69	98.52	91.72	49.03	7.00	24
77.5	79.01	84.28	84.88	87.26	92.14	94.57	96.00	97.46	97.74	98.66	99.08	91.79	53.37	7.31	27
80.0	87.74	90.43	90.70	91.64	93.32	95.49	95.82	96.81	97.16	98.52	99.80	93.51	44.58	6.68	31
82.5	87.93	90.50	91.84	92.62	93.30	95.66	96.65	97.02	97.74	98.66	99.77	94.29	22.46	4.74	32
85.0	96.52	96.82	97.29	97.78	97.98	98.20	98.44	98.82	98.84	98.93	99.51	98.14	1.00	1.00	20
87.5	92.73	94.61	95.00	95.19	96.91	98.01	98.35	98.58	98.66	98.87	99.35	96.45	14.66	3.83	22
90.0	92.01	95.00	96.15	96.45	97.12	98.30	98.78	98.96	99.07	99.17	100.00	97.21	6.95	2.64	35
92.5	96.03	97.14	97.18	97.94	98.46	98.62	99.10	99.41	99.56	99.79	100.00	98.16	5.25	2.29	22
95.0	95.17	96.81	97.84	98.01	99.09	99.27	99.32	99.42	99.51	99.58	100.00	98.48	2.73	1.65	16
97.5	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.98	.01	.12	103

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Second-quartile storms; storm duration 6 to 12 hours															
2.5	0	0	0	0	0	0	0	0	0.66	1.51	5.73	1.78	25.25	5.03	85
5.0	.83	1.72	1.81	1.99	2.95	3.92	5.48	7.61	8.64	11.75	23.70	7.77	85.32	9.24	38
7.5	.96	1.85	2.52	4.06	5.69	6.52	8.74	12.08	14.39	18.01	35.01	11.94	184.23	13.57	37
10.0	2.73	4.83	6.16	6.66	8.32	10.73	12.62	17.01	20.61	26.48	34.12	14.23	129.57	11.38	40
12.5	2.16	6.63	8.90	11.64	12.29	14.39	16.68	27.62	32.67	34.07	39.87	18.96	228.05	15.10	36
15.0	3.88	6.78	8.43	11.45	16.86	17.52	21.52	34.02	34.13	34.51	40.48	21.12	176.95	13.30	35
17.5	5.46	7.99	8.39	9.91	16.85	20.10	21.44	34.10	34.51	40.31	45.30	22.82	271.05	16.46	43
20.0	4.47	12.83	14.29	14.91	20.94	24.64	27.09	34.00	34.13	34.51	53.81	25.60	245.90	15.68	39
22.5	6.69	11.28	13.12	14.36	17.61	21.14	27.95	29.44	34.23	38.18	61.62	27.03	397.27	19.93	46
25.0	8.45	18.89	19.69	20.45	23.77	29.18	34.48	37.90	40.61	40.99	66.03	32.53	418.63	20.46	45
27.5	10.12	15.07	20.66	25.20	30.91	33.19	35.74	41.12	44.58	57.25	79.37	36.54	516.49	22.73	46
30.0	11.37	15.32	17.99	23.10	28.03	33.05	36.20	45.83	58.39	70.43	80.62	38.54	563.85	23.75	45
32.5	12.79	17.46	20.67	24.54	35.63	37.79	42.78	51.82	60.73	69.40	86.91	42.90	681.37	26.10	55
35.0	12.65	19.49	24.59	26.46	31.45	38.12	42.79	56.90	62.34	71.68	92.29	43.98	699.92	26.46	50
37.5	18.01	22.39	25.35	27.26	35.64	42.20	45.16	54.55	58.17	72.12	82.69	45.51	568.69	23.85	50
40.0	29.68	31.80	33.93	36.91	44.53	47.31	50.92	60.63	64.01	67.34	81.69	51.44	388.13	19.70	47
42.5	25.41	38.03	43.43	48.86	52.60	55.69	61.59	65.35	68.87	72.63	83.91	55.89	453.77	21.30	43
45.0	33.59	41.45	46.04	49.32	55.12	58.87	63.08	71.09	76.40	81.48	88.88	60.01	428.35	20.70	38
47.5	29.39	42.52	47.79	52.46	61.68	62.60	67.37	74.69	78.06	80.19	91.16	61.96	480.26	21.91	44
50.0	33.77	47.32	50.80	60.99	64.37	70.46	72.17	75.79	78.59	79.40	87.67	64.67	368.98	19.21	39
52.5	31.47	48.65	54.21	56.58	61.95	65.12	67.42	74.77	77.46	80.42	89.15	63.25	406.28	20.16	44
55.0	44.60	52.72	59.00	62.39	68.73	72.34	75.38	82.61	84.01	87.43	90.30	69.97	295.20	17.18	40
57.5	45.48	55.29	59.35	63.69	70.12	75.38	78.26	83.23	83.62	85.53	93.25	71.00	317.72	17.82	37
60.0	57.08	61.73	63.01	63.60	68.75	72.46	77.53	85.35	87.88	89.75	95.21	73.46	275.03	16.58	43
62.5	63.66	66.79	71.75	72.79	79.82	84.92	87.36	89.22	90.21	90.59	92.41	80.61	128.60	11.34	32
65.0	65.80	73.19	74.01	76.31	79.21	84.51	87.88	90.93	91.68	92.57	96.87	81.40	187.02	13.68	42
67.5	68.12	77.99	78.30	79.94	86.21	88.51	90.00	92.63	93.93	94.82	98.53	85.40	123.09	11.09	39
70.0	67.62	78.08	79.30	81.30	83.96	89.34	92.04	94.40	94.85	97.02	98.82	85.86	148.34	12.18	34
72.5	74.11	82.08	82.89	83.23	85.85	89.95	92.88	95.85	96.49	96.76	99.32	87.62	145.87	12.08	39
75.0	71.79	79.79	82.50	83.74	90.89	91.91	93.71	96.56	97.07	97.85	99.18	88.45	126.49	11.25	29
77.5	66.71	79.61	83.80	85.37	91.24	93.26	93.71	96.08	97.25	97.98	99.03	88.09	151.82	12.32	34
80.0	75.15	82.12	83.28	86.10	87.72	93.60	94.59	96.21	97.67	98.71	99.38	90.21	65.31	8.08	29
82.5	82.15	87.04	87.61	88.42	91.88	95.56	96.67	97.90	98.81	99.58	100.00	92.85	44.51	6.67	28
85.0	80.64	88.94	90.17	90.97	94.72	96.77	98.15	98.64	98.76	99.04	99.96	93.59	54.09	7.35	30
87.5	88.84	89.86	90.60	92.10	95.47	97.61	98.52	98.92	99.62	100.00	100.00	95.46	20.91	4.57	32
90.0	87.32	91.74	93.17	93.38	95.36	96.97	98.01	99.00	99.15	99.52	100.00	95.41	22.74	4.77	33
92.5	91.59	94.19	95.07	96.29	97.37	98.44	98.94	99.50	99.92	100.00	100.00	97.04	11.65	3.41	32
95.0	94.64	96.54	97.11	98.22	98.95	99.14	99.32	99.67	99.92	100.00	100.00	98.35	3.72	1.93	32
97.5	98.73	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.64	1.16	1.08	84

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Second-quartile storms; storm duration 12 to 24 hours															
2.5	0	0	0	0	0	0	0.66	1.37	2.01	2.72	5.85	2.14	20.99	4.58	174
5.0	.50	2.08	2.40	2.58	3.07	4.97	6.52	9.06	9.72	11.07	17.23	7.60	67.53	8.22	81
7.5	2.61	4.24	4.86	5.58	8.39	10.48	13.04	17.15	19.37	23.87	34.49	14.54	162.11	12.73	70
10.0	4.23	6.25	7.52	8.46	9.54	11.83	16.21	21.55	29.33	35.31	42.10	17.67	197.10	14.04	76
12.5	4.52	7.95	9.29	10.86	12.71	15.55	18.55	31.80	36.33	37.05	43.40	20.84	228.08	15.10	79
15.0	8.84	11.01	11.81	13.51	18.58	20.68	30.59	37.05	38.13	38.77	46.07	25.63	254.48	15.95	70
17.5	7.22	12.15	13.85	15.08	20.23	24.09	32.04	38.00	38.38	40.18	43.55	26.81	248.18	15.75	77
20.0	2.00	8.90	11.13	13.83	18.03	23.02	28.47	38.00	41.11	43.65	57.70	26.90	381.18	19.52	78
22.5	4.64	12.16	15.18	18.36	21.98	25.70	35.19	41.60	46.30	52.90	64.03	30.97	426.91	20.66	72
25.0	9.64	16.54	20.22	23.16	27.47	34.54	39.47	42.38	43.92	63.10	67.26	36.03	428.13	20.69	79
27.5	4.25	12.84	15.22	20.77	26.44	32.79	42.05	47.55	49.70	52.80	70.09	35.08	541.71	23.27	75
30.0	5.78	17.19	22.58	25.26	33.65	38.00	41.78	49.59	51.32	53.31	70.42	37.23	439.07	20.95	83
32.5	10.24	22.96	27.31	30.09	32.92	41.31	44.14	51.14	53.61	55.01	63.57	39.27	351.01	18.74	66
35.0	13.34	25.53	29.03	33.16	40.00	47.10	54.39	59.90	63.28	65.19	72.78	46.00	452.18	21.26	74
37.5	13.85	23.58	26.95	32.07	43.75	50.70	53.61	62.55	72.65	75.90	81.82	48.27	617.59	24.85	83
40.0	14.67	22.99	25.72	31.85	39.30	49.41	55.89	65.63	71.13	75.29	87.19	49.27	673.28	25.95	95
42.5	23.83	31.28	35.67	37.93	46.00	52.73	61.05	72.59	75.18	78.56	85.79	54.67	542.13	23.28	95
45.0	32.41	38.18	43.55	46.73	53.61	63.41	71.89	77.04	78.22	80.13	92.27	61.29	490.75	22.15	96
47.5	37.73	44.91	49.45	53.97	60.06	64.67	70.11	78.25	79.42	83.60	92.88	64.51	425.73	20.63	84
50.0	41.32	51.55	52.86	57.95	66.14	70.55	73.42	79.39	82.04	84.11	93.80	67.94	357.23	18.90	96
52.5	44.91	56.32	59.57	63.72	71.32	75.58	79.39	83.99	84.64	86.96	96.66	71.69	389.16	19.73	84
55.0	46.86	57.77	60.42	64.56	71.39	75.90	80.59	85.43	86.74	89.62	93.76	72.43	363.35	19.06	96
57.5	49.61	59.27	60.99	63.19	71.81	76.46	80.64	87.20	89.42	91.09	95.30	73.40	380.39	19.50	82
60.0	63.35	68.77	71.62	75.16	80.44	82.83	88.35	91.73	93.30	94.04	98.06	81.17	236.27	15.37	76
62.5	51.48	62.05	69.81	71.54	76.59	82.58	86.53	91.01	94.70	95.10	98.22	77.69	394.70	19.87	74
65.0	59.23	73.66	78.37	80.17	81.97	86.27	88.94	93.45	95.84	97.79	99.10	82.20	297.22	17.24	70
67.5	58.14	70.57	74.59	76.50	81.16	85.31	88.39	91.30	92.30	93.49	98.06	80.96	251.18	15.85	66
70.0	60.98	70.11	76.84	78.98	83.55	87.34	91.98	94.20	95.53	96.54	99.32	83.00	258.45	16.08	57
72.5	59.44	69.14	71.94	72.96	80.92	83.33	88.36	91.98	94.86	95.72	97.44	80.59	281.89	16.79	65
75.0	66.36	77.03	80.39	82.94	84.61	88.68	90.91	94.75	97.15	98.00	99.29	85.14	222.88	14.93	63
77.5	67.71	81.44	83.55	84.34	86.58	87.82	91.00	94.47	95.98	97.72	98.67	86.36	178.25	13.35	57
80.0	71.00	82.95	84.64	85.94	89.80	91.64	93.29	95.28	96.73	98.44	99.34	88.80	104.03	10.20	62
82.5	74.40	80.21	84.98	85.57	91.07	93.36	94.90	96.48	97.08	98.63	99.68	89.41	121.20	11.01	46
85.0	81.16	85.36	86.90	88.64	92.83	94.81	95.87	97.36	97.94	98.56	98.86	91.53	74.84	8.65	57
87.5	87.09	89.22	90.63	92.19	94.50	96.84	97.41	98.72	98.93	99.23	100.00	94.32	35.13	5.93	47
90.0	84.85	90.50	92.96	95.05	96.84	97.71	98.46	98.80	99.33	99.58	100.00	94.94	39.45	6.28	49
92.5	86.66	93.24	94.90	95.83	97.91	98.50	98.76	99.10	99.11	99.37	99.66	95.71	34.72	5.89	55
95.0	80.42	91.98	94.77	97.21	98.58	98.94	99.28	99.40	99.65	99.70	100.00	95.44	60.99	7.81	57
97.5	96.57	99.49	99.70	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.56	23.29	4.83	139

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Second-quartile storms; storm duration 24 to 72 hours															
2.5	0	0	0	0	0.60	2.03	3.51	5.65	7.39	10.47	22.42	6.28	93.98	9.69	229
5.0	1.60	2.89	5.02	6.21	9.67	13.92	19.64	23.86	31.57	40.70	50.39	21.00	429.77	20.73	101
7.5	2.59	4.78	6.98	9.46	16.42	20.44	36.75	44.82	48.65	50.22	63.75	28.90	521.48	22.84	87
10.0	1.07	5.28	7.63	9.96	15.91	40.70	54.87	57.45	60.07	63.14	67.92	35.32	752.49	27.43	95
12.5	2.37	4.78	7.68	8.26	13.90	36.60	66.09	69.57	71.53	74.44	81.17	40.36	1076.84	32.82	89
15.0	2.63	5.05	6.30	8.26	9.94	16.48	48.80	70.87	73.04	77.82	82.06	36.27	1,091.03	33.03	79
17.5	1.44	4.42	5.22	6.63	10.65	14.96	27.37	60.71	75.67	79.30	84.07	34.08	1,102.69	33.21	72
20.0	3.72	7.76	8.72	10.51	15.98	22.84	28.10	60.71	67.93	80.00	86.26	35.84	973.65	31.20	64
22.5	3.22	6.22	7.10	8.54	12.11	18.89	24.67	29.09	41.71	63.50	82.72	28.69	798.07	28.25	72
25.0	4.63	8.32	8.84	10.85	23.77	27.91	30.47	51.67	58.06	64.46	82.72	34.49	763.18	27.63	82
27.5	3.04	8.54	9.77	10.85	18.70	30.89	37.62	57.29	62.45	69.88	81.31	35.97	821.87	28.67	94
30.0	6.16	10.89	14.16	18.38	31.15	34.44	46.56	54.67	61.49	62.83	84.42	39.66	718.87	26.81	95
32.5	6.93	11.28	12.52	14.58	19.64	32.79	38.58	42.26	46.64	55.06	62.89	32.67	481.20	21.94	93
35.0	8.78	12.22	13.68	16.95	26.95	36.93	43.32	49.04	56.72	63.02	78.65	38.10	634.07	25.18	104
37.5	11.04	14.93	16.82	18.28	29.02	43.39	50.02	55.42	62.02	64.14	71.29	40.46	579.52	24.07	100
40.0	12.77	18.79	19.99	22.95	32.78	42.64	54.60	63.08	64.78	70.93	78.31	44.46	598.32	24.46	121
42.5	19.70	26.35	27.89	29.63	34.62	40.85	46.34	59.52	66.92	71.38	83.31	46.45	547.74	23.40	110
45.0	24.81	35.43	39.01	42.18	45.30	50.12	56.30	60.74	69.57	72.09	84.09	52.87	439.70	20.97	109
47.5	35.19	45.01	47.93	52.27	55.17	58.50	62.03	70.41	73.84	75.39	84.95	59.45	383.04	19.57	107
50.0	41.63	49.29	54.12	56.65	59.73	63.42	68.69	75.42	76.99	78.48	84.79	63.54	325.84	18.05	96
52.5	44.02	56.87	58.78	59.85	61.88	63.13	66.67	75.27	77.35	77.98	86.86	65.45	262.92	16.21	99
55.0	49.30	57.16	59.35	61.24	63.41	67.44	76.72	80.44	82.04	84.95	89.02	68.71	304.48	17.45	108
57.5	59.04	61.24	63.41	64.62	70.78	75.27	79.81	83.72	84.95	86.14	91.33	73.84	241.70	15.55	103
60.0	61.31	66.62	71.59	75.30	80.83	84.29	86.67	88.44	90.72	91.27	96.76	80.46	183.98	13.56	88
62.5	62.75	69.69	73.66	75.62	85.00	87.79	91.01	94.41	94.98	95.63	97.57	83.54	184.95	13.60	101
65.0	65.41	72.85	75.62	78.88	84.86	88.37	91.67	96.40	97.34	97.64	98.30	84.05	272.09	16.50	89
67.5	64.53	77.19	79.79	82.73	87.55	90.27	96.03	97.70	98.24	98.30	98.51	86.71	192.94	13.89	62
70.0	63.89	78.37	83.66	85.90	90.47	93.84	96.09	97.97	98.43	98.54	98.64	87.52	210.48	14.51	63
72.5	53.46	74.01	77.87	79.42	86.61	92.18	94.34	96.91	97.25	98.23	98.54	83.67	346.47	18.61	63
75.0	58.81	70.37	75.87	86.09	90.95	93.18	95.36	96.47	96.94	97.54	98.56	85.38	289.26	17.01	65
77.5	51.93	66.10	76.70	79.84	86.67	92.61	94.72	97.25	97.81	98.27	98.89	83.44	382.39	19.55	58
80.0	64.19	66.21	72.39	76.68	80.69	88.24	93.12	97.21	97.81	98.39	99.06	83.61	247.07	15.72	67
82.5	67.24	73.90	76.24	77.68	84.15	89.54	94.11	96.27	97.25	97.64	98.98	85.96	151.76	12.32	63
85.0	72.20	76.14	77.33	80.09	84.43	91.28	94.04	97.35	98.25	98.32	99.01	87.40	118.38	10.88	71
87.5	71.89	76.14	78.07	83.85	88.01	94.17	96.04	97.98	98.41	99.01	99.47	87.76	228.48	15.12	70
90.0	63.90	74.89	77.94	79.86	84.52	87.40	90.88	94.32	96.48	98.38	98.98	82.64	386.37	19.66	65
92.5	74.80	82.28	85.29	87.76	90.07	93.98	97.00	98.46	98.78	98.98	99.56	89.57	146.91	12.12	71
95.0	80.28	88.24	90.75	92.26	94.19	95.26	97.59	99.20	99.32	99.37	99.66	93.31	61.57	7.85	79
97.5	89.72	93.94	95.13	96.25	97.67	98.49	99.62	100.00	100.00	100.00	100.00	96.76	18.92	4.35	235

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples	
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th					
Second-quartile storms; storm duration 0 to 72 hours																
2.5	0	0	0	0	0	0	0.62	2.03	3.08	4.37	10.54	3.36	52.26	7.23	591	
5.0	1.10	1.99	2.44	2.70	4.41	6.62	9.36	13.57	17.23	21.44	39.16	13.13	269.89	16.43	235	
7.5	1.79	4.05	4.60	5.51	8.39	11.11	16.03	23.27	32.93	37.19	50.09	19.32	370.01	19.24	212	
10.0	2.33	5.32	6.50	7.39	9.36	12.31	17.81	29.19	37.02	43.40	59.28	22.61	482.18	21.96	252	
12.5	2.31	6.11	7.92	9.17	12.01	15.42	20.45	36.33	39.04	58.05	71.79	27.16	667.67	25.84	226	
15.0	4.73	7.59	8.78	10.54	13.90	17.61	23.54	37.05	40.00	45.18	73.62	27.82	606.85	24.63	203	
17.5	3.57	7.61	9.60	11.66	14.67	19.60	24.24	34.46	38.67	42.86	69.56	26.99	550.08	23.45	218	
20.0	4.43	9.75	12.08	13.87	17.76	22.86	25.62	34.13	38.00	43.96	62.52	28.39	516.76	22.73	215	
22.5	4.26	7.24	9.96	12.35	17.86	21.93	26.39	34.15	38.84	46.75	65.34	28.08	529.71	23.02	225	
25.0	5.25	10.82	16.38	20.14	25.18	29.39	35.15	41.89	44.59	56.71	68.84	33.90	532.34	23.07	232	
27.5	4.86	10.64	12.96	16.08	25.17	31.29	37.39	45.87	50.50	60.96	72.47	34.68	603.59	24.57	258	
30.0	7.29	14.38	18.73	23.53	31.08	34.75	41.49	51.23	53.55	57.66	73.68	38.29	560.58	23.68	251	
32.5	10.06	15.46	20.24	25.00	33.11	38.00	42.62	50.54	54.19	58.87	71.18	38.98	499.31	22.35	259	
35.0	11.41	15.79	19.62	25.86	33.73	40.91	46.78	56.32	59.36	64.66	76.34	42.10	594.00	24.37	247	
37.5	13.07	19.56	23.57	27.77	38.62	45.32	52.19	59.35	63.29	69.06	78.49	45.03	581.28	24.11	266	
40.0	15.17	22.95	27.18	31.87	40.81	48.56	56.06	63.92	67.01	71.57	82.20	48.19	592.32	24.34	297	
42.5	22.60	28.48	31.27	35.58	43.73	51.81	58.20	67.92	71.64	75.06	83.97	52.00	540.47	23.25	276	
45.0	29.57	38.38	42.37	44.35	50.46	58.03	64.68	75.27	76.80	78.77	87.63	58.17	499.44	22.35	284	
47.5	35.32	44.42	49.15	52.88	58.14	61.89	66.50	74.91	77.80	80.57	88.70	61.88	435.53	20.87	261	
50.0	42.10	51.72	55.58	57.89	63.61	68.54	73.26	77.30	79.39	82.98	88.74	66.68	337.30	18.37	268	
52.5	43.49	56.35	58.43	60.84	63.26	67.47	74.89	78.77	81.38	84.45	90.08	67.84	355.62	18.86	252	
55.0	47.06	56.93	59.35	61.75	66.97	72.00	78.47	82.95	85.04	87.23	91.94	70.36	348.71	18.67	289	
57.5	54.89	60.25	62.50	65.17	70.96	75.54	79.89	84.59	86.56	88.47	93.57	73.30	317.29	17.81	247	
60.0	61.16	66.62	69.72	72.83	77.94	83.00	86.58	89.09	90.38	91.84	96.81	78.94	262.20	16.19	243	
62.5	60.52	68.49	71.31	73.46	79.22	86.15	88.37	91.30	94.05	94.97	97.25	80.64	263.07	16.22	244	
65.0	63.59	72.29	75.00	77.66	81.28	86.56	88.86	93.49	95.81	97.03	98.31	82.48	260.73	16.15	219	
67.5	63.46	75.82	77.95	79.87	85.04	88.51	91.13	93.64	94.94	96.17	98.50	84.52	190.72	13.81	213	
70.0	63.82	77.36	79.24	81.90	87.42	90.75	93.68	95.34	96.94	97.78	98.65	85.93	199.71	14.13	182	
72.5	64.95	74.77	78.42	80.87	84.95	89.48	92.39	94.92	96.09	96.50	98.54	84.37	251.59	15.86	198	
75.0	66.27	78.86	82.18	83.92	88.68	91.75	94.12	96.13	97.06	97.66	98.66	86.63	213.53	14.61	181	
77.5	63.93	79.41	83.29	84.42	87.38	92.11	94.13	96.67	97.41	97.96	98.84	86.57	229.12	15.14	176	
80.0	66.67	79.25	82.58	85.42	89.52	91.89	94.09	96.66	97.23	98.40	99.08	87.95	151.83	12.32	189	
82.5	74.56	80.38	85.03	87.34	90.55	93.51	95.43	96.84	97.47	98.30	99.28	89.62	112.07	10.59	169	
85.0	75.58	82.62	85.91	88.64	92.24	95.07	97.03	98.12	98.36	98.60	99.25	90.97	92.53	9.62	178	
87.5	77.78	87.51	89.27	90.71	94.25	95.88	97.53	98.53	98.82	99.21	99.71	92.12	122.61	11.07	171	
90.0	77.85	85.17	87.71	90.75	93.65	96.40	97.84	98.60	98.84	99.07	99.66	91.07	194.12	13.93	182	
92.5	83.19	89.27	91.07	93.54	96.66	98.02	98.59	99.00	99.11	99.32	100.00	93.82	83.63	9.14	180	
95.0	86.16	92.35	93.90	94.79	97.26	98.60	99.20	99.34	99.43	99.64	100.00	95.29	50.42	7.10	184	
97.5	94.04	97.56	98.29	99.27	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.23	15.66	3.96	561	

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Third-quartile storms; storm duration 0 to 6 hours															
2.5	0	0	0	0	0	0	0	0	0	0	3.33	0.55	2.41	1.55	59
5.0	.94	1.71	1.83	1.95	3.73	4.67	6.36	14.17	16.87	19.57	25.42	8.72	69.88	8.36	9
7.5	1.21	2.00	2.38	2.66	4.66	6.31	9.29	10.83	11.31	14.02	28.51	9.03	70.67	8.41	18
10.0	1.25	1.85	2.88	4.72	5.34	11.63	15.00	15.00	16.30	16.73	32.85	11.81	96.57	9.83	16
12.5	1.16	1.96	3.01	4.23	13.86	15.61	16.67	18.03	21.42	23.63	34.35	14.82	115.49	10.75	16
15.0	--	4.58	5.67	6.02	12.30	18.72	25.91	33.10	33.10	33.67	--	19.04	171.03	13.08	8
17.5	2.78	9.38	10.44	11.74	16.67	16.67	18.18	22.73	25.68	27.50	35.19	17.85	98.12	9.91	14
20.0	2.34	8.38	10.91	13.65	20.08	21.67	26.87	31.58	31.92	32.65	33.83	20.98	123.07	11.09	16
22.5	2.31	2.63	3.77	8.83	14.96	18.25	18.60	22.50	22.50	26.25	36.87	16.87	129.44	11.38	20
25.0	4.55	6.12	7.05	8.87	10.92	14.37	19.55	28.21	30.27	32.19	39.12	18.39	147.89	12.16	16
27.5	1.62	10.38	13.42	21.31	24.17	24.17	28.97	33.10	33.10	36.45	40.02	24.27	152.65	12.36	15
30.0	3.86	11.91	15.04	17.08	18.96	25.83	25.83	31.64	35.97	40.15	52.86	25.31	223.08	14.94	13
32.5	4.73	12.32	13.39	15.12	18.01	21.88	28.33	32.87	33.10	37.43	45.63	24.15	190.56	13.80	23
35.0	--	3.52	4.44	5.98	7.91	12.05	18.44	25.84	30.50	34.55	--	16.77	172.47	13.13	8
37.5	21.34	28.33	28.33	28.33	28.91	34.05	37.29	39.59	42.15	44.66	55.60	35.50	125.86	11.22	14
40.0	3.99	8.97	22.22	26.26	28.36	30.00	31.69	33.87	36.99	44.42	71.38	31.62	398.00	19.95	15
42.5	2.06	12.86	20.82	23.71	24.70	32.68	34.17	35.61	40.15	44.62	52.55	30.36	311.33	17.64	18
45.0	0	19.92	19.92	19.92	21.26	33.81	34.43	39.73	61.79	83.84	85.03	37.55	747.04	27.33	9
47.5	7.45	13.05	16.07	20.90	35.48	36.67	36.67	44.16	53.32	61.53	66.33	35.99	427.10	20.67	17
50.0	10.63	27.94	28.67	30.77	33.94	40.87	43.54	44.17	47.65	53.10	71.82	40.77	436.92	20.90	30
52.5	21.38	21.88	28.57	28.69	36.54	44.07	47.46	56.67	56.67	56.67	80.91	44.24	428.15	20.69	19
55.0	36.11	37.58	37.89	42.16	48.34	56.81	57.39	60.79	62.99	81.52	94.54	57.26	384.36	19.61	11
57.5	33.18	40.49	40.95	41.25	42.70	49.35	58.04	68.21	78.54	81.67	82.88	56.11	383.25	19.58	20
60.0	20.66	40.41	41.04	45.59	53.89	56.57	65.01	83.90	85.00	85.00	88.73	59.23	607.50	24.65	23
62.5	2.72	43.27	49.53	56.12	58.18	62.28	71.19	75.00	85.83	85.83	87.38	58.92	732.17	27.06	19
65.0	4.29	9.43	27.87	43.20	59.09	62.19	67.62	70.23	71.73	74.24	80.63	52.25	716.22	26.76	14
67.5	25.32	52.80	54.69	58.73	68.18	69.12	74.36	79.33	82.80	85.83	90.26	66.10	471.33	21.71	28
70.0	19.08	54.76	65.83	68.28	72.25	75.66	80.48	84.65	85.83	85.83	92.41	68.69	610.25	24.70	23
72.5	41.02	55.88	58.89	63.82	70.89	72.13	84.54	85.83	86.06	87.01	93.78	72.34	291.21	17.07	18
75.0	48.11	63.88	70.50	73.19	75.06	78.53	81.75	85.21	85.81	86.35	90.82	75.55	202.54	14.23	22
77.5	62.97	79.64	81.75	82.21	83.68	85.83	89.62	90.72	90.99	91.29	92.83	83.86	111.58	10.56	21
80.0	66.69	77.28	79.86	81.13	85.35	85.83	87.68	89.99	91.42	92.15	94.93	84.38	84.21	9.18	22
82.5	73.78	84.70	85.49	85.67	85.83	86.86	88.17	89.35	91.49	92.15	97.08	85.54	117.07	10.82	20
85.0	76.45	82.78	83.56	85.40	90.14	92.86	93.67	94.99	96.48	98.06	98.66	90.22	52.43	7.24	17
87.5	85.39	85.83	87.52	89.77	92.32	95.04	95.10	96.59	96.99	97.36	98.67	92.80	23.90	4.89	17
90.0	85.41	90.57	91.55	92.50	92.50	94.89	96.72	97.09	97.11	97.21	99.10	93.93	17.33	4.16	19
92.5	91.58	93.58	95.45	95.71	96.78	98.00	98.24	98.33	98.63	98.78	99.14	96.27	14.11	3.76	23
95.0	94.97	97.75	97.81	97.87	98.02	98.24	98.56	98.97	99.22	99.49	99.96	98.20	1.92	1.38	10
97.5	99.17	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.80	.38	.61	59

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Third-quartile storms; storm duration 6 to 12 hours															
2.5	0	0	0	0	0	0	0	1.56	1.97	2.67	5.70	1.88	17.22	4.15	122
5.0	1.25	2.33	2.37	2.51	3.14	4.42	5.72	8.96	9.16	9.54	14.05	6.44	38.54	6.21	48
7.5	.66	2.61	3.42	3.91	4.54	8.19	8.96	11.13	12.29	12.39	15.20	7.61	25.64	5.06	40
10.0	2.13	3.80	4.94	5.83	7.31	8.65	11.20	16.73	18.95	20.67	21.98	12.28	102.53	10.13	43
12.5	1.63	5.04	6.17	7.78	9.56	10.47	11.38	14.42	16.34	17.76	21.09	11.34	48.33	6.95	39
15.0	1.72	3.94	5.06	6.08	11.50	14.67	16.83	20.92	26.11	28.97	33.77	16.19	146.50	12.10	46
17.5	1.02	6.17	6.27	6.86	9.86	12.56	13.49	19.04	21.30	25.74	33.03	14.70	132.61	11.52	34
20.0	5.39	11.43	12.73	14.17	14.29	16.34	19.76	24.52	31.49	32.62	44.17	20.73	161.32	12.70	46
22.5	2.19	6.06	10.16	14.03	14.29	14.75	16.33	22.73	27.25	31.66	38.60	18.25	165.89	12.88	42
25.0	3.25	6.88	10.57	11.21	14.26	20.26	30.27	32.29	37.30	42.50	44.84	23.02	239.26	15.47	36
27.5	8.47	12.50	14.20	14.29	16.97	21.20	30.52	35.59	40.52	44.84	53.04	26.26	248.45	15.76	36
30.0	3.29	6.99	10.97	11.70	14.24	21.61	31.87	32.29	36.79	44.46	45.82	24.55	279.04	16.70	38
32.5	1.29	7.00	11.41	13.06	16.15	19.18	32.36	36.85	41.77	44.84	49.79	24.80	322.35	17.95	44
35.0	5.91	10.04	11.97	13.05	16.99	21.85	33.64	39.34	44.36	44.84	54.58	27.62	336.41	18.34	27
37.5	5.07	8.62	12.87	13.71	16.23	21.05	22.90	32.74	33.72	38.00	51.61	23.64	232.48	15.25	31
40.0	6.28	10.93	13.45	14.24	18.81	21.09	30.34	34.58	37.17	44.84	49.63	25.60	233.65	15.29	31
42.5	6.91	14.17	14.29	15.48	21.86	28.00	29.50	36.01	39.85	40.84	51.37	27.81	270.47	16.45	39
45.0	3.82	6.49	8.30	11.41	15.33	19.06	25.73	32.90	41.18	41.79	46.65	23.18	269.18	16.41	38
47.5	3.53	9.88	11.90	15.48	20.86	22.88	24.77	31.81	33.13	41.90	53.82	25.08	264.34	16.26	44
50.0	10.97	14.17	14.31	16.46	25.14	27.85	32.35	34.56	36.84	40.88	53.45	29.78	302.43	17.39	34
52.5	6.08	15.05	21.41	24.99	27.27	32.46	37.30	42.18	49.29	55.01	57.62	33.97	387.98	19.70	50
55.0	10.84	23.24	27.18	29.18	31.91	35.09	41.57	49.10	51.18	55.61	71.60	39.30	448.36	21.17	48
57.5	6.62	16.51	20.63	27.39	31.25	37.21	41.01	51.41	55.81	60.06	74.85	39.55	571.47	23.91	48
60.0	13.62	17.12	23.70	27.92	33.19	41.15	45.80	54.03	55.94	60.77	74.71	41.52	510.82	22.60	57
62.5	20.22	31.69	33.09	35.63	42.11	48.02	51.61	59.90	64.01	69.08	80.26	49.23	487.04	22.07	62
65.0	18.68	32.05	36.12	39.55	47.26	58.82	62.82	66.33	73.80	76.25	82.35	53.93	540.59	23.25	57
67.5	20.93	32.23	35.08	43.48	47.59	57.90	63.22	68.99	72.35	78.01	84.66	55.06	515.30	22.70	71
70.0	24.19	41.61	45.07	48.18	59.42	61.87	65.92	74.95	79.85	81.96	87.43	59.92	496.27	22.28	67
72.5	19.84	43.62	49.49	55.66	61.99	67.68	76.15	82.41	83.69	86.57	91.90	63.93	601.86	24.53	84
75.0	22.95	47.66	50.79	60.15	69.79	75.35	81.25	85.47	86.38	88.05	91.69	67.86	579.27	24.07	67
77.5	49.65	60.74	64.59	69.35	75.73	81.37	85.68	90.28	91.50	92.48	95.97	76.38	351.52	18.75	80
80.0	61.33	71.22	73.01	76.67	82.10	85.83	87.35	90.27	91.82	93.18	96.62	81.21	222.00	14.90	80
82.5	61.66	78.60	80.33	82.29	87.47	89.45	90.60	93.49	94.39	95.34	97.13	85.09	175.94	13.26	70
85.0	66.34	81.69	85.65	86.96	91.08	92.50	93.31	94.60	95.37	95.97	98.12	87.74	159.51	12.63	72
87.5	78.97	86.47	88.74	90.37	93.25	94.37	95.08	95.77	96.17	97.21	98.40	91.72	52.88	7.27	73
90.0	86.89	91.62	92.32	93.63	95.32	96.61	96.95	97.64	97.86	97.98	98.89	94.40	34.42	5.87	58
92.5	91.16	93.77	94.49	95.19	96.40	97.59	97.89	98.23	98.42	98.67	99.57	95.92	18.82	4.34	64
95.0	92.61	95.90	96.32	96.68	97.94	98.12	98.50	98.75	99.01	99.16	99.28	97.20	7.14	2.67	51
97.5	98.46	99.24	99.42	99.64	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.56	.85	.92	115

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Third-quartile storms; storm duration 12 to 24 hours															
2.5	0	0	0	0	0	0	0.14	0.83	1.83	2.39	5.33	1.65	13.92	3.73	135
5.0	.67	1.13	1.25	1.85	2.82	5.00	5.98	7.99	8.95	13.07	19.13	7.16	58.93	7.68	40
7.5	1.17	1.85	2.46	3.87	4.46	5.29	5.78	7.42	8.86	9.54	18.78	7.21	47.64	6.90	52
10.0	2.21	4.02	4.68	5.18	6.01	7.18	8.17	9.57	13.01	18.54	23.77	9.97	68.15	8.26	50
12.5	2.81	5.76	6.64	7.18	8.49	10.10	19.04	20.71	22.86	25.93	32.81	14.89	116.21	10.78	33
15.0	2.14	3.94	6.26	7.19	8.68	10.71	11.74	16.95	19.58	19.61	29.89	13.20	106.54	10.32	41
17.5	1.04	6.20	6.51	7.46	9.74	11.08	14.03	18.71	19.73	20.10	34.23	14.15	118.84	10.90	36
20.0	.88	6.29	6.98	8.70	8.82	10.25	14.93	19.88	20.85	21.31	31.14	14.18	112.05	10.59	30
22.5	1.88	6.75	7.59	8.67	13.12	15.26	16.45	20.10	21.11	22.67	30.84	15.64	96.37	9.82	32
25.0	.77	2.59	6.14	7.22	14.51	18.26	19.88	20.87	21.93	24.25	31.42	16.02	121.95	11.04	42
27.5	.71	5.34	7.33	11.09	14.28	18.18	20.69	26.12	27.99	31.19	34.80	18.39	148.07	12.17	35
30.0	2.36	5.34	6.30	7.49	14.80	20.00	21.43	28.33	28.59	31.48	37.81	19.34	180.01	13.42	29
32.5	1.03	6.53	8.22	8.48	10.95	15.08	20.00	22.52	22.99	28.00	35.79	16.94	140.09	11.84	33
35.0	1.80	4.82	5.26	6.75	10.03	12.50	17.11	23.43	23.63	24.95	36.24	15.87	150.45	12.27	23
37.5	3.49	7.02	7.86	8.83	12.95	20.00	23.24	26.18	27.63	31.80	35.17	19.29	169.90	13.03	33
40.0	2.37	3.80	4.47	5.83	9.37	16.75	19.19	28.53	30.27	30.68	38.86	18.44	206.11	14.36	30
42.5	1.29	6.44	8.69	9.67	11.59	14.29	20.00	26.70	31.13	32.42	45.14	19.53	251.12	15.85	24
45.0	3.28	6.04	7.61	9.73	13.88	18.38	20.90	29.14	30.00	30.92	39.85	20.64	263.92	16.25	32
47.5	3.90	7.19	8.14	10.19	12.41	18.04	19.96	23.25	26.59	28.89	43.41	19.87	214.79	14.66	41
50.0	4.63	9.35	10.18	11.99	18.18	19.88	22.86	31.58	34.95	36.49	39.78	22.34	173.73	13.18	47
52.5	9.22	12.44	14.52	19.69	23.25	26.82	31.09	38.61	40.93	41.80	48.42	27.64	202.13	14.22	59
55.0	10.92	15.77	17.07	19.66	22.33	32.76	39.95	44.12	47.02	49.98	57.73	33.66	335.80	18.32	67
57.5	13.74	21.29	23.16	28.55	32.73	39.36	45.62	51.08	54.22	59.68	73.18	40.81	439.75	20.97	74
60.0	14.36	22.77	25.75	30.85	38.79	45.84	52.40	59.38	64.60	68.59	84.11	46.18	543.15	23.31	82
62.5	26.73	36.96	40.10	42.67	50.30	54.67	60.14	63.80	67.57	76.68	88.52	55.25	451.85	21.26	76
65.0	29.04	38.54	41.27	46.15	56.91	61.52	66.97	72.97	77.13	80.02	89.98	59.49	507.73	22.53	88
67.5	25.38	43.50	49.37	51.02	58.91	66.55	72.45	76.95	81.41	83.22	93.57	62.88	518.30	22.77	95
70.0	36.95	44.04	45.07	51.77	62.67	70.01	73.81	79.88	83.20	85.09	89.79	65.42	430.34	20.74	86
72.5	33.49	46.27	52.18	55.78	62.54	72.31	80.00	83.04	85.87	87.06	94.28	67.60	515.46	22.70	98
75.0	44.76	56.25	60.23	64.10	68.79	76.79	83.47	86.33	87.76	88.91	96.82	72.95	371.37	19.27	86
77.5	44.84	62.76	67.27	69.75	74.21	78.10	84.76	87.19	89.01	90.17	96.41	75.85	309.76	17.60	90
80.0	57.56	64.86	70.29	74.02	79.24	84.73	86.69	87.54	88.46	89.76	96.63	79.51	197.00	14.04	80
82.5	67.45	74.99	79.83	80.26	85.60	87.95	89.12	90.69	91.35	93.18	97.94	84.61	130.56	11.43	87
85.0	69.96	76.24	78.21	80.26	86.26	89.16	91.34	92.85	94.10	96.73	98.74	85.77	128.84	11.35	82
87.5	74.75	81.51	84.78	88.79	90.28	91.30	92.47	94.43	95.96	96.98	99.16	89.17	82.56	9.09	75
90.0	81.30	83.98	86.13	87.64	91.25	92.51	95.60	97.27	97.64	98.05	99.07	91.59	48.96	7.00	83
92.5	84.58	87.92	89.72	90.97	92.39	94.17	96.42	97.42	98.08	98.68	99.10	93.21	31.20	5.59	61
95.0	85.35	92.38	93.59	94.38	95.29	96.51	97.24	98.45	98.71	99.21	100.00	94.81	29.36	5.42	66
97.5	92.52	97.79	98.46	99.10	99.70	100.00	100.00	100.00	100.00	100.00	100.00	98.23	13.36	3.66	144

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Third-quartile storms; storm duration 24 to 72 hours															
2.5	0	0	0	0	0.31	1.35	2.59	4.04	4.73	5.89	8.92	3.30	23.86	4.88	283
5.0	1.26	3.22	3.47	3.85	5.61	6.06	7.85	10.28	11.30	13.02	24.87	9.30	81.61	9.03	156
7.5	2.84	4.91	6.06	6.48	8.52	11.03	11.75	13.44	13.79	15.66	21.02	11.45	71.38	8.45	126
10.0	3.44	6.24	7.29	8.64	10.81	11.85	13.91	16.40	16.86	18.05	21.05	12.99	73.63	8.58	118
12.5	2.60	6.06	6.59	8.04	11.32	11.99	16.34	19.13	20.54	23.23	25.90	14.89	116.07	10.77	88
15.0	5.26	8.58	9.01	10.54	11.99	12.83	16.81	22.00	24.57	25.68	31.37	17.33	145.03	12.04	98
17.5	9.36	11.99	12.27	13.19	14.87	16.96	21.84	25.90	27.41	29.28	34.23	20.16	112.65	10.61	89
20.0	4.68	10.86	12.04	13.04	15.67	18.37	23.74	29.00	32.13	32.25	38.04	21.58	185.48	13.62	65
22.5	.85	5.59	7.74	11.96	15.29	16.44	21.28	25.00	28.08	32.13	37.54	19.30	204.72	14.31	68
25.0	3.06	8.99	10.69	11.50	13.91	18.72	24.70	26.80	30.73	32.13	35.78	20.56	189.84	13.78	67
27.5	9.58	11.81	13.25	13.47	17.97	20.85	25.45	30.07	30.70	31.08	36.24	23.11	192.38	13.87	73
30.0	7.11	13.14	15.39	19.64	22.80	26.77	29.30	31.97	32.13	33.51	40.67	26.16	216.61	14.72	63
32.5	7.04	11.09	13.24	14.92	21.18	25.38	28.38	33.28	34.63	36.19	42.60	26.12	270.18	16.44	56
35.0	4.32	9.61	11.13	12.01	21.48	26.81	28.73	32.18	35.23	36.34	41.29	24.53	232.95	15.26	61
37.5	7.89	12.18	13.20	14.66	20.76	29.51	33.16	38.06	38.92	39.85	67.43	29.75	378.65	19.46	60
40.0	6.87	13.47	15.69	17.38	22.60	28.34	35.37	39.03	40.46	41.09	48.90	28.95	306.94	17.52	67
42.5	9.64	13.44	17.98	18.98	25.21	29.72	32.18	38.28	41.29	42.37	49.29	29.66	273.11	16.53	58
45.0	4.24	10.18	10.55	11.86	18.81	25.60	31.52	36.67	38.14	42.73	51.99	27.32	389.38	19.73	56
47.5	7.41	10.46	10.87	12.73	14.53	18.85	28.05	35.57	37.00	39.18	45.58	25.00	315.58	17.76	86
50.0	8.62	14.84	16.41	18.23	20.00	23.27	28.50	34.20	38.00	41.60	51.13	27.41	262.03	16.19	108
52.5	10.30	21.65	24.65	27.18	30.95	36.51	38.60	41.57	42.66	43.89	50.67	34.07	233.54	15.28	110
55.0	17.57	32.52	35.48	39.19	42.48	46.77	49.61	54.18	56.07	58.33	74.79	45.87	353.44	18.80	109
57.5	15.46	38.20	42.63	44.02	48.20	53.58	59.27	67.44	72.32	76.18	83.46	53.59	508.51	22.55	110
60.0	19.48	36.64	41.06	42.33	44.61	50.62	58.21	67.02	73.39	76.89	84.73	53.12	561.35	23.69	120
62.5	18.08	26.51	36.61	42.11	49.73	55.50	62.28	67.30	71.98	76.14	85.22	53.35	588.06	24.25	135
65.0	19.35	23.21	27.25	37.73	47.39	51.92	62.17	67.26	68.94	76.13	82.71	51.48	572.93	23.94	147
67.5	23.20	35.33	42.59	46.81	54.75	66.76	69.42	74.76	78.61	82.04	87.23	59.52	572.43	23.93	153
70.0	23.85	42.54	49.24	54.17	61.76	66.24	72.02	80.97	86.19	89.19	96.07	64.48	603.88	24.57	156
72.5	26.67	50.42	55.32	62.62	68.54	74.38	81.24	88.40	89.19	89.19	97.47	69.77	583.88	24.16	151
75.0	29.96	46.10	54.51	57.10	68.28	74.15	80.92	84.96	87.81	89.55	97.78	68.74	589.66	24.28	154
77.5	26.29	53.53	59.00	62.60	70.48	79.22	83.93	88.51	90.03	93.69	97.13	70.70	640.07	25.30	157
80.0	26.27	39.96	49.43	55.27	66.92	74.92	81.77	89.25	91.77	95.95	97.47	68.51	713.66	26.71	141
82.5	38.11	52.15	58.21	65.32	76.55	81.19	84.24	88.99	91.26	96.14	97.65	73.13	563.53	23.74	149
85.0	37.74	60.09	67.52	70.61	81.14	85.40	89.14	91.77	94.34	96.12	97.47	77.02	491.26	22.16	152
87.5	47.75	71.58	75.09	77.60	84.04	87.36	91.62	95.24	96.15	97.25	98.09	81.76	349.29	18.69	145
90.0	49.27	66.83	75.47	81.51	86.51	88.28	93.49	97.23	97.48	97.88	99.24	82.82	338.94	18.41	160
92.5	75.02	84.30	86.59	88.18	90.16	92.11	94.05	96.02	97.37	98.03	99.55	90.08	82.21	9.07	150
95.0	89.41	91.87	93.34	94.07	95.16	95.93	96.80	98.03	98.42	98.62	99.57	95.18	17.07	4.13	145
97.5	96.31	97.70	98.16	98.56	99.15	99.55	100.00	100.00	100.00	100.00	100.00	98.65	4.77	2.18	259

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Third-quartile storms; storm duration 0 to 72 hours															
2.5	0	0	0	0	0	0	0.92	2.36	3.22	4.20	7.23	2.37	19.06	4.37	599
5.0	1.12	2.33	2.77	3.35	4.61	5.93	6.98	9.14	10.65	12.65	20.83	8.40	70.91	8.42	253
7.5	1.73	3.47	4.10	4.74	6.24	8.29	10.83	11.91	12.94	13.68	18.43	9.68	62.12	7.88	236
10.0	2.23	4.94	5.77	6.52	8.25	10.35	12.16	15.91	16.75	18.49	21.63	12.11	80.94	9.00	227
12.5	2.48	5.84	6.34	7.74	9.91	11.93	15.95	18.63	19.66	22.07	25.93	14.10	103.20	10.16	176
15.0	2.82	6.41	7.41	8.91	11.45	12.60	16.34	20.14	23.15	25.90	32.24	16.25	141.17	11.88	193
17.5	4.08	9.14	9.88	11.03	12.98	15.23	17.78	23.85	25.83	27.78	33.47	17.65	124.18	11.14	173
20.0	3.51	8.84	10.50	12.04	14.29	16.86	20.95	25.98	30.65	32.13	36.66	19.86	165.76	12.87	157
22.5	1.62	6.13	7.32	11.96	14.29	16.13	18.31	22.50	25.00	29.38	36.53	18.01	165.93	12.88	162
25.0	2.47	6.84	8.92	10.77	14.12	18.23	21.57	26.14	30.73	31.63	38.58	19.71	185.49	13.62	161
27.5	6.07	11.81	13.26	13.92	17.99	21.02	25.00	30.23	31.48	32.13	42.00	22.89	198.81	14.10	159
30.0	5.34	8.22	12.43	14.32	19.97	23.59	28.36	31.90	32.17	34.27	44.65	24.27	232.99	15.26	143
32.5	4.21	8.70	11.33	13.39	16.52	21.12	26.41	31.92	33.45	36.61	44.84	23.52	257.74	16.05	156
35.0	3.58	7.72	9.66	11.52	15.19	22.37	27.56	31.78	34.67	36.68	44.36	23.04	254.89	15.97	119
37.5	6.42	11.74	12.82	14.25	20.12	24.62	29.48	33.79	36.93	38.79	47.10	26.46	297.31	17.24	138
40.0	4.41	9.23	12.50	15.30	18.91	25.50	30.28	35.72	38.61	40.52	47.80	26.30	298.79	17.29	143
42.5	6.91	12.11	14.17	15.48	21.21	27.78	31.82	34.62	38.16	40.98	48.92	27.48	287.52	16.96	139
45.0	4.12	8.63	10.53	11.81	16.99	20.23	29.04	33.89	36.92	40.36	48.99	25.25	367.75	19.18	135
47.5	5.89	9.68	10.80	12.71	16.11	21.14	26.61	33.33	36.60	38.59	48.15	24.89	308.34	17.56	188
50.0	8.70	13.63	15.47	18.05	20.79	25.14	31.45	36.07	39.31	41.69	51.08	28.52	302.91	17.40	219
52.5	9.70	19.60	21.87	24.15	28.54	33.14	37.84	41.58	43.09	45.80	53.83	33.27	291.59	17.08	238
55.0	13.38	20.89	26.90	30.89	37.03	42.27	46.92	50.38	54.89	57.03	68.92	41.58	408.23	20.20	235
57.5	14.22	28.37	31.30	35.80	41.15	47.21	51.95	59.62	62.60	69.95	81.67	47.36	537.62	23.19	252
60.0	15.22	25.73	31.01	36.89	42.96	47.99	54.13	63.18	66.78	73.19	84.89	49.26	578.93	24.06	282
62.5	20.47	30.91	36.60	41.67	48.16	54.77	60.08	65.71	69.84	75.19	85.78	53.33	547.10	23.39	292
65.0	19.79	29.50	37.37	40.61	49.50	57.77	64.04	68.44	72.29	76.14	85.20	54.27	566.49	23.80	306
67.5	23.31	38.43	44.67	47.99	55.61	65.52	69.20	74.66	78.79	81.68	87.54	60.06	548.13	23.41	347
70.0	27.87	43.46	48.28	53.71	61.77	66.58	73.32	79.86	82.35	85.82	92.66	64.09	543.17	23.31	332
72.5	27.91	47.20	54.42	57.78	66.51	72.92	80.04	84.16	86.91	89.19	95.02	67.90	560.38	23.67	351
75.0	35.43	50.87	56.57	60.63	69.16	76.22	81.43	85.24	86.80	89.19	96.26	70.11	510.60	22.60	329
77.5	37.55	60.18	63.07	67.26	74.46	80.35	85.11	89.02	90.42	92.33	96.44	74.13	469.37	21.66	348
80.0	40.41	61.55	65.32	70.54	76.82	82.10	86.41	89.04	90.59	93.26	97.05	75.46	459.78	21.44	323
82.5	50.90	67.32	72.19	77.48	81.86	85.83	88.31	90.56	92.38	94.55	97.60	79.52	371.81	19.28	326
85.0	56.62	70.86	76.51	79.85	85.19	89.17	91.58	93.52	94.74	96.06	98.01	82.33	328.28	18.12	323
87.5	71.05	78.25	81.79	85.02	88.73	91.62	93.88	95.25	96.18	97.22	98.35	86.51	217.93	14.76	310
90.0	66.61	82.63	84.88	86.91	90.50	92.51	95.88	97.25	97.53	97.91	99.08	87.85	215.69	14.69	320
92.5	82.11	88.14	89.33	90.68	92.87	94.73	96.47	97.75	98.13	98.43	99.47	92.45	59.56	7.72	298
95.0	89.76	93.12	94.25	94.87	95.77	96.69	97.83	98.42	98.62	98.93	99.56	95.58	18.61	4.31	272
97.5	96.62	98.37	98.72	99.17	99.59	100.00	100.00	100.00	100.00	100.00	100.00	98.84	5.99	2.45	577

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Fourth-quartile storms; storm duration 0 to 6 hours															
2.5	0	0	0	0	0	0	0	0	0	0	0.78	0.43	3.17	1.78	18
5.0	--	--	--	--	2.69	3.63	4.57	--	--	--	--	3.63	2.45	1.57	2
7.5	--	--	--	--	--	.53	--	--	--	--	--	.53	0	0	1
10.0	--	.60	.65	.93	2.69	8.09	13.28	14.30	14.72	15.11	--	7.90	42.59	6.53	6
12.5	--	--	--	--	0	0	0	--	--	--	--	0	0	0	2
15.0	--	--	5.85	8.23	12.99	17.75	19.54	21.33	22.22	--	--	15.27	47.73	6.91	3
17.5	--	--	1.11	1.51	2.30	3.09	13.86	24.62	30.00	--	--	11.40	173.61	13.18	3
20.0	--	--	--	--	4.42	11.04	17.66	--	--	--	--	11.04	121.86	11.04	2
22.5	--	.27	.68	1.08	3.36	6.38	19.23	29.79	32.79	35.78	--	14.66	233.52	15.28	5
25.0	--	0	0	0	3.19	7.98	9.86	16.67	25.00	33.33	--	11.60	205.43	14.33	5
27.5	--	--	1.70	1.80	2.01	2.22	11.20	20.19	24.68	--	--	9.53	114.72	10.71	3
30.0	--	--	--	--	8.47	19.88	31.29	--	--	--	--	19.88	361.36	19.01	2
32.5	--	2.01	2.19	2.50	5.41	8.13	15.82	26.63	27.61	30.31	--	14.50	180.94	13.45	8
35.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0
37.5	--	2.61	2.79	2.97	3.33	8.05	12.77	19.59	23.00	26.41	--	11.28	92.34	9.61	4
40.0	--	--	2.94	2.95	2.96	2.97	2.99	3.02	3.03	--	--	2.98	0	.04	3
42.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0
45.0	--	4.83	4.98	5.02	5.69	7.11	16.00	28.37	29.16	31.46	--	15.61	173.20	13.16	8
47.5	--	--	--	--	--	26.41	--	--	--	--	--	26.41	0	0	1
50.0	--	--	6.62	10.23	17.46	24.69	27.79	30.88	32.43	--	--	21.25	117.00	10.82	3
52.5	--	1.58	3.96	6.34	7.99	8.08	10.89	15.58	19.80	24.03	--	11.12	78.59	8.87	5
55.0	--	8.96	9.35	9.74	16.00	25.00	33.33	40.06	41.83	43.59	--	25.47	214.66	14.65	5
57.5	--	--	13.13	13.28	13.57	13.86	19.75	25.63	28.57	--	--	18.52	50.59	7.11	3
60.0	--	2.79	6.99	11.18	16.46	20.20	23.53	27.19	29.37	31.54	--	18.58	125.61	11.21	5
62.5	--	10.23	14.73	18.56	24.37	29.07	33.10	36.04	37.06	40.53	--	27.22	221.24	14.87	8
65.0	--	2.16	7.29	12.42	22.69	32.56	42.42	43.49	44.02	44.55	--	27.96	294.53	17.16	4
67.5	--	24.51	31.15	35.79	39.19	42.42	45.89	47.17	48.12	48.74	--	38.11	167.52	12.94	8
70.0	--	15.05	18.44	18.55	22.77	27.06	37.75	52.99	55.21	62.19	--	35.75	629.27	25.09	8
72.5	9.49	20.63	26.09	30.08	35.43	40.28	42.64	43.05	46.52	53.89	64.47	37.77	251.57	15.86	10
75.0	27.12	30.51	35.00	39.50	41.98	48.92	70.71	76.24	82.06	87.88	88.12	56.77	519.05	22.78	9
77.5	38.30	40.56	46.36	52.16	61.01	62.19	77.70	88.70	89.30	89.90	90.10	66.73	382.78	19.56	9
80.0	--	33.71	38.77	44.22	57.11	61.13	67.36	87.97	90.95	91.02	--	62.43	537.96	23.19	6
82.5	--	20.74	34.56	42.44	56.07	63.33	73.67	85.66	91.92	91.98	--	58.91	942.20	30.70	7
85.0	5.10	46.11	50.60	55.09	72.29	89.92	92.17	92.93	93.00	93.07	93.53	71.13	833.14	28.86	9
87.5	--	36.71	44.85	52.07	63.89	67.90	87.92	93.01	93.07	95.41	--	69.29	664.20	25.77	7
90.0	47.88	60.24	64.89	72.51	85.00	86.67	93.99	94.77	95.37	95.96	98.22	81.60	314.48	17.73	13
92.5	52.14	71.85	73.00	77.30	89.65	95.00	95.41	95.87	95.98	96.02	99.28	85.84	230.48	15.18	10
95.0	--	86.87	87.98	89.51	94.64	96.54	96.98	97.02	97.77	98.81	--	94.08	26.06	5.10	6
97.5	96.10	98.99	99.17	99.82	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.01	6.94	2.63	24

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Fourth-quartile storms; storm duration 6 to 12 hours															
2.5	0	0	0	0	0	0	1.85	3.82	4.88	7.13	16.20	3.95	42.03	6.48	91
5.0	1.66	2.95	3.00	4.21	4.94	7.00	11.40	20.84	22.79	23.92	24.53	11.36	81.34	9.02	35
7.5	1.87	3.57	3.77	4.49	10.46	15.12	22.18	24.07	24.09	25.00	25.50	14.53	98.07	9.90	27
10.0	4.14	4.97	7.06	8.75	13.75	18.54	23.28	24.96	25.00	25.61	31.30	17.41	111.57	10.56	36
12.5	0	5.05	5.66	9.35	13.20	22.79	24.93	25.90	26.56	29.04	34.01	18.87	153.79	12.4	35
15.0	8.18	13.64	14.82	16.66	24.07	25.05	26.70	28.58	29.99	31.78	33.00	23.37	96.18	9.81	24
17.5	8.47	10.51	10.73	12.08	16.67	27.08	27.93	28.75	30.76	32.90	41.38	22.90	142.84	11.95	24
20.0	8.89	9.32	9.80	13.89	18.94	25.25	28.07	30.04	31.01	35.52	39.79	23.55	130.99	11.45	27
22.5	8.11	13.06	14.21	18.56	21.19	29.68	33.00	38.62	40.52	41.25	45.09	27.73	188.95	13.75	24
25.0	13.06	20.81	22.10	28.13	29.03	30.17	38.32	41.25	41.25	41.92	43.93	31.62	117.31	10.83	19
27.5	11.11	14.97	20.77	24.23	30.19	31.86	32.20	33.49	39.36	42.59	43.27	29.09	130.90	11.44	20
30.0	12.02	17.75	22.53	24.94	32.20	33.70	38.38	41.25	42.34	43.43	44.34	31.70	138.02	11.75	21
32.5	3.18	24.55	26.94	28.12	30.78	32.20	33.42	38.99	41.26	43.81	45.08	30.62	159.97	12.65	20
35.0	23.02	29.09	29.86	30.79	33.76	37.84	42.86	45.46	45.52	45.54	47.44	36.89	103.24	10.16	20
37.5	4.94	14.03	15.66	16.34	20.15	26.67	33.44	42.97	45.54	45.54	45.96	27.64	224.43	14.98	21
40.0	26.32	28.90	29.61	30.99	32.20	32.58	36.85	40.20	44.33	45.62	46.01	35.22	61.19	7.82	18
42.5	5.63	11.97	22.99	27.33	31.48	35.95	41.25	43.39	45.77	46.47	46.47	32.05	208.08	14.43	14
45.0	9.48	18.81	18.97	19.32	19.61	29.37	34.23	37.84	38.46	39.04	44.45	28.04	139.61	11.82	14
47.5	13.95	22.24	26.67	27.61	29.85	32.20	34.62	41.09	41.25	43.33	45.91	31.95	122.48	11.07	15
50.0	--	14.76	22.54	24.19	29.92	42.95	43.73	44.61	45.06	45.62	--	32.96	227.01	15.07	7
52.5	.48	13.92	14.40	19.66	28.91	31.02	32.20	32.86	35.52	41.51	46.06	26.91	200.79	14.17	14
55.0	7.85	16.76	20.64	24.84	25.73	27.62	36.37	39.44	44.88	47.24	48.80	30.41	180.45	13.43	12
57.5	2.17	8.83	16.25	20.07	29.33	31.37	33.90	41.75	44.60	45.35	56.94	30.10	314.45	17.73	21
60.0	4.96	14.44	16.54	18.15	28.43	35.59	35.59	40.54	42.85	44.53	55.84	30.78	258.04	16.06	13
62.5	1.66	10.36	18.68	19.05	19.77	26.92	36.76	37.65	38.24	42.87	66.66	29.12	363.43	19.06	11
65.0	2.94	5.91	6.46	12.77	29.49	33.43	38.95	63.04	73.05	75.77	79.93	38.03	789.14	28.09	10
67.5	4.03	19.03	19.89	26.09	29.84	39.74	41.53	41.53	43.14	43.14	45.54	33.66	318.26	17.84	19
70.0	3.22	7.17	9.40	18.07	22.90	36.59	45.75	48.31	48.31	49.66	62.38	33.26	526.44	22.94	25
72.5	4.39	18.92	25.00	27.18	31.16	42.31	44.93	52.48	52.54	52.54	81.21	38.97	511.38	22.61	19
75.0	12.21	21.93	30.49	33.33	36.08	48.02	54.24	54.24	54.24	55.02	61.21	43.01	446.46	21.13	28
77.5	15.97	33.33	37.82	39.04	44.14	45.67	47.52	54.24	54.24	54.24	59.73	44.20	332.77	18.24	34
80.0	38.58	43.98	45.71	46.70	48.81	50.15	54.37	58.47	59.32	59.96	66.73	50.51	197.86	14.07	48
82.5	34.41	48.28	50.30	50.50	58.26	60.17	61.97	68.40	71.74	74.95	84.06	59.24	344.59	18.56	41
85.0	33.86	48.82	51.84	53.41	70.45	74.66	79.28	80.21	80.51	83.79	91.00	67.12	487.39	22.08	40
87.5	40.17	51.93	52.53	54.07	69.91	81.21	83.51	84.75	86.62	89.74	92.39	70.53	461.23	21.48	48
90.0	24.69	49.22	56.89	58.25	72.31	86.42	90.75	93.35	94.44	95.07	98.31	73.29	654.24	25.58	55
92.5	41.72	61.65	69.44	73.26	80.20	89.74	93.11	95.22	95.96	96.42	99.44	79.42	460.71	21.46	63
95.0	38.15	69.52	74.78	83.60	89.35	95.82	96.69	97.35	97.83	98.18	100.00	83.73	455.87	21.35	55
97.5	67.78	93.87	96.57	97.48	98.83	100.00	100.00	100.00	100.00	100.00	100.00	92.86	251.56	15.86	112

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples	
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th					90th
Fourth-quartile storms; storm duration 12 to 24 hours															
2.5	0	0	0	0	0	0.54	1.70	3.52	5.26	7.58	14.98	4.19	47.95	6.92	199
5.0	1.52	2.45	2.87	3.24	5.12	6.92	7.65	13.56	13.87	18.08	19.82	9.01	56.46	7.51	80
7.5	1.90	3.33	4.36	5.22	6.87	7.37	8.05	10.86	15.57	18.99	21.58	10.55	91.41	9.56	52
10.0	2.27	3.87	4.90	6.45	7.72	8.08	9.24	13.87	16.37	17.99	21.58	11.13	110.29	10.50	49
12.5	.23	3.65	4.90	7.23	8.07	8.99	10.16	14.54	16.39	19.09	21.58	11.99	128.93	11.35	42
15.0	1.30	3.54	4.65	4.93	5.97	7.96	10.50	17.21	17.62	19.11	24.61	11.98	149.64	12.23	36
17.5	.77	2.17	3.23	5.66	7.83	8.78	12.04	14.73	19.05	19.15	22.34	12.01	146.84	12.12	39
20.0	4.83	6.91	7.09	7.84	8.79	9.68	12.28	18.93	21.03	21.93	31.67	14.86	160.88	12.68	33
22.5	1.23	5.14	7.80	8.51	11.17	12.44	12.79	14.60	18.11	20.37	27.13	14.23	154.96	12.45	33
25.0	3.46	8.63	10.74	12.71	14.36	16.45	18.93	21.32	21.61	23.86	32.11	17.71	129.53	11.38	56
27.5	1.30	6.14	13.34	14.65	19.44	21.36	22.81	28.99	30.43	31.68	34.95	21.10	175.36	13.24	56
30.0	5.51	9.48	13.87	15.03	17.23	21.37	24.12	26.97	32.08	33.07	38.27	22.55	199.89	14.14	31
32.5	1.37	9.59	15.73	18.14	20.90	24.18	25.10	29.82	34.39	36.64	43.24	23.91	190.45	13.80	48
35.0	4.10	7.85	9.55	17.49	21.41	25.52	27.26	31.60	37.18	38.85	43.15	24.77	235.28	15.34	46
37.5	4.11	9.02	14.84	19.50	24.32	27.72	30.69	33.68	35.27	40.86	43.24	26.09	194.33	13.94	50
40.0	9.41	14.76	23.65	27.04	31.29	34.68	39.27	42.08	42.20	42.98	44.63	31.62	174.79	13.22	45
42.5	6.78	12.81	14.65	15.54	25.51	30.39	35.38	41.99	42.70	45.34	48.75	29.56	268.27	16.38	56
45.0	8.39	10.21	17.77	19.77	23.96	35.48	39.00	41.92	42.68	45.61	51.12	30.78	255.15	15.97	47
47.5	9.01	14.08	19.59	20.45	23.57	25.96	35.78	42.96	44.68	45.75	48.68	29.94	230.39	15.18	58
50.0	10.10	20.27	21.77	24.81	32.06	36.09	42.56	45.42	45.93	48.47	49.40	34.05	215.28	14.67	62
52.5	10.06	17.42	21.49	22.62	31.21	38.83	42.71	45.82	46.93	48.53	53.57	34.27	236.45	15.38	69
55.0	14.71	21.86	27.41	32.37	33.51	39.89	43.16	45.37	45.82	49.02	57.27	37.43	219.21	14.81	59
57.5	18.01	23.21	25.42	29.59	34.52	42.38	43.16	45.82	47.91	49.20	57.27	37.96	191.13	13.83	52
60.0	16.40	21.78	25.73	32.37	39.39	43.16	45.37	48.38	48.68	49.06	56.14	38.64	257.89	16.06	43
62.5	16.96	24.12	25.97	32.62	39.89	43.16	48.38	52.83	57.27	57.75	61.21	42.02	328.44	18.12	42
65.0	9.32	17.75	21.06	23.04	30.10	39.54	44.57	48.51	51.88	56.69	58.36	36.40	357.20	18.90	45
67.5	13.18	17.60	24.07	28.73	35.23	38.72	40.66	45.66	48.87	51.52	57.88	37.68	358.08	18.92	46
70.0	16.58	22.97	24.07	24.71	33.48	39.69	40.84	45.51	46.12	48.02	57.27	35.87	202.28	14.22	40
72.5	23.54	26.24	28.24	33.38	40.16	43.31	45.82	48.57	51.92	54.55	59.18	41.64	213.43	14.61	44
75.0	17.72	26.26	29.58	31.34	42.04	46.40	50.08	55.73	57.57	58.93	83.41	46.27	468.53	21.65	52
77.5	25.58	33.26	36.77	39.59	45.83	47.56	55.69	59.00	63.51	67.87	75.05	50.14	340.12	18.44	53
80.0	12.85	27.05	36.26	42.37	48.24	52.53	58.54	62.46	63.83	69.37	85.79	50.38	597.71	24.45	63
82.5	11.05	27.73	32.27	43.79	48.91	51.88	57.96	65.02	68.53	71.35	92.92	52.11	671.88	25.92	70
85.0	22.44	29.72	32.59	35.90	46.26	50.63	57.27	66.60	73.63	75.84	88.60	52.98	611.80	24.73	92
87.5	29.86	37.81	44.02	47.75	54.10	61.23	66.74	76.47	81.48	85.20	95.24	61.02	565.96	23.79	108
90.0	37.96	52.63	58.19	63.40	74.52	80.35	84.60	87.22	88.34	89.94	95.60	71.81	555.59	23.57	140
92.5	28.39	53.98	64.03	81.56	87.28	89.41	90.89	92.21	92.84	93.55	96.63	77.19	633.79	25.18	138
95.0	43.56	55.38	68.71	76.88	91.83	93.50	94.49	95.56	96.31	96.71	97.90	81.24	509.52	22.57	145
97.5	76.52	91.30	94.08	95.65	97.07	98.22	99.14	100.00	100.00	100.00	100.00	92.87	199.31	14.12	259

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Fourth-quartile storms; storm duration 24 to 72 hours															
2.5	0	0	0	0	0.76	1.99	4.01	6.46	7.79	9.45	13.13	4.74	37.55	6.13	166
5.0	1.35	3.17	3.67	4.63	6.39	7.92	13.16	15.77	21.04	22.83	29.92	12.66	119.60	10.94	83
7.5	2.80	5.60	6.44	6.84	7.79	11.00	14.49	17.90	24.76	29.03	33.19	15.16	144.79	12.03	69
10.0	3.75	7.67	7.83	8.63	10.10	13.25	18.13	22.75	25.00	30.48	35.06	17.40	145.19	12.05	52
12.5	1.11	4.83	6.92	7.67	10.35	12.26	15.11	18.75	19.03	25.60	30.78	14.18	100.53	10.03	44
15.0	2.51	7.54	7.90	10.23	13.16	14.10	19.10	21.17	23.35	24.69	31.37	16.61	105.69	10.28	52
17.5	2.45	7.19	8.06	10.83	12.22	16.35	20.95	24.63	25.39	27.13	32.51	17.23	115.00	10.72	50
20.0	2.92	4.05	6.16	6.95	11.51	14.05	19.12	25.00	26.22	30.87	35.14	16.99	145.79	12.07	54
22.5	4.02	6.25	8.47	9.21	13.64	17.75	22.87	26.99	29.62	33.97	37.63	19.45	155.48	12.47	49
25.0	7.79	9.77	10.86	11.38	13.45	19.12	26.99	31.22	33.68	36.71	40.32	22.07	159.38	12.62	51
27.5	11.53	12.23	13.63	14.00	15.79	23.16	26.83	33.45	33.82	36.50	40.59	23.94	139.70	11.82	43
30.0	9.36	14.72	16.36	17.32	19.95	26.99	30.93	34.32	37.10	40.37	44.92	26.31	145.58	12.07	40
32.5	9.19	14.88	16.98	18.10	19.90	22.13	24.09	37.92	39.98	41.21	46.33	26.41	176.31	13.28	48
35.0	12.93	20.68	20.73	21.30	24.04	26.22	36.88	40.87	42.86	43.76	46.49	30.36	144.60	12.02	42
37.5	12.57	21.80	22.48	23.89	25.18	26.28	26.93	30.03	31.14	36.59	43.01	27.54	87.56	9.36	37
40.0	12.60	20.93	24.32	25.44	27.83	31.84	32.83	34.23	37.93	40.88	46.20	29.54	126.17	11.23	38
42.5	15.85	26.55	26.99	28.54	29.74	33.37	36.17	37.97	40.39	42.21	46.30	33.00	90.74	9.53	50
45.0	11.24	15.55	17.85	19.39	25.46	32.58	39.06	41.54	42.67	43.35	44.89	29.93	178.63	13.37	52
47.5	13.90	19.52	20.96	25.42	30.00	33.75	37.48	43.53	43.97	45.48	48.31	32.80	164.19	12.81	43
50.0	18.58	28.00	28.99	30.23	31.69	37.16	41.18	44.84	46.78	47.07	48.23	36.31	136.22	11.67	35
52.5	12.40	20.98	21.69	22.60	32.37	34.85	40.58	42.96	43.22	44.58	48.96	32.95	162.47	12.75	36
55.0	16.52	25.11	28.14	29.92	36.93	41.50	45.05	47.72	48.38	49.20	52.07	37.95	148.02	12.17	44
57.5	16.43	23.90	26.21	28.89	30.19	38.02	40.96	47.19	48.60	49.38	53.14	36.00	176.27	13.28	51
60.0	24.33	29.76	31.44	34.66	39.49	41.75	44.08	49.13	50.00	50.93	53.05	40.79	127.96	11.31	55
62.5	27.28	30.90	31.93	34.68	39.99	44.98	50.34	52.21	52.66	53.32	54.99	43.18	122.81	11.08	47
65.0	13.27	31.73	32.43	34.00	40.00	45.31	51.97	54.76	56.18	56.44	58.40	42.36	247.26	15.72	43
67.5	25.11	33.51	33.88	37.14	40.00	43.77	52.55	54.86	56.18	57.85	59.85	43.97	209.17	14.46	47
70.0	12.94	35.78	37.22	38.43	44.41	45.74	46.88	50.87	54.20	56.18	61.00	43.62	218.69	14.79	49
72.5	20.80	31.81	33.07	33.19	38.60	46.21	49.30	51.50	53.28	54.48	58.54	42.82	183.40	13.54	47
75.0	26.00	30.44	34.09	35.05	36.71	46.21	53.17	56.72	57.62	58.59	61.40	44.38	192.71	13.88	60
77.5	33.21	39.57	41.05	44.91	48.64	53.21	56.55	61.56	62.63	63.07	67.90	52.30	226.16	15.04	59
80.0	23.26	39.22	41.48	47.86	53.71	57.87	59.51	62.86	63.59	65.33	69.57	52.48	279.55	16.72	83
82.5	34.80	42.30	46.25	50.17	53.28	58.27	62.92	66.63	68.78	70.36	76.95	57.39	236.68	15.38	80
85.0	37.66	50.72	52.04	52.62	59.21	64.60	70.91	74.28	76.26	77.83	83.38	62.72	310.69	17.63	90
87.5	37.66	42.82	53.98	57.88	60.92	71.60	75.40	79.63	80.65	84.80	88.82	65.68	402.19	20.05	99
90.0	47.68	57.23	60.77	61.93	64.20	67.80	76.99	80.81	83.71	86.38	95.46	70.58	289.10	17.00	110
92.5	51.83	62.61	67.14	69.76	76.92	78.79	83.38	87.61	89.37	91.87	96.19	76.77	256.75	16.02	126
95.0	62.31	73.49	76.13	78.58	83.14	87.10	91.16	93.92	95.03	96.02	98.13	83.51	200.25	14.15	145
97.5	82.85	89.29	92.58	94.22	96.07	97.67	98.74	99.57	100.00	100.00	100.00	93.99	81.48	9.03	229

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
Fourth-quartile storms; storm duration 0 to 72 hours															
2.5	0	0	0	0	0	0.81	2.10	4.49	5.86	7.97	13.82	4.19	42.12	6.49	474
5.0	1.55	2.86	3.24	3.73	5.18	7.25	11.28	13.88	18.02	19.89	24.21	10.88	89.76	9.47	200
7.5	2.26	3.83	4.95	5.94	7.37	8.60	12.29	17.90	20.36	24.05	31.25	13.34	122.35	11.06	149
10.0	3.14	4.97	7.00	7.73	8.69	11.01	15.33	19.34	21.92	24.18	31.67	14.86	131.24	11.46	143
12.5	.91	4.26	5.66	7.35	9.13	10.87	14.80	19.42	21.58	25.37	30.91	14.53	134.79	11.61	123
15.0	2.59	5.89	7.54	8.03	11.18	14.56	18.72	21.98	24.07	26.10	31.60	16.54	132.24	11.50	115
17.5	1.43	4.89	7.83	8.16	10.94	13.40	19.12	23.58	25.60	27.84	32.16	16.50	149.14	12.21	116
20.0	3.90	6.91	7.77	8.83	10.69	14.58	20.51	24.22	26.39	30.38	35.31	17.81	157.47	12.55	116
22.5	3.34	6.93	8.58	9.88	12.70	16.01	21.19	26.82	29.05	33.58	38.31	19.47	190.04	13.79	111
25.0	7.50	10.22	11.36	12.53	15.10	19.12	21.98	26.99	30.11	33.60	40.32	21.19	167.06	12.93	131
27.5	3.72	12.22	13.64	14.57	19.85	22.33	26.99	31.13	32.64	33.75	40.59	23.13	166.49	12.90	122
30.0	8.84	13.87	15.72	16.85	21.33	25.89	31.77	33.70	36.99	38.89	43.68	26.14	178.41	13.36	94
32.5	4.91	11.52	16.00	18.25	20.38	24.09	27.78	34.34	37.51	40.42	45.02	25.35	192.76	13.88	124
35.0	8.99	19.51	20.69	21.41	25.17	28.58	33.85	39.13	41.25	43.56	45.61	29.19	195.37	13.98	108
37.5	6.86	13.00	16.05	21.51	24.13	26.59	29.47	31.48	35.44	41.04	45.40	26.33	169.98	13.04	112
40.0	10.77	19.86	24.90	27.04	29.85	32.15	34.61	39.16	41.10	42.44	45.22	30.66	158.87	12.60	104
42.5	11.30	15.00	24.74	26.52	29.05	31.63	36.08	40.80	42.08	44.43	46.81	31.28	189.96	13.78	120
45.0	8.14	13.49	17.58	19.03	24.14	31.41	38.01	40.39	41.78	42.94	46.69	29.09	217.03	14.73	121
47.5	11.22	19.47	20.62	21.25	26.33	31.94	36.23	42.46	43.97	45.38	48.48	31.22	192.25	13.87	117
50.0	11.93	21.71	25.00	27.28	31.61	36.87	41.95	45.01	45.82	47.02	48.68	34.35	193.68	13.92	107
52.5	9.51	16.13	20.97	21.89	29.18	33.37	39.89	43.10	45.37	45.82	49.15	32.12	228.21	15.11	124
55.0	14.47	24.64	25.49	28.14	33.25	39.67	43.16	45.37	47.32	48.64	52.53	36.42	199.00	14.11	120
57.5	16.02	21.71	25.36	28.47	30.41	38.02	42.70	45.49	46.93	49.11	55.35	35.42	216.45	14.71	127
60.0	16.47	23.82	27.91	31.44	35.59	40.21	43.91	47.52	48.64	49.60	53.01	37.92	216.54	14.72	116
62.5	18.13	25.99	29.41	31.75	37.48	42.36	45.82	51.67	52.53	53.72	57.69	40.12	264.70	16.27	108
65.0	8.80	21.09	23.53	27.73	34.85	40.12	45.82	52.83	55.22	56.57	58.46	38.74	363.31	19.06	102
67.5	13.56	25.71	29.11	33.54	37.61	40.02	43.29	48.60	50.84	54.58	58.48	39.53	295.36	17.19	120
70.0	11.67	21.68	24.10	28.48	37.22	41.32	45.81	47.60	48.74	51.96	58.54	38.44	322.19	17.95	122
72.5	20.01	26.56	29.98	33.07	38.82	42.97	46.36	49.90	52.54	53.46	58.35	41.36	254.86	15.96	120
75.0	23.12	29.12	31.49	34.24	38.10	46.97	52.90	55.56	57.34	58.36	62.19	45.53	365.92	19.13	149
77.5	29.83	36.72	39.47	41.87	45.91	49.02	54.61	58.08	61.56	63.06	73.16	50.63	322.87	17.97	155
80.0	21.67	39.68	42.37	45.87	49.16	55.02	58.47	61.81	63.49	65.15	72.47	51.65	372.50	19.30	200
82.5	27.68	39.97	45.83	48.76	51.77	58.01	61.85	66.58	69.12	71.45	80.81	55.96	446.43	21.13	198
85.0	29.23	37.66	45.63	49.34	53.29	59.95	70.78	75.33	77.37	80.28	88.22	59.93	517.68	22.75	231
87.5	33.26	42.33	49.42	52.55	59.56	66.48	75.37	81.08	83.71	85.48	92.25	64.74	500.25	22.37	262
90.0	40.88	54.97	59.45	61.99	68.54	77.14	83.27	87.11	89.10	91.32	96.05	72.04	475.38	21.80	318
92.5	45.48	61.17	67.67	72.27	80.26	86.54	89.72	92.12	93.21	94.60	97.12	77.71	451.44	21.25	337
95.0	52.30	69.29	74.78	78.73	87.17	92.08	94.01	95.66	96.39	96.95	98.38	82.79	368.61	19.20	351
97.5	80.12	90.91	94.13	95.57	97.28	98.47	99.41	100.00	100.00	100.00	100.00	93.52	159.54	12.63	624

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First- through fourth-quartile storms combined; storm duration 0 to 6 hours															
2.5	0	0	0	0	0	0	0	0	0	0	4.99	1.66	31.64	5.62	404
5.0	1.86	3.98	4.31	5.49	9.00	12.73	18.20	20.39	23.05	25.32	36.68	16.13	192.19	13.86	101
7.5	2.00	5.09	6.02	8.03	10.83	14.75	17.76	25.76	28.81	32.87	44.97	19.15	271.46	16.48	116
10.0	2.72	6.52	7.94	11.28	16.71	20.70	27.63	34.83	38.12	45.12	55.46	25.52	384.37	19.61	158
12.5	2.15	9.50	13.55	14.55	21.27	27.98	34.60	38.23	43.23	50.80	63.04	30.50	487.55	22.08	113
15.0	6.96	15.16	18.40	20.59	32.15	36.17	39.78	50.10	53.60	60.00	72.05	37.71	524.31	22.90	108
17.5	8.80	16.52	17.65	20.78	26.38	40.31	48.25	60.68	64.74	68.37	76.89	41.04	644.73	25.39	136
20.0	12.49	19.89	22.14	25.50	32.35	43.40	53.63	63.42	67.17	71.55	82.04	44.76	675.73	25.99	128
22.5	6.94	17.88	19.63	23.73	33.17	45.56	60.37	67.90	75.22	77.02	86.29	46.63	860.28	29.33	141
25.0	7.98	20.55	25.26	32.00	39.86	49.25	58.85	71.05	76.87	77.84	85.50	48.83	783.10	27.98	119
27.5	10.37	24.17	26.85	30.83	42.43	52.17	59.95	67.50	70.27	76.84	84.15	49.41	684.40	26.16	135
30.0	17.56	31.43	38.84	45.13	54.95	62.67	73.15	77.03	81.48	84.35	89.14	58.49	697.45	26.41	111
32.5	13.25	28.19	33.10	37.10	48.20	57.97	68.18	75.16	78.74	82.31	87.81	54.50	733.66	27.09	155
35.0	15.43	41.53	50.33	54.14	61.43	66.96	77.98	82.34	86.62	87.56	92.39	63.67	704.05	26.53	81
37.5	22.96	34.07	38.93	43.65	54.21	65.27	74.70	81.86	84.83	88.03	92.48	60.53	706.19	26.57	108
40.0	23.62	43.99	51.41	57.34	67.26	76.56	81.15	85.98	88.25	89.15	93.26	66.76	737.26	27.15	118
42.5	24.77	40.86	49.59	54.51	64.99	72.45	79.18	86.20	88.31	89.03	94.09	66.15	655.39	25.60	106
45.0	19.80	38.80	46.23	60.38	73.73	78.96	80.79	84.94	89.13	90.72	94.39	67.14	775.62	27.85	118
47.5	23.05	41.25	55.99	60.78	68.59	79.48	82.99	87.97	89.15	90.33	94.99	68.42	683.68	26.15	85
50.0	32.00	44.17	53.87	60.61	70.44	75.10	84.29	87.12	89.60	90.88	94.22	69.48	579.90	24.08	132
52.5	21.72	44.48	54.55	60.60	72.86	80.34	83.14	87.78	90.29	92.44	96.34	69.18	736.21	27.13	95
55.0	40.63	55.36	58.33	62.99	73.83	83.51	87.94	90.97	92.89	93.88	96.36	74.04	528.12	22.98	109
57.5	40.39	50.00	60.47	67.30	75.20	82.52	85.71	88.49	90.68	92.37	96.36	73.62	513.72	22.67	89
60.0	33.89	56.57	65.26	74.34	82.15	85.19	88.35	92.39	93.75	94.48	96.81	75.52	648.07	25.46	111
62.5	31.42	58.08	64.28	70.43	77.21	86.05	88.80	91.19	92.89	93.43	97.13	75.05	619.75	24.89	108
65.0	36.60	62.21	67.62	70.01	76.40	86.23	89.93	93.77	94.56	96.28	97.47	76.00	654.14	25.58	63
67.5	48.81	68.06	69.73	73.82	78.77	87.69	90.80	92.96	94.07	95.00	97.42	79.18	409.33	20.23	145
70.0	28.27	69.52	74.65	77.58	84.94	89.40	93.21	94.32	94.76	95.51	97.84	79.87	546.04	23.37	88
72.5	43.05	69.30	76.54	82.57	87.15	91.75	93.52	94.77	95.20	96.09	97.92	82.17	415.60	20.39	106
75.0	55.09	73.47	77.79	80.28	85.71	90.79	94.33	96.00	96.51	96.94	98.08	84.17	283.77	16.85	94
77.5	68.14	81.82	83.67	85.54	90.27	91.72	93.71	95.69	96.78	97.74	98.86	87.58	179.69	13.41	94
80.0	72.10	85.83	87.21	88.98	91.42	93.83	95.65	96.93	97.14	98.25	99.24	89.81	152.62	12.35	97
82.5	74.94	85.86	88.16	89.18	92.06	94.83	96.37	97.19	97.60	98.26	99.18	89.62	226.15	15.04	100
85.0	78.30	86.34	91.09	93.08	95.10	96.59	97.79	98.19	98.48	98.72	99.11	91.66	192.97	13.89	76
87.5	85.83	92.26	93.17	94.48	95.44	96.70	98.03	98.52	98.66	98.83	99.40	93.41	134.21	11.58	77
90.0	87.88	92.20	93.70	94.58	95.92	96.96	98.20	98.84	98.98	99.15	99.59	94.55	70.90	8.42	111
92.5	91.45	95.32	95.75	96.63	97.47	98.33	98.63	99.11	99.40	99.61	100.00	95.90	58.22	7.63	87
95.0	94.43	96.12	97.05	97.37	97.85	98.37	99.09	99.25	99.37	99.56	100.00	97.41	11.03	3.32	52
97.5	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.89	.59	.77	365

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First- through fourth-quartile storms combined; storm duration 6 to 12 hours															
2.5	0	0	0	0	0	0	1.56	3.92	5.76	8.92	17.70	4.95	78.96	8.89	631
5.0	2.19	3.48	4.44	5.72	8.42	13.14	19.42	24.09	26.50	31.64	46.43	18.68	317.20	17.81	284
7.5	3.20	5.99	8.30	10.87	14.64	20.69	27.12	32.32	36.53	41.41	54.32	25.14	425.26	20.62	262
10.0	4.86	9.05	11.12	13.93	20.70	26.02	32.82	40.47	48.07	54.16	73.22	32.05	604.67	24.59	285
12.5	5.60	11.29	12.85	14.81	21.24	29.72	34.51	42.92	50.37	57.39	79.66	34.27	678.15	26.04	248
15.0	7.35	16.06	17.61	21.11	30.31	34.51	42.32	49.85	57.06	61.70	82.60	39.38	669.87	25.88	246
17.5	8.34	13.12	17.11	20.85	28.11	38.26	44.82	52.83	58.51	62.97	80.25	39.95	671.75	25.92	235
20.0	10.01	15.12	19.42	23.94	30.99	39.37	46.89	61.82	66.81	69.59	85.86	43.41	751.85	27.42	231
22.5	10.47	14.77	17.63	21.16	29.34	37.52	46.52	59.10	66.13	71.07	83.46	42.51	765.95	27.68	222
25.0	11.40	21.26	28.81	30.80	37.89	44.84	56.20	63.84	70.46	74.37	85.42	47.95	705.01	26.55	211
27.5	14.17	22.61	30.88	32.20	41.29	50.26	60.32	67.80	71.31	79.32	88.71	50.86	734.90	27.11	209
30.0	12.19	23.12	31.73	32.72	43.43	48.98	61.28	72.53	74.80	80.74	88.86	51.61	762.37	27.61	215
32.5	13.54	23.09	32.20	34.31	44.84	52.26	65.60	74.26	79.14	82.27	88.47	52.55	797.09	28.23	227
35.0	15.65	27.28	32.41	34.73	44.56	53.76	65.48	75.17	79.92	83.34	92.48	54.34	771.20	27.77	178
37.5	14.65	21.39	26.63	32.66	44.61	52.79	66.85	77.80	81.70	84.72	90.07	53.46	841.26	29.00	182
40.0	21.13	31.60	33.93	38.49	47.25	54.58	66.84	77.26	80.93	84.63	91.20	56.86	691.38	26.29	171
42.5	15.48	29.50	34.99	40.84	51.37	61.08	70.46	77.52	81.21	84.38	91.33	57.62	744.15	27.28	169
45.0	13.81	26.78	34.11	41.17	51.76	59.97	75.16	80.57	84.00	86.34	91.87	57.66	855.41	29.25	162
47.5	14.52	24.37	31.56	35.48	48.93	61.38	70.43	80.15	84.44	88.12	93.24	57.15	877.79	29.63	173
50.0	16.46	33.41	40.66	46.88	60.23	70.27	76.56	80.70	83.16	86.09	92.27	61.51	732.19	27.06	154
52.5	14.97	29.09	33.17	38.92	54.25	63.14	75.40	81.13	84.00	88.64	95.19	59.38	845.53	29.08	180
55.0	25.31	34.29	38.54	46.99	55.44	67.66	76.96	82.81	84.50	88.45	93.95	62.20	723.23	26.89	170
57.5	16.44	31.36	36.62	41.37	54.49	68.42	78.70	83.73	86.31	88.66	95.89	60.79	847.06	29.10	168
60.0	18.50	35.59	42.78	48.27	59.67	67.95	75.31	84.00	86.80	89.98	95.26	63.16	732.86	27.07	172
62.5	28.38	37.27	45.47	50.07	63.82	73.65	81.66	87.43	89.84	91.30	97.10	66.56	710.34	26.65	166
65.0	30.76	46.19	58.29	62.96	72.01	77.04	81.18	85.88	88.30	91.68	96.53	69.69	626.97	25.04	157
67.5	29.50	44.07	47.70	55.05	68.25	77.99	81.70	87.54	89.87	91.68	96.98	68.81	651.37	25.52	203
70.0	24.92	45.69	49.11	55.50	66.25	78.35	82.96	88.92	90.75	93.27	97.62	68.65	713.27	26.71	188
72.5	27.43	52.49	57.77	64.70	75.70	82.39	86.00	89.82	90.99	93.71	98.03	72.59	634.68	25.19	200
75.0	33.33	52.90	56.54	66.20	77.63	82.82	87.04	91.14	92.16	93.71	98.50	73.51	627.95	25.06	184
77.5	39.89	54.24	59.93	65.29	78.17	84.39	88.99	92.18	93.31	94.00	98.23	75.69	510.43	22.59	215
80.0	45.88	58.11	63.51	68.76	80.02	85.71	88.76	92.21	93.77	95.12	98.27	76.96	454.48	21.32	221
82.5	50.30	62.13	70.31	76.87	83.03	88.62	90.82	94.46	95.52	96.45	98.63	80.66	396.83	19.92	201
85.0	53.34	75.17	79.36	81.17	87.92	91.48	93.44	95.72	96.82	98.01	98.95	84.21	337.95	18.38	208
87.5	62.36	82.67	84.43	86.76	90.06	93.24	95.08	96.73	97.33	98.12	99.47	87.15	270.55	16.45	220
90.0	58.90	86.18	88.51	90.69	93.31	95.08	96.64	97.73	98.01	98.31	99.49	88.09	312.30	17.67	214
92.5	74.15	88.21	90.99	92.54	94.56	96.12	97.29	98.13	98.43	98.92	100.00	90.78	204.52	14.30	233
95.0	83.83	92.71	94.84	95.82	96.96	97.83	98.43	98.96	99.21	99.30	100.00	93.14	182.06	13.49	187
97.5	96.79	98.93	99.46	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	97.99	65.03	8.06	518

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First- through fourth-quartile storms combined; storm duration 12 to 24 hours															
2.5	0	0	0	0	0.47	1.73	3.95	6.69	8.67	11.38	18.61	6.42	107.40	10.36	1,276
5.0	2.32	4.72	6.52	8.00	13.15	17.19	20.33	25.39	28.94	33.68	48.27	20.94	346.56	18.62	637
7.5	4.61	8.05	9.96	13.01	21.58	27.10	31.67	38.55	43.39	47.70	58.95	29.24	449.31	21.20	644
10.0	6.59	11.03	13.87	17.86	26.32	34.74	38.85	48.91	52.90	58.66	69.98	35.78	579.41	24.07	615
12.5	8.14	15.27	19.58	22.03	33.06	39.33	44.18	52.13	58.49	65.24	78.04	40.79	651.97	25.53	567
15.0	10.09	19.33	23.44	27.21	37.91	45.71	51.28	56.84	64.19	70.60	82.08	45.05	678.32	26.04	547
17.5	9.72	19.88	27.51	33.34	42.02	50.72	55.08	60.79	66.05	71.84	82.02	47.49	686.84	26.21	522
20.0	9.30	21.58	29.56	39.32	47.50	53.59	58.62	63.33	70.27	75.56	84.18	50.34	686.01	26.19	469
22.5	12.24	23.40	32.09	43.92	52.42	57.80	63.85	67.58	71.35	76.87	85.95	52.97	685.04	26.17	458
25.0	13.28	20.73	25.35	32.13	46.05	57.14	67.82	71.81	73.74	76.76	86.71	52.10	767.97	27.71	451
27.5	13.13	23.19	30.49	34.91	49.70	59.44	71.68	78.47	80.35	82.01	87.46	54.91	813.77	28.53	443
30.0	14.12	27.69	34.60	40.59	52.59	63.37	74.75	82.43	83.59	85.20	89.61	57.85	821.90	28.67	379
32.5	13.91	24.87	31.06	38.00	50.66	58.62	73.73	85.35	87.29	89.43	92.27	57.57	891.21	29.85	379
35.0	12.50	27.20	34.85	42.22	54.88	62.37	74.01	87.20	90.09	93.02	95.27	59.99	911.10	30.18	350
37.5	13.15	26.42	31.23	36.04	50.97	58.87	72.70	81.52	86.47	90.14	95.53	57.35	901.08	30.02	352
40.0	14.42	28.32	34.62	39.48	49.75	58.33	70.12	80.06	86.60	90.20	96.00	57.93	867.05	29.45	348
42.5	15.54	31.02	36.11	41.72	52.02	59.58	71.46	79.54	86.66	91.77	95.52	59.08	819.60	28.63	330
45.0	19.06	34.07	39.18	43.92	54.71	64.90	76.27	81.40	88.38	92.22	96.43	61.66	814.62	28.54	313
47.5	16.22	27.90	39.22	44.84	53.42	62.50	73.95	81.63	86.79	91.64	96.26	60.12	842.81	29.03	339
50.0	18.71	32.70	38.94	44.00	52.82	64.80	72.57	81.09	85.18	90.41	96.26	60.10	802.03	28.32	329
52.5	19.79	31.14	39.89	44.89	54.73	63.67	76.81	85.42	89.35	93.14	97.10	61.96	838.40	28.96	351
55.0	20.55	33.40	40.04	43.35	55.12	62.37	72.26	81.40	85.63	89.94	94.80	60.84	743.02	27.26	314
57.5	24.03	39.53	43.27	48.95	59.00	63.59	74.20	83.44	89.54	91.67	96.95	63.69	691.15	26.29	325
60.0	24.69	42.04	46.66	50.92	61.93	72.31	82.28	88.80	91.75	93.30	97.18	66.88	713.68	26.71	300
62.5	32.44	47.12	51.99	57.31	62.52	72.91	80.65	87.32	91.15	93.44	97.25	68.96	580.13	24.09	296
65.0	30.98	46.24	55.94	59.64	69.10	78.27	82.64	88.86	93.27	94.51	97.78	70.45	637.45	25.25	309
67.5	33.65	48.55	52.90	60.42	70.11	77.55	84.41	90.77	93.25	94.59	97.79	71.14	615.11	24.80	311
70.0	35.79	45.83	51.77	58.43	69.60	77.06	83.50	87.74	90.87	93.72	97.53	70.59	567.33	23.82	273
72.5	39.83	51.35	55.84	61.19	69.95	78.57	83.87	89.81	94.19	95.76	98.12	72.52	540.86	23.26	307
75.0	42.03	55.65	60.26	65.20	73.72	81.73	85.54	89.98	93.52	95.00	98.24	74.71	490.81	22.15	299
77.5	45.83	61.67	66.15	70.29	77.29	84.34	88.00	91.93	94.26	96.25	98.66	77.58	417.19	20.43	328
80.0	48.68	62.46	67.23	71.26	79.66	86.15	89.12	92.54	94.67	96.06	98.11	78.27	449.09	21.19	319
82.5	49.00	64.28	69.59	73.64	81.04	87.61	91.15	94.63	96.18	97.17	98.88	79.56	471.63	21.72	317
85.0	43.68	64.13	71.86	75.18	81.28	86.15	90.92	94.28	95.92	97.02	98.54	78.89	479.01	21.89	350
87.5	50.92	71.08	77.64	81.55	87.90	90.09	92.51	95.49	97.03	97.69	99.24	82.77	393.27	19.83	383
90.0	61.05	79.52	82.58	84.89	89.52	91.67	94.80	97.17	97.87	98.24	99.35	85.90	328.58	18.13	403
92.5	65.86	85.17	87.73	89.39	91.89	92.86	94.61	97.19	97.99	98.50	99.26	87.68	324.35	18.01	373
95.0	67.38	86.62	89.77	92.13	94.22	95.36	96.68	97.86	98.54	98.80	99.68	89.32	273.97	16.55	389
97.5	90.49	96.67	97.49	98.23	99.45	100.00	100.00	100.00	100.00	100.00	100.00	96.56	82.86	9.10	921

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First- through fourth-quartile storms combined; storm duration 24 to 72 hours															
2.5	0	0	0	0	1.58	3.42	5.64	8.96	12.01	16.11	29.06	9.28	203.46	14.26	1,246
5.0	2.36	5.03	6.05	7.18	11.06	14.95	21.02	26.56	33.74	39.69	50.67	21.99	431.74	20.78	620
7.5	4.01	7.67	9.31	11.56	15.76	22.33	30.57	37.67	42.77	48.66	62.02	28.15	520.11	22.81	533
10.0	5.18	9.35	11.32	13.06	18.09	26.48	35.48	46.58	53.01	57.73	69.94	33.33	676.02	26.00	500
12.5	4.84	10.04	11.92	15.22	21.10	32.09	41.77	56.77	64.68	69.99	81.42	38.37	853.30	29.21	440
15.0	6.73	10.81	12.55	14.89	23.09	31.45	43.21	54.01	60.02	69.68	83.42	38.55	841.79	29.01	432
17.5	6.19	12.00	14.35	16.86	25.00	30.37	40.72	55.56	62.35	69.18	83.17	39.18	835.79	28.91	391
20.0	6.27	13.04	15.55	19.09	26.15	34.81	46.94	61.70	69.19	75.39	86.12	41.87	884.19	29.74	352
22.5	5.56	12.08	16.25	19.62	26.71	36.09	45.79	56.92	61.86	73.66	86.71	41.08	867.28	29.45	354
25.0	7.96	12.31	16.34	21.26	27.83	35.62	47.33	58.28	62.45	72.90	85.76	42.04	840.33	28.99	327
27.5	9.76	13.41	16.51	20.40	30.06	34.66	46.54	60.50	63.60	74.88	87.46	42.45	842.21	29.02	322
30.0	9.82	18.94	22.10	27.01	32.13	36.81	45.76	59.41	63.41	69.05	87.36	43.69	735.29	27.12	317
32.5	10.25	16.85	20.04	23.09	33.71	39.11	46.52	54.81	59.08	64.01	82.59	42.37	683.65	26.15	312
35.0	11.03	20.04	23.66	28.02	36.81	43.66	51.31	61.34	63.18	65.49	84.66	45.46	690.98	26.29	336
37.5	12.73	20.26	25.06	28.65	38.10	48.42	59.49	64.66	66.13	68.76	81.55	47.54	673.51	25.95	314
40.0	13.61	22.52	25.88	31.04	39.03	47.56	60.20	67.63	69.38	73.42	84.06	48.98	690.59	26.28	333
42.5	18.75	27.24	29.05	31.12	38.00	43.73	57.42	69.07	71.20	76.02	87.72	50.15	663.34	25.76	311
45.0	13.63	25.23	30.17	36.53	43.02	46.93	57.99	69.96	72.41	78.56	91.47	51.39	743.08	27.26	301
47.5	12.73	21.51	29.90	35.11	43.57	50.76	58.45	68.86	72.37	80.65	91.15	51.20	770.84	27.76	312
50.0	16.93	23.47	29.15	34.05	43.73	53.75	62.57	71.54	75.92	79.07	90.32	53.06	741.33	27.23	324
52.5	21.73	32.12	36.36	40.00	44.48	54.89	61.84	68.75	72.66	77.73	88.92	54.43	611.64	24.73	323
55.0	28.38	41.87	44.26	47.64	52.08	58.73	64.39	75.70	78.66	82.97	90.53	59.68	533.09	23.09	333
57.5	28.89	43.67	48.20	50.26	59.34	64.19	72.53	79.27	82.86	84.47	91.70	63.03	557.67	23.62	335
60.0	29.52	42.37	44.21	49.01	54.24	63.91	73.56	81.81	84.31	86.69	93.98	63.17	575.42	23.99	326
62.5	28.73	44.65	50.98	54.07	62.02	67.68	75.22	84.50	87.08	91.58	95.59	65.74	595.01	24.39	366
65.0	22.51	39.49	45.87	51.39	61.09	67.14	76.12	83.86	87.18	91.84	97.34	64.42	689.07	26.25	346
67.5	28.62	42.42	46.66	53.59	61.54	68.77	76.63	84.22	86.75	89.07	96.99	65.88	605.14	24.60	314
70.0	34.55	46.21	50.66	57.11	64.32	71.69	81.04	89.19	91.37	94.53	98.54	69.27	608.47	24.67	334
72.5	31.67	49.26	53.28	58.76	70.18	77.27	82.84	89.19	92.18	94.41	98.23	71.15	586.56	24.22	323
75.0	33.96	49.38	54.77	57.42	63.94	74.58	81.77	89.19	91.75	94.60	98.54	70.10	580.30	24.09	347
77.5	35.42	53.52	57.85	62.22	69.22	77.57	84.89	90.65	93.13	95.76	98.21	72.36	560.50	23.67	336
80.0	35.54	50.67	57.87	60.96	66.10	74.46	80.16	89.32	92.61	94.47	98.42	70.55	579.83	24.08	348
82.5	42.12	55.46	61.27	65.36	71.31	78.92	84.09	89.54	93.38	94.99	98.04	74.23	454.18	21.31	363
85.0	45.79	63.38	67.73	70.93	76.95	82.40	88.08	92.27	94.60	96.39	98.53	77.85	402.12	20.05	390
87.5	52.55	68.85	72.41	75.30	80.00	84.25	87.79	94.19	95.32	97.06	98.59	79.94	357.98	18.92	407
90.0	54.61	65.12	70.87	76.36	82.26	85.03	88.37	94.45	96.37	97.54	98.91	80.90	315.54	17.76	444
92.5	67.27	77.63	80.64	82.98	86.69	89.72	92.51	95.49	96.89	98.03	99.15	86.34	177.17	13.31	452
95.0	77.56	84.88	87.32	89.71	92.63	94.76	96.15	97.56	98.19	98.81	99.58	90.81	117.15	10.82	470
97.5	89.92	95.02	96.25	97.22	98.42	99.31	100.00	100.00	100.00	100.00	100.00	96.82	33.20	5.76	1,004

Supplement 3. Trimmed percentiles and statistics for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											Average (percent)	Variance (percent)	Standard deviation (percent)	Number of samples
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th				
First- through fourth-quartile storms combined; storm duration 0 to 72 hours															
2.5	0	0	0	0	0	1.21	3.38	6.13	7.98	11.11	21.12	6.62	133.17	11.54	3,557
5.0	2.27	4.36	5.88	7.19	11.02	15.40	20.00	25.00	29.31	34.55	47.95	20.65	366.79	19.15	1,642
7.5	3.99	7.29	9.02	11.41	16.36	23.65	29.59	36.40	40.95	45.81	58.43	27.42	463.80	21.54	1,555
10.0	5.36	9.30	11.93	14.78	20.81	29.41	36.33	45.37	51.07	55.65	69.20	33.27	604.11	24.58	1,558
12.5	6.17	11.90	14.56	18.07	25.00	34.53	41.16	51.48	58.10	64.93	79.30	37.98	718.33	26.80	1,368
15.0	7.79	13.90	17.75	21.64	30.75	38.79	47.18	54.80	60.00	67.65	81.82	41.30	727.21	26.97	1,333
17.5	8.33	14.67	18.96	23.01	32.13	41.67	50.87	58.48	62.83	68.98	81.82	42.90	739.69	27.20	1,284
20.0	9.07	16.41	21.22	25.10	35.03	45.92	55.20	62.56	67.97	73.83	83.90	45.85	770.94	27.77	1,180
22.5	7.81	16.34	20.70	25.00	36.49	47.92	57.10	65.29	69.44	75.33	85.43	46.65	804.41	28.36	1,175
25.0	9.47	18.86	23.16	27.62	37.17	48.48	58.73	69.13	72.61	76.04	85.88	47.99	796.36	28.22	1,108
27.5	11.44	20.08	24.71	30.41	37.62	51.03	60.77	71.35	77.31	80.00	87.37	49.86	817.74	28.60	1,109
30.0	12.87	23.55	29.32	32.64	41.19	52.44	63.29	74.37	79.73	83.33	88.55	52.21	807.70	28.42	1,022
32.5	11.86	21.33	27.22	32.96	41.34	51.39	59.82	73.02	78.37	83.45	90.69	51.65	826.91	28.76	1,073
35.0	12.26	24.73	29.89	35.35	44.84	55.46	63.18	74.22	79.99	86.43	93.88	54.08	836.02	28.91	945
37.5	13.84	24.06	28.34	33.78	45.06	54.58	64.60	74.16	78.46	83.52	92.27	53.74	815.56	28.56	956
40.0	15.72	27.42	32.06	37.04	47.26	57.42	67.25	76.03	80.07	85.12	93.17	55.74	792.10	28.14	970
42.5	18.76	29.10	32.96	37.52	46.30	57.41	68.43	76.46	79.68	85.76	94.14	56.60	760.70	27.58	916
45.0	15.29	30.26	36.63	40.83	49.35	60.66	71.73	79.56	82.23	87.93	95.00	58.20	823.17	28.69	894
47.5	14.07	26.41	34.55	40.68	50.00	59.35	68.82	79.48	83.05	86.96	95.33	57.27	837.19	28.93	909
50.0	18.71	30.94	36.93	42.68	52.60	62.96	71.79	79.38	83.33	86.96	94.59	59.22	767.45	27.70	939
52.5	20.96	31.86	37.85	42.37	52.60	61.51	71.53	80.77	84.41	88.40	96.14	59.63	772.68	27.80	949
55.0	25.00	39.67	43.67	47.86	56.05	63.41	73.01	81.25	84.95	88.45	94.35	62.23	658.01	25.65	926
57.5	25.56	40.33	45.46	49.69	59.39	67.71	75.66	83.32	85.67	89.12	95.30	63.88	664.96	25.79	917
60.0	25.93	42.20	45.82	50.66	61.75	70.76	80.13	85.61	89.02	91.60	95.92	65.90	675.41	25.99	909
62.5	29.74	45.39	51.65	55.63	63.44	72.67	79.88	87.37	89.78	92.55	96.39	67.98	622.01	24.94	936
65.0	26.09	44.40	51.44	57.69	66.26	74.64	80.71	86.97	90.38	93.49	97.39	68.33	669.39	25.87	875
67.5	33.39	46.67	52.92	58.48	68.63	76.75	82.76	88.28	91.43	93.49	97.27	70.15	607.52	24.65	973
70.0	33.94	46.85	53.17	59.94	68.72	77.39	83.95	89.19	92.35	94.25	97.92	70.60	621.88	24.94	883
72.5	33.87	51.24	56.76	62.76	73.00	81.36	86.20	91.03	93.63	95.13	98.05	73.16	573.28	23.94	936
75.0	36.11	54.24	57.88	61.96	73.28	81.06	86.09	91.07	93.43	95.62	98.29	73.70	547.01	23.39	924
77.5	41.58	57.63	62.62	67.53	77.35	84.14	88.74	92.64	93.98	95.93	98.52	76.33	482.64	21.97	973
80.0	43.25	59.07	63.40	67.02	76.32	84.39	88.74	92.82	94.40	96.14	98.47	76.39	498.28	22.32	985
82.5	48.70	62.12	67.53	72.19	80.23	85.88	90.21	94.21	95.66	96.98	98.63	78.84	445.40	21.10	981
85.0	49.97	67.44	72.08	76.13	81.77	87.78	91.92	95.07	96.32	97.47	98.73	80.52	415.44	20.38	1,024
87.5	54.57	72.66	77.33	81.00	86.25	89.91	93.69	95.70	97.11	97.82	99.22	83.35	351.42	18.75	1,087
90.0	59.59	76.44	80.54	83.23	87.69	91.64	95.03	97.15	97.83	98.28	99.27	85.23	313.24	17.70	1,172
92.5	70.25	82.42	85.49	88.16	91.21	93.48	95.67	97.47	98.17	98.65	99.50	88.41	228.92	15.13	1,145
95.0	75.57	87.32	89.96	91.91	94.33	95.82	97.26	98.19	98.66	99.10	99.67	91.00	182.48	13.51	1,098
97.5	92.49	97.11	98.03	98.71	99.66	100.00	100.00	100.00	100.00	100.00	100.00	97.35	52.34	7.23	2,808

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First-quartile storms; storm duration 0 to 6 hours											
2.5	1.33	2.20	2.50	2.78	3.95	6.07	7.82	10.00	10.51	10.30	14.42
5.0	4.51	7.39	8.36	9.41	11.38	13.71	16.17	19.55	21.10	22.89	28.79
7.5	7.84	12.62	14.58	15.99	18.70	21.25	24.50	28.97	31.43	34.69	41.86
10.0	11.55	17.96	20.62	22.43	25.94	29.17	33.13	38.46	41.51	45.50	53.21
12.5	15.66	23.31	26.49	28.65	32.89	36.90	41.54	47.36	50.90	55.01	62.65
15.0	20.18	28.76	32.24	34.68	39.60	44.38	49.73	55.57	59.32	63.07	70.53
17.5	24.66	33.81	37.57	40.34	45.81	51.37	57.13	62.71	66.23	69.60	76.44
20.0	29.24	38.66	42.58	45.54	51.52	57.78	63.77	68.80	71.97	74.99	81.34
22.5	33.42	43.19	47.24	50.27	56.67	63.05	69.29	73.69	76.44	79.04	85.03
25.0	37.62	47.66	51.71	54.75	61.34	67.46	73.79	77.60	79.74	81.95	87.68
27.5	41.25	51.38	55.48	58.61	65.27	71.18	77.23	80.64	82.27	84.27	89.50
30.0	44.61	54.82	58.92	61.99	68.67	74.48	80.25	83.17	84.51	86.21	90.97
32.5	47.80	58.07	62.14	65.21	71.68	77.30	82.57	85.14	86.38	87.86	92.09
35.0	51.00	60.99	65.02	68.10	74.30	79.97	84.61	86.90	88.10	89.44	93.23
37.5	53.59	63.26	67.37	70.49	76.40	82.48	86.33	88.41	89.66	90.91	94.20
40.0	56.29	65.62	69.76	72.76	78.35	84.49	87.78	89.71	91.02	92.13	95.13
42.5	58.92	67.80	71.94	74.96	80.08	85.86	88.72	90.58	91.92	93.05	95.87
45.0	61.51	69.61	73.87	76.97	81.62	87.02	89.63	91.42	92.65	93.76	96.49
47.5	63.53	71.38	75.65	78.77	82.85	87.85	90.28	92.02	93.19	94.30	96.94
50.0	65.87	73.19	77.46	80.58	84.19	88.53	91.00	92.66	93.72	94.82	97.39
52.5	67.84	74.75	78.90	82.01	85.36	89.17	91.61	93.17	94.21	95.31	97.77
55.0	69.63	76.23	80.32	83.26	86.50	89.86	92.23	93.72	94.74	95.76	98.09
57.5	70.72	77.74	81.72	84.38	87.54	90.52	92.78	94.18	95.23	96.19	98.38
60.0	72.03	79.18	83.09	85.56	88.68	91.26	93.36	94.67	95.69	96.54	98.60
62.5	72.61	80.44	84.23	86.55	89.66	91.88	93.81	95.07	96.08	96.85	98.78
65.0	73.24	81.77	85.55	87.75	90.69	92.58	94.30	95.52	96.47	97.13	98.91
67.5	73.40	83.11	86.78	88.90	91.63	93.25	94.75	95.92	96.80	97.37	99.05
70.0	73.95	84.32	87.83	89.85	92.53	93.88	95.20	96.34	97.10	97.59	99.12
72.5	74.42	85.46	88.81	90.67	93.24	94.42	95.60	96.72	97.38	97.82	99.20
75.0	75.38	86.67	89.95	91.67	93.96	95.03	96.06	97.12	97.67	98.05	99.29
77.5	76.68	87.81	90.95	92.56	94.58	95.57	96.51	97.50	97.94	98.28	99.39
80.0	78.62	88.82	91.90	93.41	95.15	96.09	96.96	97.86	98.19	98.50	99.49
82.5	80.81	89.96	92.93	94.27	95.69	96.58	97.40	98.21	98.46	98.74	99.60
85.0	83.23	91.14	94.02	95.20	96.33	97.12	97.86	98.55	98.73	98.98	99.70
87.5	85.85	92.39	94.99	95.93	96.92	97.61	98.29	98.84	98.97	99.20	99.79
90.0	88.36	93.80	96.02	96.69	97.56	98.09	98.68	99.11	99.19	99.40	99.86
92.5	91.00	95.40	97.11	97.49	98.27	98.59	99.06	99.36	99.42	99.59	99.91
95.0	93.49	96.99	98.19	98.28	99.02	99.08	99.39	99.59	99.64	99.75	99.96
97.5	96.16	98.70	98.90	99.05	99.27	99.50	99.71	99.81	99.85	99.91	99.99

Supplement 4. Untrimmed and smoothed percentiles for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First-quartile storms; storm duration 6 to 12 hours											
2.5	2.54	4.42	5.56	7.06	8.47	7.78	10.13	13.45	16.16	17.93	24.21
5.0	6.63	9.93	11.84	13.40	16.10	17.89	22.37	26.98	30.83	34.02	42.21
7.5	10.63	15.42	18.05	19.69	23.51	27.28	33.53	39.08	43.78	48.13	57.81
10.0	14.63	21.03	24.21	26.03	30.90	35.80	43.23	49.32	54.65	59.81	70.42
12.5	18.70	26.44	29.98	32.02	37.70	43.15	50.95	57.24	62.93	68.44	79.29
15.0	22.70	31.59	35.30	37.63	43.83	49.54	57.20	63.36	69.10	74.35	84.87
17.5	26.62	36.32	40.03	42.66	49.06	54.71	61.91	67.84	73.35	78.14	88.15
20.0	30.60	40.61	44.24	47.18	53.68	59.40	65.91	71.73	76.89	80.90	90.28
22.5	34.52	44.31	47.98	51.29	57.58	63.32	69.15	74.87	79.54	82.71	91.31
25.0	38.14	47.67	51.53	55.12	61.22	66.87	72.15	77.74	81.77	84.28	92.10
27.5	41.67	50.93	54.95	58.67	64.79	70.32	75.01	80.37	83.69	85.65	92.88
30.0	45.04	53.88	58.11	61.94	68.12	73.55	77.79	82.62	85.27	86.79	93.49
32.5	48.03	56.86	61.17	65.01	71.18	76.44	80.34	84.46	86.49	87.81	94.00
35.0	50.60	60.00	64.23	67.82	73.97	79.05	82.59	86.11	87.62	88.74	94.55
37.5	52.71	62.81	67.09	70.42	76.34	81.20	84.60	87.56	88.67	89.58	95.00
40.0	54.13	64.66	69.22	72.48	77.85	82.49	85.96	88.65	89.52	90.38	95.31
42.5	55.01	66.28	71.14	74.11	78.97	83.32	86.89	89.56	90.32	91.19	95.64
45.0	55.25	67.30	72.61	75.40	79.70	83.72	87.37	90.23	90.97	91.93	95.92
47.5	55.40	67.99	73.70	76.38	80.26	83.96	87.70	90.71	91.57	92.79	96.23
50.0	55.50	68.57	74.48	77.14	80.66	84.03	87.71	90.95	91.97	93.55	96.56
52.5	55.69	69.47	75.34	78.04	81.43	84.33	87.91	91.21	92.35	94.39	96.96
55.0	56.37	70.35	76.02	78.85	82.00	84.56	87.97	91.37	92.67	95.02	97.35
57.5	57.55	71.47	76.85	79.63	82.61	84.96	88.22	91.59	93.05	95.58	97.75
60.0	59.12	72.47	77.57	80.34	83.11	85.34	88.46	91.84	93.39	95.96	98.09
62.5	60.28	73.63	78.31	80.91	83.64	85.84	88.85	92.12	93.81	96.30	98.40
65.0	61.11	74.76	79.05	81.34	83.93	86.37	89.25	92.43	94.25	96.43	98.65
67.5	61.21	75.71	79.78	81.79	84.45	87.02	89.83	92.85	94.70	96.65	98.86
70.0	61.60	76.33	80.37	82.38	85.05	87.63	90.40	93.29	95.11	96.85	99.01
72.5	61.90	76.90	81.04	82.92	85.87	88.41	91.08	93.80	95.52	97.08	99.12
75.0	62.30	77.15	81.54	83.52	86.70	89.30	91.85	94.41	95.93	97.31	99.21
77.5	62.60	77.42	82.20	84.24	87.69	90.25	92.67	95.04	96.36	97.61	99.25
80.0	63.00	77.90	83.01	85.11	88.74	91.25	93.55	95.66	96.78	97.89	99.30
82.5	63.40	79.06	84.09	86.05	89.84	92.38	94.44	96.27	97.21	98.17	99.32
85.0	63.70	80.80	85.47	87.43	91.02	93.48	95.35	96.85	97.64	98.45	99.39
87.5	67.70	83.37	87.46	89.20	92.42	94.58	96.23	97.39	98.07	98.73	99.46
90.0	71.65	86.52	89.74	91.19	93.90	95.72	97.11	97.92	98.50	99.01	99.57
92.5	80.02	90.16	92.25	93.36	95.42	96.91	97.93	98.44	98.93	99.29	99.68
95.0	88.16	93.81	94.80	95.54	96.97	98.07	98.77	98.95	99.36	99.56	99.81
97.5	95.93	97.45	97.39	97.69	98.51	99.24	99.57	99.45	99.79	99.84	99.94

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	First-quartile storms; storm duration 12 to 24 hours										
2.5	1.93	4.92	6.88	7.82	8.29	8.61	11.03	14.36	16.21	19.17	25.70
5.0	6.08	11.08	13.65	14.90	16.81	18.60	22.63	28.10	31.14	34.79	42.59
7.5	10.60	17.23	20.39	21.94	25.13	28.03	33.26	40.44	44.55	48.63	57.29
10.0	15.73	23.63	27.29	29.11	33.07	36.48	42.44	50.85	55.77	60.06	69.18
12.5	21.46	29.87	33.85	35.96	40.31	43.84	49.88	58.95	64.45	68.68	77.90
15.0	27.69	35.88	39.98	42.37	47.01	50.40	55.97	64.99	70.62	74.63	83.42
17.5	33.99	41.51	45.50	48.20	52.94	56.10	61.02	69.42	74.58	78.25	86.67
20.0	39.94	46.69	50.51	53.50	58.46	61.37	65.55	73.06	77.43	80.69	88.65
22.5	44.79	50.91	54.90	58.24	63.55	66.54	69.98	76.26	79.80	82.57	89.91
25.0	48.49	54.41	58.88	62.55	68.41	71.60	74.58	79.46	82.05	84.39	90.83
27.5	50.74	57.03	62.18	66.17	72.43	76.20	79.00	82.72	84.53	86.38	91.82
30.0	51.84	58.84	64.58	69.00	75.57	80.05	82.82	85.80	87.17	88.58	92.97
32.5	52.15	59.87	66.15	71.01	77.67	83.13	86.09	88.61	89.74	90.84	94.20
35.0	52.36	60.86	67.31	72.46	79.10	85.28	88.56	90.93	91.95	92.85	95.37
37.5	52.37	61.64	68.05	73.38	79.77	86.57	90.13	92.57	93.61	94.34	96.37
40.0	52.84	62.61	68.80	74.19	80.34	87.38	91.16	93.66	94.75	95.40	97.15
42.5	53.59	63.55	69.67	74.96	80.92	88.00	91.90	94.38	95.46	96.06	97.67
45.0	54.63	64.83	70.88	75.94	81.68	88.51	92.35	94.74	95.84	96.43	98.00
47.5	55.74	66.08	72.12	76.81	82.41	88.97	92.65	94.96	96.05	96.63	98.19
50.0	57.18	67.62	73.53	77.83	83.23	89.48	92.91	95.17	96.24	96.83	98.33
52.5	58.43	69.04	74.84	78.74	84.01	89.99	93.11	95.36	96.41	97.01	98.46
55.0	59.71	70.65	76.16	79.54	84.76	90.44	93.30	95.48	96.54	97.16	98.59
57.5	60.80	71.96	77.21	80.15	85.36	90.80	93.49	95.65	96.69	97.33	98.75
60.0	61.69	73.23	78.15	80.68	85.79	91.04	93.67	95.78	96.80	97.48	98.94
62.5	62.21	73.72	78.47	80.86	86.16	91.21	93.89	95.94	96.91	97.63	99.13
65.0	62.71	73.76	78.51	80.90	86.44	91.31	94.10	96.07	96.99	97.75	99.31
67.5	62.83	73.90	78.54	81.00	86.60	91.36	94.33	96.22	97.10	97.89	99.47
70.0	63.02	74.10	78.58	81.13	86.87	91.48	94.58	96.36	97.16	98.00	99.56
72.5	63.30	74.20	78.61	81.24	87.40	91.73	94.85	96.52	97.28	98.11	99.61
75.0	64.09	74.40	78.64	81.98	88.02	92.04	95.11	96.65	97.36	98.22	99.62
77.5	65.58	74.51	79.75	83.11	88.78	92.45	95.41	96.84	97.49	98.34	99.63
80.0	67.95	76.98	81.43	84.64	89.76	92.93	95.70	97.01	97.62	98.43	99.64
82.5	70.80	79.80	83.42	86.32	90.79	93.53	96.05	97.24	97.79	98.55	99.65
85.0	74.23	82.73	85.50	87.90	91.81	94.25	96.47	97.49	97.96	98.68	99.66
87.5	77.95	85.63	87.75	89.73	92.92	95.02	96.95	97.82	98.21	98.83	99.67
90.0	81.67	88.43	89.97	91.59	94.09	95.82	97.46	98.15	98.47	99.00	99.68
92.5	85.39	91.02	92.12	93.50	95.37	96.77	98.06	98.58	98.81	99.21	99.76
95.0	89.09	93.51	94.20	95.56	96.77	97.73	98.67	99.03	99.18	99.45	99.84
97.5	92.81	95.96	96.25	97.77	98.25	98.67	99.29	99.51	99.61	99.70	99.92

Supplement 4. Untrimmed and smoothed percentiles for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	First-quartile storms; storm duration 24 to 72 hours										
2.5	3.03	4.69	5.60	6.88	9.29	12.07	15.64	20.29	21.82	25.30	32.14
5.0	6.69	11.26	12.98	14.87	18.39	22.49	26.87	32.62	35.38	39.63	48.48
7.5	10.35	17.15	19.83	22.24	26.67	31.68	36.69	43.13	47.00	51.74	62.21
10.0	14.12	22.40	25.62	28.63	33.70	39.33	45.01	51.86	56.64	61.42	72.82
12.5	17.78	26.92	30.46	33.90	39.49	45.45	51.78	58.81	64.07	68.43	80.13
15.0	21.20	30.83	34.67	38.44	44.31	50.35	57.11	64.02	69.16	72.81	84.52
17.5	24.46	33.98	38.16	42.00	48.12	54.00	61.53	68.22	73.08	76.16	87.30
20.0	27.62	37.11	40.93	45.01	51.30	57.14	65.23	72.05	76.41	79.14	89.43
22.5	30.51	40.06	43.74	47.64	53.86	59.67	67.81	74.71	78.64	81.32	91.00
25.0	33.56	43.03	46.44	50.15	56.01	61.62	69.27	76.23	79.96	82.87	92.11
27.5	36.58	46.09	48.97	52.42	57.69	62.59	69.62	76.67	80.56	83.87	92.58
30.0	39.65	49.16	51.43	54.66	59.07	63.32	69.80	77.00	80.58	84.23	93.04
32.5	43.11	52.46	54.69	57.20	60.54	64.00	70.10	77.40	80.59	84.50	93.20
35.0	46.79	55.85	58.01	59.97	62.55	65.25	70.30	77.80	80.61	84.77	93.58
37.5	50.00	58.99	61.07	62.60	64.57	66.81	70.57	78.13	81.95	86.01	94.24
40.0	53.07	61.90	63.91	65.05	66.61	68.78	72.76	80.55	84.30	88.03	95.33
42.5	55.45	64.27	66.26	67.13	68.50	70.80	75.53	83.34	87.00	90.30	96.34
45.0	56.78	65.81	67.62	68.53	70.06	72.61	78.17	86.01	89.65	92.53	97.46
47.5	57.30	66.67	68.38	69.38	71.11	73.82	80.07	87.84	91.58	94.23	98.25
50.0	57.46	66.78	68.54	69.62	71.83	74.73	81.42	88.98	92.86	95.33	98.81
52.5	57.47	66.90	68.60	69.68	72.37	75.54	82.22	89.47	93.31	95.74	99.09
55.0	57.48	67.10	68.70	69.70	72.94	76.32	82.81	89.74	93.55	96.02	99.30
57.5	57.49	67.30	68.80	69.76	73.52	77.14	83.33	89.90	93.58	96.13	99.39
60.0	57.50	67.40	68.90	69.80	74.11	78.06	83.86	90.16	93.77	96.29	99.48
62.5	57.51	67.60	69.00	69.86	74.84	79.02	84.51	90.52	93.99	96.43	99.53
65.0	57.52	67.80	69.10	70.54	75.65	80.06	85.42	91.06	94.32	96.69	99.56
67.5	57.53	67.90	69.24	71.62	76.54	81.03	86.32	91.63	94.70	96.87	99.59
70.0	57.54	68.09	70.24	72.84	77.56	82.08	87.18	92.21	95.25	97.20	99.62
72.5	58.87	69.26	71.45	74.18	78.54	83.09	88.09	92.75	95.60	97.39	99.63
75.0	60.70	70.48	72.62	75.39	79.47	84.01	88.95	93.26	96.01	97.64	99.64
77.5	63.08	71.94	74.04	76.81	80.49	84.80	89.76	93.75	96.32	97.75	99.66
80.0	65.60	73.35	75.44	78.06	81.42	85.61	90.51	94.23	96.50	97.82	99.68
82.5	68.15	74.86	76.86	79.26	82.20	86.47	91.38	94.71	96.48	97.84	99.69
85.0	70.94	76.56	78.51	80.57	83.18	87.34	92.26	95.20	96.62	97.85	99.70
87.5	73.82	78.81	80.55	82.23	84.64	88.30	93.01	95.73	96.69	97.86	99.74
90.0	77.16	81.56	83.08	84.40	86.61	89.83	93.99	96.33	97.05	98.14	99.76
92.5	81.23	85.01	86.32	87.33	89.31	91.96	95.37	97.05	97.68	98.55	99.80
95.0	86.03	89.12	90.19	91.00	92.79	94.60	96.98	97.93	98.50	99.06	99.85
97.5	91.44	93.74	94.50	95.24	96.76	97.83	98.86	98.90	99.39	99.62	99.90

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First-quartile storms; storm duration 0 to 72 hours											
2.5	1.82	4.68	5.87	7.09	8.51	8.72	11.15	14.79	17.06	19.87	26.99
5.0	6.12	10.41	12.37	14.05	16.49	18.67	22.55	27.82	31.13	35.07	43.60
7.5	10.43	16.10	18.79	20.90	24.26	27.97	32.98	39.46	43.54	48.36	57.84
10.0	14.90	21.99	25.27	27.76	31.81	36.29	42.10	49.36	53.90	59.37	69.27
12.5	19.40	27.76	31.44	34.17	38.78	43.51	49.68	57.26	61.91	67.70	77.51
15.0	24.00	33.37	37.26	40.10	45.17	49.94	55.93	63.40	67.84	73.43	82.63
17.5	28.48	38.60	42.50	45.35	50.70	55.41	61.14	68.11	72.14	77.14	85.68
20.0	32.81	43.39	47.18	49.99	55.60	60.42	65.87	72.22	75.77	80.02	87.83
22.5	36.68	47.35	50.98	53.83	59.83	64.97	70.07	75.75	78.75	82.20	89.25
25.0	40.20	50.71	54.19	57.10	63.51	69.08	74.01	78.93	81.44	84.21	90.34
27.5	43.19	53.47	56.79	59.74	66.48	72.51	77.59	81.82	83.94	86.19	91.46
30.0	45.88	55.80	58.90	61.86	68.93	75.31	80.56	84.34	86.21	88.12	92.67
32.5	48.09	57.80	60.69	63.55	70.85	77.46	82.91	86.43	88.22	89.90	93.76
35.0	50.01	60.03	62.70	65.36	72.58	79.20	84.85	88.18	90.01	91.55	94.86
37.5	51.68	62.07	64.60	67.18	74.19	80.55	86.29	89.49	91.36	92.79	95.83
40.0	53.21	63.94	66.41	69.00	75.76	81.73	87.38	90.56	92.43	93.76	96.60
42.5	54.40	65.56	68.05	70.79	77.21	82.80	88.30	91.43	93.26	94.55	97.16
45.0	55.57	67.01	69.57	72.60	78.61	83.80	89.06	92.11	93.83	95.11	97.60
47.5	56.67	67.98	70.67	74.00	79.75	84.62	89.63	92.67	94.23	95.51	97.89
50.0	57.74	68.89	71.68	75.23	80.69	85.36	90.15	93.19	94.63	95.87	98.11
52.5	58.64	69.60	72.56	76.25	81.46	86.00	90.60	93.58	94.95	96.19	98.31
55.0	59.55	70.30	73.42	77.11	82.08	86.55	90.96	93.89	95.20	96.43	98.49
57.5	60.32	70.90	74.19	77.82	82.68	87.10	91.36	94.17	95.46	96.66	98.65
60.0	60.98	71.50	74.97	78.44	83.21	87.64	91.75	94.44	95.70	96.86	98.82
62.5	61.49	72.05	75.67	78.95	83.73	88.19	92.12	94.68	95.95	97.06	98.97
65.0	61.96	72.69	76.41	79.51	84.33	88.80	92.53	94.96	96.19	97.23	99.09
67.5	62.26	73.27	77.10	80.02	84.99	89.44	92.95	95.24	96.44	97.41	99.21
70.0	62.67	73.96	77.84	80.63	85.67	90.09	93.37	95.55	96.69	97.57	99.30
72.5	63.20	74.67	78.63	81.37	86.40	90.74	93.79	95.86	96.93	97.76	99.36
75.0	64.03	75.46	79.44	82.16	87.17	91.39	94.23	96.19	97.15	97.92	99.41
77.5	65.36	76.39	80.33	83.08	87.99	92.03	94.67	96.52	97.38	98.09	99.45
80.0	67.26	77.47	81.31	84.13	88.87	92.65	95.10	96.84	97.59	98.25	99.48
82.5	69.53	78.66	82.37	85.18	89.70	93.31	95.54	97.15	97.79	98.41	99.50
85.0	72.36	80.23	83.58	86.33	90.58	94.07	96.05	97.49	98.01	98.57	99.54
87.5	75.69	82.35	85.30	87.94	91.65	94.83	96.57	97.85	98.25	98.75	99.58
90.0	79.41	84.91	87.43	89.80	92.92	95.66	97.15	98.22	98.54	98.95	99.64
92.5	83.65	88.11	90.12	92.03	94.44	96.67	97.83	98.64	98.87	99.18	99.71
95.0	88.42	91.88	93.27	94.64	96.25	97.78	98.56	99.10	99.25	99.45	99.80
97.5	93.48	95.96	96.82	97.53	98.33	98.93	99.31	99.56	99.65	99.74	99.91

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Second-quartile storms; storm duration 0 to 6 hours											
2.5	0.18	0.36	0.41	0.47	0.52	0.63	0.89	1.71	2.21	1.32	5.34
5.0	.74	1.28	1.67	2.02	2.56	3.01	3.74	4.96	5.66	5.62	10.12
7.5	1.23	2.29	3.00	3.60	4.52	5.32	6.53	8.19	9.08	9.81	14.94
10.0	1.82	3.54	4.36	5.21	6.61	7.77	9.50	11.50	12.61	13.77	19.80
12.5	2.35	4.73	5.63	6.71	8.71	10.26	12.49	14.85	16.13	17.38	24.67
15.0	2.94	6.01	6.84	8.22	10.96	12.90	15.57	18.41	19.85	21.05	29.53
17.5	3.38	7.18	8.09	9.86	13.54	15.90	18.96	22.30	23.93	25.18	34.56
20.0	3.99	8.47	9.62	11.83	16.47	19.30	22.75	26.53	28.30	29.72	39.66
22.5	4.75	10.09	11.64	14.17	19.55	22.82	26.58	31.03	32.94	34.86	44.59
25.0	5.65	12.28	14.25	17.32	23.07	26.77	30.77	35.84	37.86	40.78	49.67
27.5	6.94	15.02	17.67	21.05	26.85	30.96	35.32	40.87	42.95	46.83	54.95
30.0	8.49	18.45	21.70	25.37	31.01	35.58	40.21	46.07	48.16	52.57	59.87
32.5	10.41	22.29	26.19	30.08	35.26	40.19	44.99	51.29	53.31	58.14	64.60
35.0	13.08	26.25	30.71	34.91	39.91	45.12	50.09	56.44	58.34	63.08	69.34
37.5	16.42	30.34	35.38	39.61	44.54	50.00	55.23	61.50	63.24	67.43	73.69
40.0	19.94	34.27	39.54	43.95	48.95	54.61	60.01	66.42	67.90	71.55	77.39
42.5	23.88	38.20	43.64	47.97	53.04	58.70	64.30	70.94	72.15	75.54	80.91
45.0	27.84	42.12	47.62	51.85	57.20	62.90	68.60	75.13	76.13	79.01	83.99
47.5	31.52	45.89	51.34	55.38	60.78	66.55	72.42	78.73	79.57	82.16	86.70
50.0	35.00	49.53	54.61	58.47	63.96	69.69	75.56	81.75	82.58	84.85	88.85
52.5	38.78	53.39	58.16	61.61	66.98	72.57	78.38	84.04	84.93	86.98	90.75
55.0	42.85	57.25	61.50	64.67	69.91	75.30	80.99	85.83	86.81	88.58	92.25
57.5	46.86	60.86	64.52	67.43	72.40	77.51	83.06	87.16	88.27	89.90	93.57
60.0	50.78	64.31	67.52	70.21	74.85	79.61	84.83	88.43	89.58	91.04	94.54
62.5	55.45	67.70	70.65	73.07	77.41	81.77	86.64	89.57	90.68	92.13	95.45
65.0	60.35	70.89	73.58	75.88	79.95	84.00	88.39	90.75	91.83	93.24	96.23
67.5	65.00	73.83	76.33	78.56	82.14	85.98	89.84	91.89	92.90	94.32	96.92
70.0	69.82	76.86	79.17	81.29	84.47	87.94	91.26	93.02	93.95	95.36	97.44
72.5	74.63	79.93	81.94	83.86	86.84	89.85	92.65	94.10	94.92	96.25	97.91
75.0	78.82	82.95	84.63	86.33	88.94	91.53	93.86	95.08	95.80	97.10	98.40
77.5	82.28	85.81	87.12	88.50	90.81	93.09	94.94	95.95	96.58	97.78	98.81
80.0	85.43	88.46	89.52	90.52	92.56	94.47	95.93	96.74	97.27	98.26	99.15
82.5	88.20	90.75	91.58	92.23	94.02	95.68	96.81	97.43	97.84	98.65	99.43
85.0	90.60	92.70	93.41	93.83	95.15	96.69	97.49	97.95	98.30	98.98	99.64
87.5	92.39	94.24	94.85	95.17	96.18	97.54	98.08	98.43	98.70	99.17	99.73
90.0	94.02	95.56	96.14	96.44	97.20	98.23	98.61	98.85	99.05	99.35	99.81
92.5	95.46	96.71	97.23	97.59	98.18	98.82	99.06	99.21	99.34	99.53	99.84
95.0	96.90	97.88	98.35	98.79	99.09	99.31	99.44	99.53	99.60	99.70	99.88
97.5	98.33	99.03	99.42	99.53	99.63	99.74	99.78	99.84	99.86	99.87	99.91

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Second-quartile storms; storm duration 6 to 12 hours											
2.5	0.26	0.52	0.64	0.73	1.38	1.88	3.69	4.76	6.68	8.18	12.01
5.0	.71	1.53	2.03	2.49	3.87	4.89	6.87	12.39	15.13	16.97	22.92
7.5	1.23	2.57	3.39	4.16	6.25	7.80	10.02	19.39	22.57	24.46	32.38
10.0	1.80	3.73	4.94	5.93	8.64	10.68	13.24	24.92	28.02	29.89	39.56
12.5	2.48	4.96	6.51	7.72	10.92	13.43	16.38	28.88	31.48	33.54	45.66
15.0	3.25	6.21	8.14	9.53	13.19	16.15	19.39	31.62	33.81	35.65	49.98
17.5	4.12	7.56	9.79	11.40	15.27	18.78	22.29	33.23	35.07	36.92	54.00
20.0	5.10	8.93	11.53	13.39	17.45	21.49	25.13	34.37	36.53	39.09	57.74
22.5	6.27	10.33	13.19	15.34	19.73	24.19	27.80	35.90	39.06	42.62	62.57
25.0	7.57	11.82	15.11	17.44	22.18	27.14	30.53	37.88	42.63	46.91	66.71
27.5	9.12	13.39	17.06	19.48	24.65	30.07	33.25	40.29	46.53	52.04	70.91
30.0	11.16	15.40	19.39	21.59	27.39	33.10	36.08	43.40	51.19	57.55	74.31
32.5	13.37	17.92	22.16	24.35	30.81	36.40	39.34	46.88	55.39	61.68	77.30
35.0	16.02	21.06	25.50	27.76	34.40	39.95	42.91	50.73	59.08	64.91	79.56
37.5	18.77	24.74	29.15	31.60	38.70	43.78	46.86	55.10	62.37	67.67	81.33
40.0	21.79	29.24	33.34	36.39	43.87	48.32	51.56	59.94	66.09	70.32	82.48
42.5	24.22	33.86	37.68	41.60	49.11	52.98	56.31	64.48	69.22	72.61	83.58
45.0	26.99	38.65	42.09	46.56	53.91	57.54	60.79	68.95	72.52	75.41	84.62
47.5	29.42	43.08	46.40	51.31	58.53	61.97	65.13	72.84	75.55	78.08	85.41
50.0	32.80	47.45	50.66	55.74	62.39	65.94	69.14	76.07	78.24	80.55	86.59
52.5	36.70	51.35	54.72	59.47	65.42	69.21	72.38	78.60	80.33	82.55	87.91
55.0	41.99	55.19	58.70	63.05	68.45	72.49	75.77	81.18	82.55	84.58	89.20
57.5	47.48	58.95	62.59	66.38	71.46	75.68	79.06	83.43	84.58	86.44	90.53
60.0	53.48	63.00	66.32	69.42	74.38	78.68	82.07	85.70	86.73	88.41	92.03
62.5	58.75	67.07	70.10	72.60	77.40	81.74	84.75	87.92	88.93	90.36	93.33
65.0	62.98	71.01	73.61	75.70	80.32	84.47	87.19	90.05	91.01	92.25	94.63
67.5	65.86	74.59	76.77	78.41	82.92	86.78	89.02	91.64	92.69	93.76	95.81
70.0	68.13	77.52	79.39	80.79	85.15	88.64	90.44	92.97	94.09	95.05	96.89
72.5	70.01	79.93	81.67	82.91	87.17	90.23	91.65	94.00	95.18	96.01	97.69
75.0	71.71	81.80	83.43	84.54	88.78	91.46	92.79	94.85	96.00	96.75	98.26
77.5	74.12	83.47	85.05	86.00	90.29	92.71	93.94	95.55	96.64	97.31	98.66
80.0	77.06	84.99	86.54	87.43	91.62	93.82	95.05	96.29	97.22	97.81	98.99
82.5	80.25	86.79	88.19	88.99	92.86	94.90	96.09	97.03	97.77	98.23	99.23
85.0	83.46	88.57	89.84	90.59	93.95	95.89	97.02	97.74	98.28	98.63	99.43
87.5	86.73	90.47	91.55	92.26	95.12	96.80	97.76	98.35	98.73	99.00	99.64
90.0	89.65	92.44	93.31	93.95	96.22	97.61	98.35	98.86	99.14	99.31	99.78
92.5	92.47	94.55	95.15	95.68	97.34	98.37	98.88	99.26	99.46	99.57	99.87
95.0	95.28	96.68	97.02	97.42	98.50	99.05	99.38	99.57	99.73	99.81	99.95
97.5	98.10	98.91	98.96	99.19	99.73	99.79	99.85	99.90	99.95	100.00	100.00

Supplement 4. Untrimmed and smoothed percentiles for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Second-quartile storms; storm duration 12 to 24 hours											
2.5	1.35	1.72	1.95	2.18	3.42	4.87	6.33	7.51	8.92	10.02	13.51
5.0	2.76	3.77	4.08	5.14	7.10	9.98	13.61	17.04	19.31	21.20	25.89
7.5	4.23	5.84	6.75	8.03	10.64	15.07	20.58	25.66	28.60	31.17	36.72
10.0	5.58	7.93	9.42	10.99	14.20	19.96	26.66	32.48	35.93	38.93	45.41
12.5	6.67	9.87	11.95	13.82	17.63	24.40	31.65	37.36	41.03	44.20	51.91
15.0	7.67	11.76	14.32	16.57	20.94	28.33	35.59	41.27	44.95	48.18	56.83
17.5	8.28	13.63	16.61	19.33	24.14	31.73	38.58	44.22	47.74	50.94	60.51
20.0	8.69	15.50	18.83	22.14	27.41	34.68	40.99	46.59	49.93	52.92	64.22
22.5	9.33	17.33	20.96	24.91	30.62	37.48	43.37	48.92	51.88	54.90	68.09
25.0	10.22	19.18	23.05	27.71	33.82	40.33	45.87	51.43	54.16	57.26	72.10
27.5	11.31	21.19	25.30	30.57	37.03	43.32	48.70	54.30	56.82	59.94	76.37
30.0	12.98	23.36	27.65	33.41	40.28	46.33	51.69	57.27	59.84	63.08	80.26
32.5	15.05	25.71	30.21	36.23	43.45	49.40	54.78	60.51	63.31	66.92	83.65
35.0	17.50	28.33	32.92	39.15	46.70	52.50	57.87	63.88	67.24	71.13	86.53
37.5	20.55	31.46	36.03	42.26	49.97	55.64	60.99	67.30	71.15	75.36	88.88
40.0	24.17	34.91	39.42	45.30	53.15	58.77	64.10	70.42	74.38	78.92	90.62
42.5	28.53	39.04	43.41	48.73	56.43	61.73	67.14	73.44	77.26	81.87	92.14
45.0	33.34	43.47	47.70	52.43	59.83	64.78	70.15	76.20	79.76	84.17	93.29
47.5	38.29	47.89	51.97	56.01	63.00	67.83	73.17	78.88	81.88	85.84	94.16
50.0	43.26	52.28	56.17	59.53	66.22	70.82	76.02	81.42	83.89	87.18	94.88
52.5	47.82	56.36	60.05	63.07	69.27	73.70	78.68	83.91	86.18	88.78	95.53
55.0	51.54	59.67	63.18	65.99	71.94	76.58	81.24	86.25	88.44	90.48	96.09
57.5	54.68	62.55	65.77	68.46	74.24	79.08	83.53	88.49	90.46	92.02	96.73
60.0	57.31	65.17	68.15	70.66	76.34	81.48	85.54	90.48	92.26	93.55	97.44
62.5	59.27	67.40	70.14	72.56	77.95	83.37	87.34	92.11	93.68	94.83	98.00
65.0	61.07	69.45	72.02	74.35	79.52	84.96	88.92	93.29	94.70	95.77	98.43
67.5	62.68	71.25	73.67	75.99	80.86	86.25	90.16	94.20	95.37	96.35	98.74
70.0	64.25	72.99	75.27	77.58	82.10	87.43	91.18	94.84	95.89	96.83	98.88
72.5	65.94	74.71	76.81	79.12	83.17	88.32	92.09	95.30	96.29	97.15	98.90
75.0	68.15	76.46	78.40	80.72	84.34	89.35	92.93	95.76	96.71	97.49	98.95
77.5	70.56	78.30	80.00	82.20	85.41	90.39	93.66	96.24	97.10	97.78	99.01
80.0	73.50	80.41	81.89	83.90	86.71	91.55	94.50	96.71	97.50	98.10	99.11
82.5	76.74	82.59	83.88	85.65	88.15	92.74	95.35	97.20	97.90	98.39	99.23
85.0	80.17	84.83	85.94	87.59	89.93	93.97	96.15	97.68	98.27	98.68	99.37
87.5	83.56	87.40	88.27	89.74	91.90	95.21	96.97	98.16	98.62	98.94	99.50
90.0	87.04	90.09	90.74	92.04	94.02	96.46	97.79	98.63	98.97	99.20	99.64
92.5	90.42	92.74	93.24	94.31	95.96	97.57	98.49	99.05	99.27	99.43	99.75
95.0	93.76	95.41	95.76	96.58	97.72	98.57	99.11	99.43	99.56	99.66	99.88
97.5	97.11	98.15	98.41	98.79	99.27	99.54	99.70	99.79	99.84	99.88	100.00

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Second-quartile storms; storm duration 24 to 72 hours											
2.5	0.91	2.04	2.47	3.19	4.63	7.06	9.60	12.54	15.23	17.40	22.26
5.0	1.76	4.10	5.27	7.01	10.03	15.85	23.14	27.61	31.05	33.57	40.43
7.5	2.43	5.86	7.67	10.28	14.80	23.25	35.71	41.48	45.35	48.16	56.82
10.0	2.91	7.08	9.43	12.88	18.52	29.29	46.52	53.53	57.48	60.58	70.77
12.5	3.26	7.83	10.41	14.60	21.00	33.72	53.70	62.35	66.72	70.15	81.46
15.0	3.41	8.30	11.31	16.10	22.82	36.38	55.38	67.20	72.62	76.00	88.71
17.5	3.56	8.63	12.13	17.31	24.16	37.15	56.56	68.67	73.23	77.25	92.00
20.0	3.92	9.28	13.42	18.90	25.49	37.93	57.75	69.65	73.85	78.10	93.32
22.5	4.61	10.32	15.14	20.89	27.16	38.52	58.03	69.92	74.46	78.94	93.68
25.0	5.56	11.76	17.46	23.39	29.53	39.56	58.31	70.19	74.59	79.79	94.05
27.5	6.87	13.83	20.01	25.95	32.22	41.30	58.58	70.46	74.71	79.93	94.41
30.0	8.52	16.10	22.83	28.80	35.21	43.62	58.86	70.72	74.84	80.08	94.61
32.5	10.55	18.47	25.62	31.80	38.51	46.36	59.14	71.00	74.96	80.22	94.80
35.0	12.97	21.47	28.71	34.88	41.94	49.55	59.42	71.26	75.09	80.36	95.00
37.5	16.44	25.24	32.05	38.07	45.22	52.59	60.20	71.53	75.22	80.51	95.20
40.0	20.65	29.44	35.61	41.51	48.60	55.66	62.71	71.80	75.34	80.65	95.40
42.5	25.57	34.81	39.79	45.06	51.86	58.78	65.76	72.60	76.00	80.80	95.60
45.0	30.79	40.79	44.50	48.79	54.96	61.72	68.71	74.78	78.41	81.50	95.80
47.5	36.28	46.56	49.25	52.75	58.05	64.61	71.65	77.43	81.23	83.55	96.00
50.0	40.97	51.58	53.66	56.67	61.44	67.72	74.56	79.93	83.65	85.86	96.23
52.5	45.24	55.81	57.60	60.48	64.86	70.79	77.37	82.11	85.73	87.75	97.35
55.0	48.85	59.07	60.94	64.22	68.45	74.07	80.38	84.53	87.82	89.61	97.87
57.5	51.93	61.67	63.52	67.48	72.27	77.50	83.45	87.07	89.83	91.38	98.00
60.0	54.36	63.94	65.83	70.38	76.12	81.03	86.45	89.62	91.76	93.14	98.17
62.5	56.77	66.36	68.33	73.08	79.46	84.21	89.14	91.94	93.58	94.70	98.29
65.0	58.68	69.11	71.19	75.69	82.56	87.09	91.42	93.96	95.14	96.05	98.40
67.5	60.53	71.72	73.88	78.02	85.17	89.38	93.02	95.33	96.21	96.94	98.50
70.0	62.27	74.16	76.59	80.42	87.11	91.03	94.09	96.20	96.91	97.50	98.62
72.5	63.76	76.11	78.67	82.15	88.44	92.00	94.65	96.63	97.21	97.75	98.73
75.0	64.96	77.44	80.03	83.46	89.31	92.65	94.93	96.84	97.33	97.89	98.84
77.5	66.22	78.10	80.88	84.35	89.75	93.06	95.10	96.98	97.40	97.97	98.92
80.0	66.92	78.26	80.94	84.50	90.05	93.18	95.27	97.16	97.52	98.11	99.03
82.5	67.48	78.42	81.00	84.64	90.40	93.36	95.50	97.37	97.70	98.28	99.13
85.0	68.75	78.59	81.20	84.80	90.88	93.59	95.78	97.63	97.98	98.51	99.23
87.5	70.59	78.75	82.36	84.94	91.82	94.08	96.21	97.94	98.29	98.74	99.35
90.0	73.48	80.79	84.07	86.27	93.22	94.74	96.74	98.29	98.61	98.99	99.48
92.5	78.33	84.77	87.41	89.19	94.87	95.72	97.36	98.68	98.98	99.25	99.61
95.0	84.85	89.89	91.64	93.08	96.62	96.78	97.99	99.11	99.39	99.53	99.76
97.5	92.14	95.41	96.14	97.16	98.54	98.61	98.68	99.54	99.80	99.81	99.91

Supplement 4. Untrimmed and smoothed percentiles for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Second-quartile storms; storm duration 0 to 72 hours											
2.5	0.69	1.32	1.81	2.25	2.90	3.77	6.16	8.81	9.95	12.04	17.29
5.0	1.46	3.02	3.83	4.74	6.24	9.44	13.76	19.05	21.98	25.50	32.92
7.5	2.23	4.71	5.81	7.16	9.54	14.70	20.65	28.23	32.79	37.69	46.97
10.0	2.89	6.31	7.70	9.51	12.70	19.09	26.28	35.37	41.40	47.57	58.90
12.5	3.46	7.69	9.43	11.68	15.56	22.55	30.60	40.29	47.38	54.87	68.19
15.0	4.02	9.03	11.12	13.82	18.25	25.46	33.83	43.63	51.23	59.51	74.51
17.5	4.44	10.15	12.68	15.77	20.69	27.36	35.95	45.48	53.18	61.51	78.19
20.0	4.95	11.28	14.31	17.81	22.97	29.13	37.77	46.63	54.01	61.98	80.47
22.5	5.68	12.58	16.15	20.00	25.33	31.25	39.89	48.07	54.77	62.26	81.76
25.0	6.70	14.32	18.38	22.57	28.12	33.89	42.33	49.92	55.93	62.56	82.62
27.5	7.97	16.22	20.81	25.34	31.18	36.86	45.23	52.30	57.61	63.46	83.49
30.0	9.67	18.51	23.49	28.41	34.57	40.42	48.54	55.03	59.74	64.96	84.52
32.5	11.80	20.99	26.33	31.53	38.23	44.14	52.01	58.16	62.45	67.19	85.56
35.0	14.38	23.84	29.31	34.68	42.01	47.98	55.60	61.38	65.43	69.64	86.63
37.5	17.68	27.20	32.67	37.97	45.75	51.70	59.19	64.74	68.55	72.41	87.59
40.0	21.73	31.25	36.42	41.52	49.50	55.36	62.71	68.14	71.74	75.24	88.74
42.5	26.53	36.03	40.79	45.42	53.21	58.85	66.10	71.51	74.88	78.12	90.02
45.0	31.67	41.36	45.49	49.57	56.84	62.27	69.39	74.78	77.84	80.79	91.25
47.5	37.05	46.55	50.24	53.85	60.34	65.51	72.29	77.74	80.52	83.26	92.39
50.0	42.18	51.36	54.64	57.94	63.71	68.74	75.13	80.46	82.95	85.44	93.52
52.5	46.81	55.47	58.55	61.61	66.77	71.85	77.81	82.89	85.17	87.39	94.45
55.0	50.80	58.90	61.82	64.85	69.72	74.94	80.43	85.25	87.34	89.31	95.19
57.5	54.37	61.79	64.80	67.86	72.62	77.97	82.90	87.35	89.32	91.04	95.92
60.0	57.21	64.47	67.61	70.66	75.47	81.03	85.47	89.43	91.21	92.66	96.64
62.5	59.64	67.01	70.26	73.19	78.07	83.66	87.66	91.27	92.90	94.09	97.26
65.0	61.85	69.55	72.93	75.68	80.61	85.93	89.51	92.80	94.33	95.29	97.79
67.5	63.90	71.82	75.51	77.98	82.94	87.86	91.04	93.93	95.31	96.09	98.20
70.0	65.83	73.96	77.81	80.04	84.91	89.36	92.26	94.83	96.05	96.71	98.46
72.5	67.83	75.94	79.78	81.79	86.55	90.42	93.10	95.46	96.51	97.11	98.60
75.0	69.79	77.71	81.50	83.40	88.04	91.43	93.88	95.98	96.86	97.45	98.74
77.5	71.75	79.37	82.99	84.80	89.32	92.38	94.60	96.46	97.15	97.74	98.88
80.0	73.34	81.10	84.31	86.06	90.40	93.27	95.27	96.93	97.48	98.05	99.03
82.5	74.95	82.89	85.68	87.29	91.48	94.20	95.96	97.38	97.82	98.34	99.18
85.0	76.83	84.71	87.23	88.67	92.55	95.10	96.64	97.82	98.17	98.64	99.35
87.5	79.09	86.77	89.04	90.27	93.68	95.98	97.29	98.23	98.51	98.89	99.50
90.0	81.81	89.05	91.04	92.03	94.87	96.88	97.93	98.64	98.86	99.15	99.63
92.5	85.64	91.52	93.20	93.96	96.16	97.78	98.56	99.03	99.21	99.39	99.76
95.0	90.20	94.09	95.40	95.96	97.49	98.67	99.18	99.42	99.58	99.62	99.88
97.5	95.14	96.84	97.61	97.98	98.85	99.60	99.80	99.82	99.97	99.99	100.00

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Third-quartile storms; storm duration 0 to 6 hours										
2.5	0.32	0.38	0.54	1.16	1.86	2.66	4.06	4.57	5.47	5.92	7.16
5.0	.72	1.42	1.78	2.54	4.33	5.64	7.40	8.51	9.52	11.33	13.93
7.5	1.13	2.33	2.88	3.87	6.79	8.45	10.50	12.13	13.25	16.05	20.70
10.0	1.55	3.20	3.91	5.17	9.08	11.05	13.46	15.61	16.90	20.31	25.13
12.5	1.97	4.04	4.92	6.45	11.17	13.35	15.99	18.60	20.02	23.89	29.96
15.0	2.42	4.89	5.93	7.74	12.92	15.45	18.20	21.30	22.84	26.78	32.26
17.5	2.88	5.73	6.91	8.97	14.29	17.05	19.77	23.45	25.16	28.37	34.56
20.0	3.47	6.60	7.86	10.15	15.10	18.26	21.10	25.43	27.29	30.05	36.71
22.5	4.03	7.66	9.06	11.40	15.88	19.40	22.12	26.86	28.89	31.31	38.37
25.0	4.65	8.69	10.18	12.71	16.70	20.58	23.10	28.17	30.38	32.46	40.43
27.5	5.18	9.74	11.30	14.01	17.65	21.61	24.25	29.33	31.60	33.64	43.14
30.0	5.56	10.91	12.53	15.29	18.63	22.82	25.51	30.46	33.30	35.87	46.31
32.5	5.85	12.17	13.85	16.56	20.18	24.48	26.96	31.52	34.91	38.11	49.47
35.0	6.12	13.32	15.11	17.78	21.64	26.18	28.46	32.81	36.83	40.66	52.75
37.5	6.38	14.58	16.57	19.03	22.94	28.05	30.40	34.25	38.97	43.41	56.03
40.0	6.00	16.27	18.01	20.36	24.72	30.26	32.11	35.64	41.46	46.90	59.17
42.5	6.35	18.44	19.56	21.88	27.02	32.71	34.27	37.43	44.04	50.22	62.26
45.0	8.09	20.91	21.78	24.01	29.41	35.39	37.01	40.00	47.42	54.35	65.25
47.5	11.07	24.03	24.56	26.78	32.37	38.51	40.49	43.37	51.05	58.50	68.33
50.0	15.14	27.51	27.55	29.99	36.05	41.86	44.27	47.90	55.80	63.41	71.70
52.5	19.63	31.14	31.22	33.73	39.95	45.41	48.77	53.71	61.49	68.22	74.65
55.0	22.96	34.69	35.51	38.21	44.05	49.32	53.49	59.58	67.02	72.97	77.56
57.5	24.82	38.51	39.67	42.64	48.40	53.21	58.07	65.07	71.85	76.45	80.10
60.0	25.01	42.09	43.85	47.10	52.95	57.14	62.51	70.11	76.23	79.72	82.59
62.5	25.21	45.90	48.31	51.59	57.36	61.00	66.68	74.12	79.38	81.90	84.35
65.0	27.00	49.68	52.70	56.07	61.67	64.83	70.50	76.95	81.18	83.26	86.13
67.5	29.44	53.69	57.00	60.33	65.76	68.41	74.04	79.57	82.60	84.07	87.50
70.0	34.95	57.74	61.42	64.54	69.70	71.97	77.31	81.91	83.95	85.22	88.86
72.5	42.90	62.43	65.88	68.62	73.39	75.42	80.24	83.99	85.52	86.55	89.94
75.0	51.31	67.25	70.56	72.75	76.93	78.78	82.99	86.00	87.19	88.10	91.33
77.5	59.44	72.02	75.00	76.55	80.03	81.80	85.56	88.03	88.95	89.77	92.70
80.0	66.02	76.47	78.82	79.87	83.00	84.73	87.86	89.81	90.68	91.41	94.06
82.5	72.12	80.76	82.41	83.08	85.88	87.48	90.10	91.63	92.50	93.13	95.42
85.0	77.09	84.20	85.49	85.98	88.39	89.83	92.28	93.41	94.11	94.60	96.59
87.5	81.75	87.30	88.14	88.65	90.78	92.01	94.21	94.98	95.51	95.93	97.55
90.0	85.74	90.20	90.73	91.28	93.11	94.13	95.89	96.38	96.80	97.14	98.35
92.5	89.74	93.06	93.46	93.95	95.26	96.05	97.37	97.67	97.93	98.17	99.00
95.0	93.53	95.82	96.14	96.53	97.28	97.87	98.56	98.73	98.85	99.00	99.41
97.5	97.32	98.69	98.86	99.12	99.36	99.44	99.51	99.59	99.63	99.73	99.82

Supplement 4. Untrimmed and smoothed percentiles for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Third-quartile storms; storm duration 6 to 12 hours										
2.5	0.40	0.78	0.79	0.91	1.25	2.09	2.78	3.10	4.36	4.03	6.07
5.0	.89	1.87	2.09	2.39	3.07	4.11	5.14	6.80	7.86	8.63	12.17
7.5	1.33	2.84	3.27	3.81	4.85	6.05	7.34	10.11	11.08	12.81	17.98
10.0	1.71	3.76	4.40	5.18	6.58	8.02	9.64	13.18	14.48	16.82	23.39
12.5	2.06	4.63	5.49	6.51	8.19	9.88	11.72	15.40	17.38	19.96	27.94
15.0	2.36	5.35	6.49	7.76	9.80	11.67	13.80	17.61	20.20	23.12	32.24
17.5	2.63	5.95	7.35	8.85	11.24	13.28	15.57	19.66	22.73	26.09	35.68
20.0	2.91	6.52	8.20	9.77	12.49	14.87	17.73	22.05	25.63	29.54	38.80
22.5	3.19	7.04	9.05	10.63	13.61	16.25	19.67	24.25	28.05	32.54	41.28
25.0	3.51	7.50	9.85	11.38	14.62	17.55	22.08	27.33	31.23	36.20	43.65
27.5	3.81	7.89	10.51	12.02	15.46	18.74	24.26	29.90	34.17	39.36	45.56
30.0	4.12	8.21	11.05	12.51	16.15	19.74	26.48	32.13	36.77	41.78	47.34
32.5	4.40	8.58	11.54	13.07	16.82	20.56	27.88	33.83	38.53	43.16	48.75
35.0	4.60	8.84	11.75	13.41	17.29	21.24	28.77	34.92	39.75	43.92	49.78
37.5	4.73	9.13	11.82	13.73	17.78	21.77	28.82	35.11	39.99	44.02	50.60
40.0	5.05	9.75	11.99	14.02	18.17	22.19	28.87	35.30	40.23	44.13	50.85
42.5	5.34	10.55	12.37	14.60	18.82	22.83	28.92	35.49	40.50	44.23	51.52
45.0	5.77	11.55	13.22	15.52	19.83	23.63	28.97	35.68	40.72	44.34	52.61
47.5	6.47	13.04	14.81	17.30	21.68	25.22	29.80	36.00	40.96	44.70	54.94
50.0	7.40	14.79	16.89	19.51	23.96	27.58	31.45	38.26	42.00	46.61	57.89
52.5	8.52	16.82	19.63	22.48	27.03	30.70	34.81	41.69	44.84	50.24	62.38
55.0	10.04	19.33	22.73	25.81	30.61	34.67	38.99	45.86	49.14	54.47	66.84
57.5	11.69	22.08	25.81	29.24	34.50	39.27	43.65	50.42	53.97	59.25	71.54
60.0	13.66	25.10	28.94	32.52	38.51	43.97	48.43	55.17	59.01	64.10	75.67
62.5	15.69	28.62	32.58	36.37	42.91	48.87	53.36	60.11	64.27	69.24	79.58
65.0	17.41	32.33	36.15	40.53	47.52	53.85	58.47	65.04	69.28	73.74	82.60
67.5	19.81	36.52	40.32	45.23	52.39	58.53	63.44	69.97	73.98	77.95	85.52
70.0	23.43	41.50	45.28	50.61	57.76	63.39	68.35	74.89	78.37	81.70	87.90
72.5	28.15	47.20	51.04	56.68	63.35	68.41	73.21	79.48	82.24	85.04	90.05
75.0	34.31	53.40	57.16	62.81	69.09	73.44	77.91	83.42	85.50	87.70	91.88
77.5	42.55	60.31	63.95	68.82	74.69	78.31	82.12	86.75	88.27	90.08	93.56
80.0	51.41	67.32	70.72	74.70	80.01	83.03	85.91	89.44	90.58	92.05	94.94
82.5	60.09	73.90	77.05	80.09	84.61	87.09	89.24	91.68	92.54	93.72	96.09
85.0	68.37	79.69	82.52	84.68	88.47	90.41	91.94	93.50	94.20	95.08	97.00
87.5	76.15	84.85	87.18	88.60	91.57	93.04	94.09	95.10	95.61	96.27	97.75
90.0	82.65	89.08	90.86	91.89	94.03	95.09	95.85	96.48	96.84	97.28	98.36
92.5	88.13	92.48	93.79	94.47	95.95	96.68	97.25	97.67	97.90	98.17	98.87
95.0	92.89	95.41	96.23	96.63	97.59	98.04	98.41	98.64	98.78	98.93	99.37
97.5	97.19	98.15	98.46	98.59	99.09	99.28	99.43	99.51	99.58	99.64	99.83

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Third-quartile storms; storm duration 12 to 24 hours										
2.5	0.34	0.79	1.04	1.23	1.39	1.82	2.16	3.19	4.45	4.02	7.72
5.0	.87	1.93	2.35	2.70	3.21	4.05	4.97	6.31	7.61	9.07	15.22
7.5	1.42	3.10	3.65	4.18	5.03	6.27	7.66	9.37	10.85	13.71	21.98
10.0	1.84	4.11	4.82	5.58	6.83	8.49	10.26	12.32	14.08	18.01	27.76
12.5	2.18	5.02	5.94	6.93	8.62	10.66	12.75	15.24	17.28	21.75	32.33
15.0	2.51	5.85	7.03	8.25	10.36	12.82	15.07	18.15	20.29	24.74	35.73
17.5	2.83	6.55	8.06	9.48	12.03	14.86	17.26	21.00	23.35	27.27	38.66
20.0	3.10	7.14	8.97	10.57	13.58	16.72	19.39	23.82	26.55	30.09	42.25
22.5	3.42	7.76	9.89	11.68	15.06	18.45	21.48	26.49	30.00	33.24	46.54
25.0	3.77	8.33	10.76	12.77	16.58	20.23	23.62	29.20	33.61	36.96	51.87
27.5	4.11	8.81	11.57	13.76	18.07	21.90	25.86	31.98	37.33	41.33	58.18
30.0	4.30	9.21	12.30	14.69	19.50	23.59	28.19	34.83	41.07	45.65	64.17
32.5	4.56	9.65	12.94	15.59	20.84	25.27	30.53	37.75	44.56	49.70	68.60
35.0	4.76	10.13	13.54	16.42	22.15	26.99	32.59	40.58	47.77	53.51	71.88
37.5	4.84	10.54	14.03	17.09	23.14	28.42	34.52	42.99	50.80	56.80	73.95
40.0	4.93	11.04	14.55	17.64	24.10	29.93	36.37	45.32	53.73	59.36	74.64
42.5	5.34	11.81	15.22	18.23	24.87	31.01	37.80	47.30	55.68	61.12	75.01
45.0	6.02	12.76	16.14	19.06	25.97	32.27	39.21	48.85	57.06	62.59	75.81
47.5	7.35	14.17	17.57	20.47	27.62	33.95	41.19	50.42	57.92	63.50	76.83
50.0	9.19	16.11	19.50	22.48	30.12	36.49	43.78	52.38	58.54	64.41	77.97
52.5	11.80	18.94	22.31	25.64	33.53	39.68	47.16	54.96	59.84	66.12	79.97
55.0	15.05	22.39	26.21	30.06	38.30	44.23	51.78	58.57	62.74	69.28	82.27
57.5	18.77	26.70	31.10	35.44	43.76	49.54	57.15	63.09	66.68	73.02	84.89
60.0	22.60	31.33	36.40	41.15	49.54	55.13	62.72	68.28	71.46	77.34	87.61
62.5	26.52	36.45	42.25	47.37	55.48	60.83	68.10	73.60	76.75	81.93	90.43
65.0	30.10	41.25	47.62	53.12	61.01	66.30	72.91	78.18	81.42	85.86	92.68
67.5	33.24	46.10	52.31	58.03	65.70	71.11	76.91	81.91	85.12	88.91	94.69
70.0	36.39	50.55	56.50	62.37	69.73	75.28	80.13	84.72	87.96	91.18	96.16
72.5	39.84	55.04	60.55	66.28	73.28	78.87	82.77	86.79	90.09	92.93	97.26
75.0	44.32	59.47	64.37	69.72	76.37	81.71	84.98	88.46	91.54	94.10	97.96
77.5	49.80	64.24	68.57	73.16	79.29	84.22	86.91	89.97	92.67	95.05	98.52
80.0	56.39	69.05	72.86	76.68	82.24	86.53	88.78	91.37	93.72	95.83	98.86
82.5	63.19	73.80	77.05	80.06	85.10	88.69	90.67	92.96	94.86	96.64	99.12
85.0	69.74	78.28	80.97	83.38	87.75	90.72	92.58	94.57	96.03	97.37	99.34
87.5	75.62	82.54	84.67	86.57	90.20	92.72	94.39	95.99	97.11	98.04	99.55
90.0	80.91	86.42	88.02	89.60	92.46	94.51	96.01	97.21	98.07	98.63	99.71
92.5	85.61	90.03	91.31	92.58	94.59	96.13	97.36	98.24	98.84	99.12	99.83
95.0	90.17	93.62	94.60	95.54	96.77	97.65	98.48	99.02	99.40	99.54	99.93
97.5	94.84	97.20	97.90	98.50	98.95	99.09	99.44	99.66	99.80	99.87	99.98

Supplement 4. Untrimmed and smoothed percentiles for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Third-quartile storms; storm duration 24 to 72 hours										
2.5	1.04	1.74	1.79	1.86	2.46	3.78	4.85	6.97	8.34	10.36	16.44
5.0	1.91	3.28	3.99	4.58	5.74	7.82	9.70	13.81	17.58	22.87	31.76
7.5	2.71	4.69	6.07	7.07	8.71	11.76	14.28	19.99	25.81	33.89	45.76
10.0	3.48	6.03	7.90	9.14	11.27	15.48	18.67	26.06	33.32	43.22	57.84
12.5	4.14	7.23	9.36	10.74	13.32	18.68	22.56	31.54	39.47	50.11	67.11
15.0	4.71	8.30	10.50	11.96	14.94	21.29	25.83	35.96	44.21	54.51	73.46
17.5	5.19	9.13	11.32	12.84	16.27	23.32	28.41	39.42	48.12	57.88	77.43
20.0	5.61	9.83	12.00	13.64	17.52	24.82	30.42	42.33	51.41	60.31	79.49
22.5	5.96	10.37	12.51	14.31	18.62	25.77	31.49	43.25	52.56	61.23	79.90
25.0	6.34	10.83	13.06	14.97	19.77	26.65	32.23	43.51	52.63	61.60	79.98
27.5	6.73	11.21	13.63	15.66	20.91	27.45	32.79	43.76	52.70	61.70	80.06
30.0	7.12	11.66	14.27	16.41	22.05	28.29	33.45	44.00	52.76	61.78	80.14
32.5	7.52	12.12	14.74	16.98	23.04	29.04	34.26	44.28	52.83	61.85	80.22
35.0	7.89	12.62	15.40	17.81	24.09	30.04	35.60	44.54	52.90	61.92	80.30
37.5	8.24	13.08	15.89	18.47	24.90	30.95	36.84	44.80	52.97	62.00	80.38
40.0	8.62	13.57	16.47	19.20	25.67	31.74	37.95	45.05	53.04	62.08	80.46
42.5	8.90	14.24	17.20	20.04	26.47	32.47	38.86	45.31	53.10	62.15	80.54
45.0	9.32	15.46	18.62	21.61	27.70	33.71	39.92	46.00	53.17	62.22	80.62
47.5	9.96	17.65	20.81	23.76	29.57	35.49	41.36	47.73	54.00	62.80	80.70
50.0	11.13	20.93	24.21	27.02	32.44	38.22	44.07	50.79	56.04	64.72	80.78
52.5	12.56	25.06	28.42	31.02	36.59	42.34	48.04	54.99	59.95	67.69	81.00
55.0	14.40	29.06	32.78	35.41	41.15	47.25	52.96	60.36	65.04	71.42	82.98
57.5	16.46	32.78	36.79	39.62	45.73	52.35	58.31	65.99	70.54	75.12	85.32
60.0	18.94	35.75	40.22	43.41	50.08	57.16	63.44	71.12	75.60	78.87	88.04
62.5	21.04	38.01	42.99	46.72	54.04	61.55	67.74	75.48	79.69	82.10	90.54
65.0	23.31	39.67	45.24	49.58	56.99	64.99	71.26	78.98	82.70	84.71	92.71
67.5	25.38	42.09	47.80	52.37	59.85	68.02	74.36	81.67	84.95	86.78	94.42
70.0	27.36	44.51	50.57	55.15	62.71	70.65	76.91	83.82	86.56	88.65	95.89
72.5	29.07	47.16	53.56	57.97	65.64	73.30	79.25	85.64	87.90	90.40	96.83
75.0	31.33	50.05	56.71	60.79	68.58	75.73	81.35	87.15	89.21	91.97	97.47
77.5	33.88	53.47	60.17	64.09	71.77	78.21	83.44	88.49	90.52	93.38	97.84
80.0	37.45	56.82	63.68	67.55	75.04	80.54	85.33	89.79	91.70	94.44	98.06
82.5	42.39	61.02	67.59	71.36	78.39	82.99	87.38	91.10	92.89	95.32	98.14
85.0	48.76	65.80	71.81	75.52	81.72	85.38	89.52	92.62	94.18	96.08	98.31
87.5	56.23	71.18	76.37	79.93	85.07	87.87	91.76	94.25	95.47	96.83	98.56
90.0	64.67	76.93	81.16	84.27	88.43	90.39	93.73	95.78	96.66	97.55	98.86
92.5	73.59	83.08	86.15	88.68	91.80	93.03	95.60	97.09	97.69	98.23	99.17
95.0	82.25	89.24	91.19	92.99	95.16	95.69	97.32	98.25	98.60	99.00	99.55
97.5	90.85	95.55	96.31	97.27	98.52	98.70	98.89	99.25	99.44	99.76	99.92

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Third-quartile storms; storm duration 0 to 72 hours										
2.5	0.63	1.21	1.52	1.78	1.89	2.46	3.44	5.02	6.08	7.56	12.53
5.0	1.43	2.56	3.10	3.59	4.55	5.82	7.63	10.15	11.95	15.25	26.43
7.5	2.18	3.85	4.62	5.33	6.99	8.88	11.60	14.94	17.36	22.17	38.98
10.0	2.95	5.12	6.13	7.05	9.14	11.65	15.22	19.35	22.43	28.29	49.41
12.5	3.55	6.23	7.53	8.63	10.96	13.97	18.20	23.07	26.58	32.94	57.12
15.0	4.00	7.20	8.74	10.00	12.53	15.94	20.70	26.16	29.90	36.41	61.90
17.5	4.37	8.01	9.74	11.12	13.85	17.55	22.75	28.43	32.37	38.98	64.91
20.0	4.67	8.72	10.58	12.12	15.15	19.12	24.49	30.41	34.48	41.04	66.49
22.5	4.86	9.29	11.26	12.96	16.33	20.48	25.93	31.84	35.74	42.31	67.34
25.0	5.16	9.85	11.83	13.71	17.55	21.92	27.49	33.27	37.02	43.80	68.15
27.5	5.58	10.39	12.42	14.49	18.78	23.34	29.00	34.62	38.23	45.17	69.24
30.0	5.89	10.89	12.93	15.27	19.96	24.74	30.47	36.03	39.55	46.39	70.23
32.5	6.22	11.34	13.42	15.94	21.04	25.98	31.85	37.26	40.72	47.58	71.24
35.0	6.47	11.76	13.93	16.66	22.14	27.32	33.28	38.67	42.26	49.13	72.13
37.5	6.63	12.13	14.40	17.28	22.99	28.34	34.47	39.91	43.74	50.57	72.80
40.0	6.73	12.51	14.91	17.85	23.70	29.23	35.57	41.13	45.22	52.00	73.63
42.5	6.99	13.05	15.60	18.53	24.40	30.10	36.53	42.17	46.46	53.21	74.40
45.0	7.48	14.04	16.71	19.72	25.48	31.34	37.72	43.59	48.00	54.63	75.27
47.5	8.49	15.77	18.63	21.61	27.28	33.09	39.50	45.53	49.95	56.40	76.41
50.0	9.88	18.19	21.34	24.43	30.04	35.86	42.19	48.37	52.72	58.94	77.89
52.5	11.75	21.36	24.66	27.94	33.76	39.68	45.90	52.21	56.49	62.53	79.59
55.0	13.94	24.82	28.53	32.00	38.26	44.31	50.51	57.16	61.29	67.15	81.70
57.5	16.27	28.47	32.69	36.43	43.02	49.32	55.60	62.45	66.54	72.14	84.07
60.0	18.77	31.98	36.68	40.78	47.65	54.33	60.59	67.62	71.51	76.72	86.62
62.5	21.27	35.54	40.53	44.86	52.11	59.15	65.33	72.35	75.95	80.64	89.18
65.0	23.77	38.86	44.26	48.81	56.18	63.45	69.51	76.32	79.61	83.60	91.42
67.5	26.47	42.63	48.03	52.78	60.05	67.38	73.33	79.59	82.61	85.97	93.35
70.0	29.45	46.50	51.79	56.60	63.83	70.94	76.69	82.31	85.00	87.81	94.91
72.5	32.55	50.68	55.67	60.48	67.54	74.28	79.79	84.67	87.07	89.50	96.04
75.0	36.54	55.04	59.68	64.46	71.22	77.35	82.47	86.64	88.83	91.02	96.83
77.5	41.40	59.82	63.96	68.49	74.93	80.36	84.97	88.50	90.44	92.50	97.43
80.0	46.85	64.54	68.20	72.49	78.51	83.23	87.23	90.14	91.82	93.70	97.81
82.5	53.06	69.43	72.56	76.45	81.92	86.02	89.38	91.79	93.19	94.82	98.09
85.0	59.93	74.24	76.88	80.27	85.14	88.65	91.42	93.38	94.54	95.87	98.38
87.5	66.90	78.92	81.14	83.97	88.10	91.12	93.41	94.96	95.85	96.84	98.69
90.0	73.81	83.40	85.26	87.59	90.83	93.29	95.15	96.34	96.99	97.68	99.01
92.5	80.85	87.78	89.38	91.12	93.47	95.27	96.68	97.56	97.99	98.42	99.39
95.0	87.62	92.00	93.39	94.59	96.12	97.13	98.03	98.58	98.82	99.07	99.85
97.5	94.33	96.19	97.39	98.05	98.75	98.89	99.25	99.47	99.55	99.65	100.00

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th	
Fourth-quartile storms; storm duration 0 to 6 hours												
2.5	--	0.15	0.42	1.06	1.30	1.39	2.08	2.35	2.61	2.64	--	
5.0	--	.50	.99	1.78	2.75	4.28	5.46	6.25	6.61	6.93	--	
7.5	--	.86	1.55	2.50	4.07	6.75	8.59	10.16	10.60	11.21	--	
10.0	--	1.21	2.12	3.22	5.17	8.92	11.27	14.06	14.60	15.50	--	
12.5	--	1.61	2.59	3.83	6.04	10.54	13.47	17.52	18.30	18.80	--	
15.0	--	2.02	3.06	4.44	6.91	12.16	15.67	20.97	22.01	22.10	--	
17.5	--	2.42	3.53	5.06	7.72	13.51	17.45	23.94	25.19	25.40	--	
20.0	--	2.83	3.88	5.52	8.50	14.62	19.00	25.98	27.54	28.70	--	
22.5	--	3.23	4.24	5.98	9.10	15.53	20.04	28.01	29.88	32.00	--	
25.0	--	3.63	4.49	6.27	9.67	16.65	21.18	29.60	31.58	34.00	--	
27.5	--	3.95	4.78	6.66	10.21	17.66	22.22	30.36	32.51	35.13	--	
30.0	--	4.26	5.06	7.06	10.89	18.60	23.26	31.13	33.43	36.25	--	
32.5	--	4.58	5.35	7.45	11.52	19.52	24.25	31.89	34.36	37.38	--	
35.0	--	4.90	5.54	7.87	12.30	20.41	25.22	32.15	34.80	38.58	--	
37.5	--	5.21	5.72	8.29	13.08	21.30	26.18	32.41	35.23	39.77	--	
40.0	--	5.53	5.98	8.69	13.92	22.01	26.94	32.65	35.64	40.97	--	
42.5	--	5.84	6.24	9.10	14.76	22.78	27.70	32.89	36.04	42.16	--	
45.0	--	6.16	6.50	9.50	15.60	23.55	28.46	33.13	36.45	43.36	--	
47.5	--	6.72	7.10	10.24	16.36	24.89	28.94	33.66	37.14	44.52	--	
50.0	--	7.28	8.00	10.98	17.12	25.51	29.43	34.20	37.83	45.69	--	
52.5	--	7.94	8.16	12.12	18.18	26.22	30.14	34.60	38.61	46.86	--	
55.0	--	8.61	8.68	12.90	19.01	26.63	30.49	34.80	38.97	48.02	--	
57.5	--	9.65	10.34	14.39	19.80	26.70	30.78	35.50	39.74	49.28	--	
60.0	--	10.69	12.01	15.88	21.01	27.00	31.37	36.20	40.52	50.54	--	
62.5	--	11.73	14.15	17.93	22.80	28.15	32.61	37.75	41.98	51.80	--	
65.0	--	13.38	16.35	20.06	24.18	29.41	33.58	39.38	43.60	53.74	--	
67.5	--	15.02	18.55	22.19	26.27	31.70	35.64	41.02	45.21	55.68	--	
70.0	--	17.33	21.17	24.62	29.21	35.06	38.73	43.55	47.67	58.27	--	
72.5	--	19.47	24.22	27.44	32.59	38.95	42.60	47.27	51.24	61.23	--	
75.0	--	21.95	27.24	30.36	36.19	43.21	47.31	52.26	56.08	65.01	--	
77.5	--	23.90	30.74	33.81	41.00	48.68	53.16	57.84	61.73	69.42	--	
80.0	--	26.13	34.50	37.75	46.37	54.47	59.29	63.96	67.73	73.72	--	
82.5	--	28.99	39.04	42.45	52.20	60.56	65.54	70.33	73.82	78.82	--	
85.0	--	34.91	44.78	48.36	58.12	66.65	72.11	76.46	79.90	84.05	--	
87.5	--	43.08	52.34	55.85	64.81	72.96	77.99	82.37	85.52	89.01	--	
90.0	--	54.07	61.20	64.27	71.97	79.31	83.92	87.64	90.17	92.99	--	
92.5	--	66.56	71.36	73.59	79.37	85.38	89.19	91.85	93.70	96.37	--	
95.0	--	79.99	82.48	83.79	86.93	91.02	93.77	95.54	96.80	98.46	--	
97.5	--	92.85	93.93	94.25	95.04	96.74	97.86	98.64	99.13	99.68	--	

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Fourth-quartile storms; storm duration 6 to 12 hours										
2.5	0.43	0.78	0.95	1.11	1.96	3.28	3.91	5.87	7.73	8.61	11.61
5.0	.96	2.10	2.49	2.90	4.58	6.81	9.10	11.95	13.82	14.80	18.19
7.5	1.61	3.45	4.05	4.70	7.19	10.38	13.94	17.32	19.01	20.12	23.93
10.0	2.26	4.89	5.79	6.75	9.96	14.00	18.20	21.63	23.06	24.44	28.74
12.5	2.95	6.32	7.47	8.86	12.78	17.58	21.93	25.10	26.35	27.98	32.64
15.0	3.66	7.81	9.27	11.11	15.75	20.91	25.08	28.04	29.23	31.01	35.59
17.5	4.20	9.13	11.14	13.30	18.38	23.69	27.45	30.20	31.54	33.46	38.16
20.0	4.63	10.71	13.26	15.72	21.20	26.13	29.56	32.33	34.04	35.99	40.34
22.5	5.06	11.93	14.92	17.57	23.60	28.10	31.33	34.39	36.69	38.47	42.24
25.0	5.42	13.21	16.76	19.47	25.80	29.64	32.74	36.15	38.86	40.49	43.52
27.5	5.65	14.25	18.56	21.19	27.10	30.77	33.93	37.71	40.60	42.09	44.52
30.0	5.85	15.10	19.88	22.40	28.13	31.51	34.80	39.02	41.97	43.30	45.22
32.5	6.09	15.49	20.77	23.11	28.51	31.91	35.43	39.94	42.93	44.16	45.84
35.0	6.35	16.00	21.83	23.90	28.59	32.16	36.10	40.78	43.44	44.53	46.32
37.5	6.59	16.07	22.22	24.05	28.67	32.27	36.50	41.20	43.69	44.74	47.39
40.0	6.92	16.13	22.37	24.22	28.76	32.38	36.86	41.35	43.83	44.85	48.80
42.5	6.94	16.31	22.52	24.39	28.84	32.49	37.10	41.44	43.91	44.92	50.40
45.0	7.31	16.49	22.68	24.56	28.92	32.60	37.17	41.45	43.99	44.99	52.51
47.5	7.68	16.68	22.83	24.74	29.00	32.71	37.51	41.58	44.06	45.06	55.05
50.0	8.05	16.86	22.98	24.91	29.09	32.82	37.84	41.70	44.14	45.13	57.66
52.5	8.42	17.04	23.13	25.08	29.18	32.93	38.18	41.83	44.22	45.86	60.26
55.0	8.79	17.22	23.29	25.25	29.26	33.04	38.52	41.95	44.30	46.73	62.62
57.5	9.16	17.40	23.44	25.42	29.34	33.70	38.86	42.70	45.14	48.13	65.26
60.0	9.53	17.58	23.59	25.60	29.43	34.51	39.19	43.23	46.88	50.32	67.91
62.5	9.90	17.77	23.74	25.76	29.51	36.14	40.00	44.57	48.60	52.62	70.48
65.0	10.27	17.95	23.90	25.94	30.90	38.06	42.01	46.22	50.46	54.93	72.96
67.5	10.64	19.50	24.05	26.11	33.28	40.27	44.33	48.29	52.83	57.73	75.95
70.0	11.01	21.37	25.00	27.20	36.55	43.02	46.88	50.94	55.73	60.85	78.91
72.5	12.50	25.56	28.31	30.48	40.42	46.09	49.60	53.91	58.71	63.88	81.72
75.0	16.23	30.25	33.02	35.06	44.75	49.94	52.96	57.63	62.47	67.23	84.35
77.5	21.71	35.37	38.05	40.39	49.92	54.29	56.80	62.00	66.57	71.06	87.08
80.0	27.03	40.50	42.90	45.73	55.47	59.74	62.13	67.29	71.40	75.05	89.34
82.5	31.18	45.59	48.07	51.73	61.08	65.93	68.37	73.21	76.62	79.17	91.40
85.0	34.32	50.14	52.87	57.79	66.87	72.69	75.17	79.20	82.03	83.73	93.35
87.5	38.22	55.59	58.49	64.52	73.01	79.21	81.60	84.91	86.98	88.05	95.20
90.0	43.40	61.88	65.08	71.39	79.07	85.28	87.49	89.94	91.46	91.78	96.60
92.5	52.04	69.74	73.07	78.53	85.16	90.46	92.13	93.82	94.86	94.99	97.86
95.0	64.33	79.17	82.15	85.56	91.29	94.79	95.79	96.64	97.33	97.49	98.87
97.5	79.39	89.96	92.17	92.66	97.41	98.40	98.73	98.92	99.13	99.20	99.76

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Fourth-quartile storms; storm duration 12 to 24 hours											
2.5	0.35	0.98	0.97	1.36	2.12	2.60	3.90	4.69	5.64	7.30	10.07
5.0	.65	1.65	1.79	2.26	3.24	3.99	5.44	8.23	9.52	11.62	14.12
7.5	.86	2.20	2.58	3.14	4.33	5.35	6.81	10.96	12.70	15.06	17.92
10.0	1.12	2.80	3.38	4.00	5.31	6.51	8.01	12.93	15.18	17.67	21.00
12.5	1.27	3.34	4.01	4.69	6.09	7.49	9.08	13.96	16.70	19.32	23.60
15.0	1.67	4.01	4.77	5.45	7.11	8.55	10.12	14.29	17.64	20.22	26.01
17.5	2.02	4.70	5.76	6.56	8.40	9.90	11.56	15.02	18.71	21.21	28.29
20.0	2.48	5.51	7.05	7.96	9.81	11.55	13.44	16.34	20.07	22.64	30.51
22.5	2.68	6.22	8.26	9.61	11.49	13.55	15.75	18.34	21.80	24.52	32.87
25.0	2.71	7.07	9.57	11.34	13.57	15.83	18.35	21.13	24.27	27.05	35.26
27.5	2.74	7.68	10.44	12.84	15.41	18.17	21.01	24.36	27.07	30.08	37.60
30.0	2.80	8.26	10.60	14.01	16.94	20.31	23.34	27.36	29.84	32.96	40.04
32.5	2.91	8.81	10.77	14.87	18.41	22.17	25.38	30.14	32.66	35.82	42.47
35.0	3.43	9.51	10.93	15.39	19.66	23.81	27.13	32.37	35.19	38.36	44.44
37.5	4.22	10.13	11.34	16.04	20.80	25.42	28.82	34.28	37.43	40.56	46.37
40.0	5.44	11.03	12.37	16.92	22.04	27.01	30.42	35.93	39.39	42.31	48.17
42.5	6.70	12.15	13.72	17.99	23.34	28.66	32.03	37.46	41.07	43.90	49.72
45.0	8.16	13.43	15.60	19.11	24.65	30.40	33.70	39.04	42.54	45.32	51.09
47.5	9.58	14.69	17.44	20.28	26.00	32.24	35.47	40.66	43.98	46.79	52.66
50.0	10.96	16.08	19.06	21.43	27.31	34.19	37.22	42.23	45.25	48.22	54.00
52.5	12.38	17.53	20.57	22.74	28.81	36.33	39.06	43.74	46.56	49.72	55.71
55.0	13.71	18.82	21.89	23.79	30.27	37.88	40.46	45.07	47.72	51.06	57.16
57.5	15.06	20.13	23.14	24.92	31.84	39.13	41.66	46.30	48.94	52.37	59.36
60.0	16.20	21.46	24.39	26.10	33.36	39.94	42.42	47.21	49.98	53.45	61.24
62.5	17.40	22.79	25.68	27.62	34.94	40.53	43.14	48.04	51.12	54.57	64.21
65.0	18.16	23.94	26.92	29.15	36.27	40.85	43.81	48.91	52.22	55.46	67.18
67.5	18.99	25.26	28.42	31.13	37.95	41.87	45.17	50.03	53.63	56.68	71.21
70.0	19.26	26.44	29.84	33.09	39.59	43.44	46.95	51.40	55.14	58.09	74.36
72.5	19.52	27.63	31.56	35.37	41.63	45.76	49.66	53.82	57.67	60.76	78.59
75.0	19.85	28.57	33.22	37.69	43.48	48.02	52.50	56.72	60.54	63.87	81.49
77.5	20.18	29.84	35.17	40.52	45.54	50.62	55.67	60.22	64.03	67.93	84.55
80.0	20.94	31.58	37.58	43.56	48.14	53.74	59.20	64.29	67.97	72.28	86.62
82.5	22.45	34.03	40.78	47.63	51.87	57.60	63.39	68.91	72.45	77.09	89.03
85.0	24.97	37.20	44.67	52.31	56.64	62.33	68.05	73.64	76.78	81.08	90.65
87.5	29.44	42.76	50.56	58.40	63.26	68.71	73.84	78.80	81.43	85.05	92.71
90.0	36.14	50.28	58.00	65.51	71.26	75.99	80.10	84.12	86.04	88.74	94.32
92.5	46.13	59.57	66.81	73.64	79.37	83.17	86.22	89.13	90.43	92.27	96.08
95.0	59.21	70.64	76.79	82.22	87.29	90.06	91.97	93.74	94.49	95.49	97.63
97.5	74.47	83.29	87.75	91.48	95.15	96.69	97.45	98.15	98.38	98.78	99.21

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Fourth-quartile storms; storm duration 24 to 72 hours										
2.5	0.59	1.02	1.45	1.74	2.23	3.39	5.06	7.94	9.92	11.78	14.89
5.0	1.05	1.87	2.82	3.29	4.52	6.33	9.14	12.90	16.46	18.70	21.56
7.5	1.50	3.10	4.14	4.78	6.61	9.07	12.81	17.08	21.84	24.25	26.78
10.0	1.93	4.28	5.44	6.23	8.43	11.40	15.82	20.26	25.63	28.13	30.62
12.5	2.31	5.41	6.70	7.63	10.03	13.24	18.03	22.36	27.75	30.40	33.16
15.0	2.84	6.48	7.91	8.95	11.56	15.04	20.00	24.05	28.89	31.59	34.82
17.5	3.57	7.47	9.02	10.15	12.94	16.72	21.66	25.49	29.65	32.18	36.20
20.0	4.47	8.54	10.17	11.39	14.41	18.36	23.33	27.18	30.55	33.07	37.86
22.5	5.52	9.72	11.39	12.68	15.92	19.97	24.87	28.86	31.75	34.32	39.63
25.0	6.77	11.15	12.75	14.07	17.50	21.68	26.52	30.85	33.50	35.92	41.30
27.5	8.19	12.84	14.32	15.64	19.01	23.32	28.09	32.84	35.42	37.68	42.83
30.0	9.50	14.74	16.13	17.36	20.58	24.99	29.66	34.87	37.37	39.45	44.33
32.5	10.74	16.86	18.09	19.13	22.18	26.63	31.12	36.63	39.19	41.05	45.83
35.0	11.78	18.65	19.79	20.90	23.78	28.25	32.66	38.25	40.68	42.40	47.26
37.5	12.69	19.95	21.14	22.48	25.30	29.74	34.18	39.54	41.75	43.50	48.61
40.0	13.29	20.97	22.27	23.87	26.86	31.26	35.65	40.79	42.74	44.51	49.92
42.5	13.70	21.58	23.11	25.06	28.31	32.73	37.05	41.83	43.66	45.43	51.27
45.0	13.80	21.85	23.71	26.12	29.72	34.24	38.49	42.91	44.49	46.27	52.54
47.5	13.85	22.31	24.43	27.02	31.09	35.77	39.93	44.03	45.53	47.18	53.67
50.0	13.90	22.92	25.24	27.85	32.44	37.35	41.40	45.22	46.65	48.07	54.89
52.5	14.24	23.56	26.15	28.69	33.78	38.83	42.94	46.40	47.68	48.95	56.03
55.0	14.88	24.55	27.27	29.63	35.25	40.33	44.46	47.69	48.77	49.95	56.94
57.5	15.89	25.35	28.27	30.42	36.47	41.63	45.80	49.07	50.10	51.22	58.05
60.0	17.21	26.26	29.48	31.29	37.58	42.88	47.12	50.54	51.51	52.74	59.33
62.5	18.58	27.27	30.78	32.43	38.71	44.01	48.35	51.96	53.05	54.39	61.08
65.0	19.74	28.17	31.91	33.71	39.88	45.03	49.44	53.39	54.73	56.12	63.24
67.5	21.06	28.95	33.04	35.11	41.01	46.15	50.62	54.88	56.43	57.89	65.91
70.0	22.59	30.17	34.40	36.94	42.51	47.63	52.01	56.33	58.04	59.59	68.73
72.5	24.62	31.67	35.91	39.06	44.24	49.39	53.75	57.99	59.84	61.37	71.72
75.0	26.98	33.96	38.12	41.61	46.62	51.88	56.20	60.35	62.26	63.80	74.22
77.5	29.58	37.07	41.12	44.71	49.53	55.20	59.36	63.43	65.34	66.96	76.99
80.0	32.55	40.97	44.66	48.25	53.16	59.07	63.21	67.23	69.22	70.98	80.10
82.5	35.97	45.72	49.10	52.41	57.42	63.55	67.85	71.87	73.93	75.80	83.49
85.0	39.68	51.10	54.19	57.17	62.52	68.54	72.98	77.02	79.12	81.01	87.05
87.5	44.87	57.06	59.93	62.61	68.08	73.75	78.22	82.18	84.21	86.01	90.83
90.0	52.10	63.89	66.42	68.76	74.05	79.14	83.42	86.99	88.84	90.47	94.17
92.5	61.10	71.78	73.97	75.94	80.30	84.66	88.46	91.33	92.77	94.05	96.66
95.0	71.73	80.45	82.29	83.86	86.54	89.97	93.15	95.06	95.97	96.76	98.39
97.5	83.82	89.84	91.23	92.39	92.81	95.28	97.53	98.35	98.63	98.95	99.61

Supplement 4. Untrimmed and smoothed percentiles for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Fourth-quartile storms; storm duration 0 to 72 hours										
2.5	0.44	0.84	1.20	1.64	1.69	2.29	4.07	6.12	7.47	9.01	13.28
5.0	.95	1.78	2.39	2.93	3.95	4.91	8.14	10.99	12.86	14.66	19.86
7.5	1.37	2.66	3.53	4.18	5.98	7.33	11.75	15.26	17.48	19.41	25.15
10.0	1.74	3.57	4.66	5.45	7.72	9.52	14.79	18.70	21.18	23.17	29.03
12.5	1.99	4.40	5.74	6.60	9.15	11.45	17.11	21.26	23.86	25.97	31.61
15.0	2.45	5.30	6.79	7.68	10.50	13.35	18.83	23.19	25.76	28.02	33.32
17.5	2.90	6.28	7.82	8.82	11.79	15.15	20.28	24.71	27.23	29.62	34.80
20.0	3.51	7.41	9.00	10.11	13.29	17.02	21.85	26.23	28.76	31.35	36.59
22.5	4.17	8.44	10.26	11.48	14.89	18.78	23.47	27.85	30.33	33.10	38.57
25.0	5.02	9.60	11.76	13.14	16.69	20.54	25.42	29.73	32.21	34.84	40.53
27.5	5.74	10.65	13.32	14.97	18.56	22.23	27.54	31.71	34.32	36.62	42.31
30.0	6.48	11.61	14.94	16.83	20.37	23.98	29.37	33.63	36.38	38.29	43.75
32.5	7.18	12.47	16.37	18.61	22.03	25.59	30.96	35.42	38.26	39.81	44.97
35.0	7.89	13.35	17.67	20.13	23.51	27.14	32.38	37.02	39.90	41.26	46.02
37.5	8.50	14.16	18.65	21.28	24.77	28.51	33.50	38.30	41.15	42.57	47.03
40.0	9.13	15.00	19.54	22.29	25.92	29.87	34.58	39.49	42.17	43.72	48.18
42.5	9.73	15.85	20.27	22.96	26.91	31.10	35.72	40.54	43.06	44.76	49.65
45.0	10.37	16.73	21.07	23.49	27.93	32.37	36.95	41.60	43.90	45.71	51.18
47.5	10.95	17.60	21.77	24.09	28.98	33.66	38.22	42.69	44.85	46.59	52.81
50.0	11.57	18.46	22.38	24.85	30.01	34.95	39.50	43.86	45.91	47.49	54.39
52.5	12.27	19.40	23.10	25.59	31.09	36.19	40.78	45.09	47.03	48.49	55.83
55.0	13.13	20.28	23.80	26.63	32.24	37.45	42.08	46.38	48.19	49.63	56.92
57.5	14.08	21.20	24.55	27.82	33.34	38.61	43.23	47.68	49.52	50.96	58.36
60.0	14.92	22.12	25.30	28.93	34.50	39.67	44.27	48.89	50.75	52.36	59.86
62.5	15.93	23.13	26.29	29.97	35.75	40.75	45.27	50.07	52.02	53.84	62.00
65.0	17.03	24.11	27.24	31.04	36.95	41.83	46.33	51.19	53.31	55.37	64.47
67.5	18.39	25.53	28.68	32.25	38.34	43.15	47.58	52.41	54.66	56.96	67.52
70.0	19.85	27.16	30.27	33.67	39.92	44.85	49.17	53.72	56.05	58.58	70.46
72.5	22.02	29.51	32.73	35.81	41.85	47.11	51.31	55.72	58.12	60.68	73.80
75.0	24.15	32.22	35.51	38.50	44.25	49.94	54.15	58.44	60.86	63.46	76.79
77.5	26.35	35.42	38.82	41.75	47.18	53.43	57.59	61.95	64.34	66.97	79.95
80.0	28.62	38.93	42.42	45.40	50.89	57.53	61.72	66.22	68.61	71.24	82.93
82.5	31.25	43.06	46.75	49.79	55.56	62.26	66.62	71.30	73.68	76.20	86.07
85.0	34.13	47.35	51.25	54.59	60.93	67.55	72.02	76.61	78.89	81.29	89.05
87.5	38.89	53.06	57.06	60.45	67.11	73.39	77.61	81.87	83.94	86.09	92.00
90.0	45.85	60.14	64.00	67.29	73.89	79.43	83.22	86.78	88.55	90.34	94.54
92.5	55.22	68.57	72.07	75.11	80.82	85.42	88.49	91.20	92.53	93.84	96.71
95.0	66.87	78.15	81.02	83.56	87.77	91.21	93.29	95.04	95.82	96.59	98.31
97.5	80.38	88.83	90.79	92.58	94.75	96.81	97.72	98.44	98.66	98.89	99.52

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First- through fourth-quartile storms combined; storm duration 0 to 6 hours											
2.5	0.57	1.88	2.08	2.29	3.21	4.08	5.74	6.87	8.29	9.86	12.52
5.0	1.83	4.19	4.30	5.55	7.74	10.03	12.66	15.17	17.08	19.84	26.03
7.5	2.98	6.43	7.07	8.70	12.09	15.89	19.46	23.40	25.83	29.58	38.37
10.0	4.13	8.77	9.83	11.92	16.33	21.73	26.41	31.77	34.61	39.10	49.40
12.5	5.28	11.17	12.52	15.03	20.37	27.40	33.28	39.81	43.08	47.99	58.82
15.0	6.52	13.54	15.19	18.19	24.34	32.57	39.79	47.61	51.29	56.07	66.74
17.5	7.68	15.66	17.49	21.05	28.17	37.05	45.58	54.35	58.28	62.61	72.66
20.0	8.96	17.94	20.00	24.16	32.05	41.29	50.98	60.16	64.32	68.12	77.67
22.5	10.39	20.02	22.55	27.03	35.67	44.94	55.52	64.79	69.29	72.50	81.35
25.0	11.99	22.62	25.64	30.44	39.45	48.52	59.46	68.71	73.25	75.98	83.99
27.5	13.61	25.24	28.74	33.59	43.18	52.10	62.81	71.65	76.08	78.72	85.94
30.0	15.35	28.40	32.21	37.38	47.10	55.86	66.04	74.59	78.92	81.38	87.69
32.5	17.18	31.39	35.48	40.95	50.74	59.43	68.81	77.27	81.23	83.54	89.11
35.0	19.03	34.47	38.78	45.09	54.85	63.02	71.55	79.88	83.42	85.51	90.52
37.5	20.87	36.32	41.43	48.32	58.24	66.07	73.82	82.01	85.23	87.08	91.75
40.0	22.58	38.14	44.03	51.82	61.65	69.10	76.14	83.97	86.88	88.42	92.81
42.5	24.27	39.23	46.47	54.34	64.18	71.63	77.96	85.24	87.89	89.29	93.62
45.0	26.05	40.64	49.00	56.87	66.66	73.93	79.79	86.30	88.82	90.12	94.20
47.5	27.91	42.33	51.43	58.80	68.39	75.94	81.29	87.07	89.43	90.72	94.67
50.0	29.78	44.92	54.00	60.89	70.36	77.94	82.83	87.82	90.11	91.39	95.11
52.5	31.98	47.68	56.56	62.62	71.67	79.48	84.12	88.51	90.70	92.01	95.58
55.0	33.99	51.22	59.24	64.80	73.39	80.93	85.49	89.29	91.33	92.62	95.98
57.5	36.02	54.66	61.80	66.89	75.00	82.35	86.66	90.05	91.92	93.19	96.39
60.0	37.76	58.02	64.38	69.06	76.76	83.79	87.93	90.88	92.57	93.78	96.73
62.5	39.45	61.22	66.91	71.30	78.42	85.06	89.06	91.66	93.16	94.30	97.07
65.0	41.11	64.42	69.45	73.65	80.30	86.41	90.20	92.46	93.78	94.87	97.34
67.5	43.57	67.36	71.97	75.85	81.97	87.74	91.25	93.24	94.37	95.39	97.61
70.0	46.33	70.26	74.53	78.03	83.66	88.93	92.26	94.00	94.98	95.92	97.87
72.5	50.64	73.14	77.10	80.24	85.32	90.06	93.13	94.70	95.54	96.43	98.13
75.0	55.94	76.04	79.71	82.50	87.06	91.24	94.01	95.42	96.14	96.96	98.38
77.5	61.89	78.79	82.31	84.72	88.72	92.38	94.80	96.06	96.68	97.45	98.63
80.0	67.60	81.53	84.78	86.93	90.39	93.46	95.63	96.70	97.22	97.90	98.86
82.5	73.38	84.29	87.20	89.11	91.99	94.52	96.38	97.28	97.72	98.28	99.08
85.0	78.09	86.87	89.44	91.12	93.45	95.51	97.10	97.83	98.19	98.63	99.27
87.5	82.29	89.33	91.53	92.95	94.73	96.41	97.74	98.32	98.60	98.92	99.46
90.0	86.01	91.76	93.44	94.65	95.97	97.25	98.31	98.76	98.96	99.17	99.62
92.5	89.75	94.09	95.32	96.30	97.20	98.08	98.80	99.13	99.28	99.42	99.76
95.0	93.41	96.26	97.12	97.78	98.34	98.85	99.28	99.46	99.55	99.66	99.88
97.5	97.17	98.45	98.91	99.20	99.49	99.63	99.76	99.77	99.81	99.89	99.99

Supplement 4. Untrimmed and smoothed percentiles for empirical hietograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First- through fourth-quartile storms combined; storm duration 6 to 12 hours											
2.5	0.66	1.63	2.19	2.95	4.87	6.08	6.87	9.07	10.62	12.68	19.43
5.0	1.83	3.83	4.84	6.06	9.12	12.28	15.33	19.11	22.19	25.51	35.91
7.5	2.91	5.96	7.38	9.02	13.30	18.29	23.21	28.32	32.78	37.05	50.48
10.0	3.98	8.14	10.01	12.04	17.50	23.87	29.95	36.49	42.02	46.80	62.63
12.5	5.02	10.14	12.40	14.90	21.31	28.70	35.46	43.29	49.51	54.40	71.53
15.0	6.05	12.12	14.81	17.64	24.89	32.88	40.29	48.98	55.52	60.28	77.49
17.5	6.99	13.81	16.90	20.14	27.73	36.16	44.17	53.48	60.03	64.68	81.20
20.0	7.97	15.52	19.07	22.61	30.33	38.83	47.61	57.53	63.77	68.46	83.63
22.5	8.91	16.91	20.87	24.71	32.51	41.05	50.88	60.89	66.80	71.64	84.94
25.0	9.88	18.46	22.80	26.83	34.73	43.07	53.95	63.96	69.56	74.52	86.03
27.5	10.77	19.85	24.35	28.63	36.60	44.76	56.71	66.92	72.22	77.26	87.04
30.0	11.61	21.11	25.86	30.30	38.53	46.45	59.14	69.69	74.79	79.63	87.89
32.5	12.33	22.04	26.86	31.61	40.10	47.94	61.22	71.91	77.04	81.49	88.67
35.0	12.92	23.06	27.92	32.87	41.68	49.64	63.12	73.95	78.97	83.02	89.41
37.5	13.23	23.76	28.51	33.69	42.96	51.30	64.73	75.64	80.48	84.32	90.09
40.0	13.64	24.42	29.15	34.52	44.24	53.14	66.24	76.92	81.47	85.13	90.74
42.5	13.86	25.10	29.68	35.19	45.36	54.95	67.65	77.90	82.04	85.70	91.35
45.0	14.24	26.00	30.46	36.03	46.50	56.94	68.99	78.86	82.43	86.09	91.88
47.5	14.81	26.80	31.16	36.90	47.63	58.83	70.26	79.71	82.79	86.40	92.39
50.0	15.61	27.85	32.29	38.21	49.03	60.79	71.63	80.55	83.13	86.53	92.84
52.5	16.61	29.16	33.71	39.77	50.48	62.73	72.93	81.38	83.63	86.85	93.28
55.0	18.00	30.88	35.47	41.66	52.40	64.70	74.31	82.19	84.23	87.26	93.70
57.5	19.41	32.78	37.47	43.71	54.55	66.67	75.81	83.02	84.93	87.83	94.12
60.0	20.96	35.06	39.87	46.22	56.91	68.68	77.27	83.85	85.71	88.46	94.53
62.5	22.72	37.62	42.40	48.77	59.38	70.72	78.74	84.71	86.61	89.24	94.94
65.0	24.41	40.28	45.06	51.48	62.06	72.80	80.21	85.54	87.51	90.00	95.34
67.5	26.33	42.87	47.80	54.43	64.74	74.92	81.66	86.51	88.48	90.76	95.74
70.0	28.62	45.44	50.75	57.62	67.63	77.07	83.09	87.49	89.46	91.51	96.13
72.5	31.66	48.23	53.87	60.73	70.49	79.17	84.55	88.59	90.48	92.28	96.52
75.0	35.21	51.35	57.36	64.12	73.38	81.33	86.07	89.73	91.50	93.06	96.91
77.5	39.55	55.11	61.28	67.70	76.43	83.58	87.66	90.98	92.53	93.89	97.28
80.0	44.18	59.68	65.87	71.53	79.45	85.73	89.23	92.20	93.56	94.74	97.65
82.5	49.39	65.20	70.99	75.65	82.51	87.91	90.86	93.47	94.60	95.62	98.01
85.0	54.82	71.20	76.36	79.99	85.66	90.06	92.47	94.68	95.59	96.48	98.36
87.5	61.07	77.32	81.62	84.33	88.77	92.16	94.05	95.84	96.55	97.29	98.71
90.0	67.68	82.97	86.48	88.40	91.62	94.05	95.52	96.91	97.44	98.00	99.05
92.5	75.21	88.18	90.75	92.09	94.24	95.87	96.90	97.88	98.24	98.64	99.36
95.0	83.13	92.83	94.46	95.36	96.58	97.52	98.15	98.74	98.97	99.20	99.65
97.5	91.32	97.03	97.80	98.33	98.76	99.10	99.32	99.52	99.64	99.72	99.94

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First- through fourth-quartile storms combined; storm duration 12 to 24 hours											
2.5	1.48	1.89	2.62	4.09	5.56	7.59	7.94	10.13	11.97	14.36	21.00
5.0	2.95	4.94	6.25	7.26	11.83	15.49	17.64	21.50	24.46	28.05	37.22
7.5	4.42	8.00	9.91	12.13	18.03	23.18	26.81	31.95	35.82	40.39	51.40
10.0	5.87	11.00	13.56	17.02	24.26	30.50	35.02	40.94	45.55	50.85	62.97
12.5	7.27	13.93	17.16	21.82	30.31	37.08	42.14	48.22	53.32	59.15	71.61
15.0	8.57	16.49	20.31	26.14	35.63	42.81	48.44	54.21	59.39	65.35	77.45
17.5	9.63	18.63	23.06	29.87	40.17	47.50	53.72	59.20	64.05	69.78	80.98
20.0	10.66	20.49	25.48	33.08	43.98	51.47	58.56	63.76	68.11	73.38	83.50
22.5	11.67	22.06	27.53	35.39	46.96	54.64	62.97	68.17	71.83	76.49	85.39
25.0	12.49	23.35	29.26	37.06	49.07	57.26	66.87	72.63	75.58	79.39	86.99
27.5	13.12	24.67	30.95	38.52	50.92	59.40	70.10	76.69	79.25	82.35	88.61
30.0	13.67	25.79	32.37	39.68	52.12	60.90	72.40	79.87	82.42	85.08	90.35
32.5	13.94	26.68	33.37	40.43	52.84	61.56	73.57	82.05	84.91	87.46	92.01
35.0	14.20	27.61	34.41	41.31	53.36	62.15	74.16	83.23	86.69	89.32	93.49
37.5	14.65	28.48	35.17	42.02	53.61	62.44	74.34	83.51	87.66	90.58	94.66
40.0	15.34	29.42	35.97	42.66	53.70	62.75	74.49	83.63	88.02	91.30	95.51
42.5	16.21	30.47	36.93	43.47	53.85	63.36	74.63	83.75	88.23	91.77	96.05
45.0	17.35	31.69	38.17	44.41	54.30	64.34	74.78	83.88	88.32	91.93	96.34
47.5	18.54	33.00	39.39	45.30	54.88	65.12	75.40	84.00	88.45	92.04	96.48
50.0	19.67	34.49	40.88	46.49	55.98	66.17	76.26	84.12	88.72	92.17	96.58
52.5	21.02	36.20	42.65	48.06	57.57	67.42	77.30	85.05	89.27	92.41	96.71
55.0	22.63	38.49	44.86	50.00	59.55	68.89	78.52	86.07	89.84	92.62	96.84
57.5	24.70	41.20	47.41	52.55	61.73	70.76	79.90	87.34	90.67	93.04	97.09
60.0	26.98	43.73	50.07	55.27	64.16	73.06	81.38	88.58	91.55	93.51	97.36
62.5	29.74	46.34	52.77	57.95	66.61	75.36	82.68	89.72	92.43	94.06	97.67
65.0	32.48	48.66	55.12	60.32	68.91	77.49	83.99	90.67	93.14	94.59	97.96
67.5	35.30	50.52	57.02	62.35	71.04	79.34	85.29	91.54	93.81	95.16	98.22
70.0	37.77	52.15	58.68	63.91	73.18	80.82	86.42	92.14	94.27	95.60	98.39
72.5	40.28	54.33	60.51	65.67	75.28	82.16	87.37	92.72	94.69	96.05	98.54
75.0	42.52	56.76	62.56	67.62	77.32	83.43	88.40	93.28	95.08	96.42	98.66
77.5	44.90	59.67	65.09	69.97	79.37	84.77	89.43	93.89	95.49	96.77	98.78
80.0	47.27	63.00	68.03	72.56	81.47	86.17	90.49	94.49	95.92	97.08	98.90
82.5	50.17	66.82	71.40	75.59	83.64	87.67	91.63	95.15	96.39	97.43	99.03
85.0	53.29	70.64	74.94	78.68	85.80	89.19	92.81	95.81	96.87	97.75	99.16
87.5	57.60	74.85	78.83	82.09	88.04	90.85	94.01	96.51	97.38	98.10	99.31
90.0	63.11	79.41	82.85	85.56	90.37	92.56	95.21	97.20	97.91	98.48	99.45
92.5	69.98	84.29	87.04	89.21	92.78	94.38	96.41	97.93	98.45	98.88	99.60
95.0	77.90	89.30	91.17	92.82	95.27	96.24	97.62	98.66	98.99	99.28	99.77
97.5	86.94	94.61	95.41	96.51	97.84	98.15	98.84	99.41	99.55	99.70	99.93

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First- through fourth-quartile storms combined; storm duration 24 to 72 hours											
2.5	1.35	1.70	2.10	2.63	4.21	6.34	9.16	12.26	14.52	17.45	24.38
5.0	2.23	4.15	5.03	6.27	9.09	13.14	18.05	23.88	27.40	31.57	40.07
7.5	3.05	6.41	7.75	9.61	13.58	19.21	26.00	34.16	38.81	44.01	53.80
10.0	3.88	8.36	10.07	12.49	17.46	24.29	32.73	42.87	48.46	54.51	65.17
12.5	4.68	9.84	11.91	14.76	20.61	28.20	37.99	49.52	55.79	62.54	73.78
15.0	5.45	11.02	13.51	16.69	23.19	31.07	41.94	54.06	60.70	67.90	79.36
17.5	6.18	11.88	14.75	18.17	25.10	32.93	44.53	56.96	63.93	71.31	82.92
20.0	6.97	12.73	15.95	19.61	26.77	34.36	46.47	58.97	65.94	73.41	85.23
22.5	7.74	13.54	17.15	20.93	28.28	35.43	47.72	59.79	66.52	73.95	86.37
25.0	8.58	14.57	18.44	22.35	29.79	36.48	48.97	60.18	66.68	73.98	86.87
27.5	9.51	15.84	19.86	23.75	31.36	37.85	50.11	60.55	66.83	74.01	86.92
30.0	10.58	17.28	21.48	25.31	33.03	39.45	51.44	60.95	66.99	74.04	86.97
32.5	11.63	18.69	23.08	26.78	34.70	41.11	52.79	61.59	67.15	74.07	87.03
35.0	12.73	20.19	24.68	28.34	36.39	43.08	54.53	62.96	67.30	74.10	87.08
37.5	13.83	21.55	26.26	29.82	37.99	45.11	56.04	64.57	68.00	74.13	87.13
40.0	15.00	22.80	27.92	31.39	39.56	47.02	57.59	66.29	69.25	74.70	87.19
42.5	16.11	24.06	29.59	32.94	41.06	48.98	59.06	68.08	71.19	75.93	87.50
45.0	17.35	25.49	31.36	34.66	42.63	50.99	60.41	69.80	73.12	77.75	88.51
47.5	18.69	27.16	33.35	36.54	44.39	52.95	61.68	71.35	74.59	79.27	89.29
50.0	19.96	29.50	35.51	38.69	46.33	54.92	63.28	72.86	76.09	80.67	90.26
52.5	21.17	32.47	38.12	41.19	48.30	56.89	65.02	74.34	77.54	81.89	90.95
55.0	22.58	35.42	40.73	43.73	50.45	58.87	66.99	75.88	79.34	83.41	91.73
57.5	24.00	38.02	43.03	46.13	52.70	60.97	69.29	77.37	81.19	84.90	92.56
60.0	25.38	40.31	44.96	48.39	54.82	63.00	71.56	78.77	83.16	86.52	93.75
62.5	26.71	41.96	46.67	50.46	56.91	65.04	73.66	80.21	85.01	88.16	94.89
65.0	28.01	42.88	47.60	52.03	58.84	67.01	75.51	81.69	86.65	89.69	96.01
67.5	29.31	43.91	48.58	53.62	60.73	68.89	77.14	83.08	88.00	90.98	96.84
70.0	30.67	45.19	49.89	55.27	62.43	70.67	78.52	84.44	89.17	92.18	97.46
72.5	32.21	46.80	51.66	57.19	64.01	72.47	79.87	85.83	90.13	93.05	97.80
75.0	34.46	48.80	53.84	59.33	65.61	74.25	81.12	87.23	90.96	93.71	98.00
77.5	37.29	51.45	56.70	61.86	67.73	76.14	82.50	88.55	91.79	94.30	98.07
80.0	40.54	54.36	59.93	64.74	70.09	78.08	83.92	89.80	92.54	94.80	98.15
82.5	44.75	58.00	63.74	68.13	72.99	80.30	85.56	91.08	93.40	95.34	98.24
85.0	49.83	62.26	67.97	71.79	76.42	82.67	87.31	92.32	94.33	95.99	98.42
87.5	55.61	67.15	72.62	75.92	80.29	85.32	89.27	93.59	95.32	96.70	98.64
90.0	62.44	72.58	77.60	80.43	84.29	88.20	91.39	94.96	96.35	97.44	98.92
92.5	70.64	79.03	82.85	85.19	88.48	91.30	93.69	96.39	97.41	98.21	99.22
95.0	79.72	86.09	88.16	90.03	92.53	94.44	96.05	97.80	98.40	98.91	99.52
97.5	89.52	93.52	93.59	95.02	96.63	97.71	98.55	99.26	99.39	99.59	99.83

Supplement 4. Untrimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First- through fourth-quartile storms combined; storm duration 0 to 72 hours											
2.5	1.12	2.11	2.63	3.37	4.76	6.36	7.80	10.30	12.19	14.64	21.62
5.0	2.36	4.40	5.54	6.89	9.80	13.57	16.94	21.32	24.50	28.12	37.56
7.5	3.58	6.65	8.39	10.36	14.73	20.47	25.49	31.42	35.63	40.21	51.53
10.0	4.77	8.88	11.23	13.80	19.53	26.82	33.08	40.20	45.13	50.49	63.03
12.5	5.83	10.95	13.87	16.98	23.97	32.39	39.54	47.41	52.68	58.63	71.72
15.0	6.78	12.83	16.23	19.82	27.91	37.18	45.03	53.27	58.46	64.62	77.48
17.5	7.62	14.45	18.21	22.19	30.95	40.97	49.36	57.88	62.88	68.90	81.06
20.0	8.43	15.98	20.07	24.31	33.47	44.07	52.94	61.82	66.70	72.39	83.55
22.5	9.14	17.34	21.65	26.13	35.47	46.49	55.70	65.09	69.87	75.15	85.26
25.0	9.93	18.69	23.22	27.91	37.17	48.51	57.87	67.89	72.74	77.57	86.59
27.5	10.78	20.05	24.73	29.61	38.69	50.23	59.62	70.14	75.26	79.80	87.89
30.0	11.64	21.46	26.28	31.27	40.28	51.76	61.06	71.88	77.17	81.71	89.17
32.5	12.46	22.73	27.61	32.78	41.76	53.08	62.24	73.04	78.30	83.13	90.35
35.0	13.33	24.02	29.02	34.27	43.35	54.53	63.71	74.08	79.19	84.30	91.44
37.5	14.14	25.21	30.24	35.53	44.83	55.80	65.17	74.98	79.73	85.07	92.35
40.0	14.94	26.43	31.54	36.82	46.35	57.10	66.62	75.91	80.24	85.69	93.12
42.5	15.78	27.49	32.75	38.05	47.83	58.32	68.00	76.88	80.85	86.24	93.77
45.0	16.74	28.73	34.20	39.39	49.42	59.56	69.36	77.98	81.71	86.80	94.27
47.5	17.87	30.12	35.73	40.84	51.02	60.69	70.35	78.93	82.53	87.26	94.65
50.0	19.27	31.96	37.58	42.56	52.81	62.10	71.57	79.95	83.48	87.85	94.94
52.5	20.90	34.07	39.66	44.48	54.70	63.56	72.84	81.07	84.49	88.51	95.20
55.0	22.65	36.56	42.08	46.77	56.79	65.35	74.29	82.26	85.58	89.23	95.43
57.5	24.45	39.02	44.50	49.17	59.01	67.42	75.88	83.53	86.72	90.05	95.73
60.0	26.29	41.34	46.86	51.61	61.28	69.65	77.65	84.89	88.01	91.01	96.11
62.5	28.05	43.37	49.13	54.08	63.55	71.89	79.27	86.21	89.25	91.96	96.52
65.0	29.68	45.08	51.04	56.23	65.74	74.06	80.84	87.36	90.39	92.83	96.95
67.5	31.48	46.74	52.80	58.10	67.83	76.07	82.28	88.44	91.38	93.61	97.37
70.0	33.28	48.52	54.52	59.82	69.69	77.82	83.65	89.39	92.21	94.28	97.71
72.5	35.29	50.63	56.44	61.56	71.56	79.49	84.98	90.30	92.89	94.85	97.96
75.0	37.72	53.11	58.65	63.47	73.36	81.02	86.29	91.19	93.48	95.36	98.16
77.5	40.62	56.16	61.45	65.95	75.40	82.64	87.62	92.10	94.08	95.85	98.33
80.0	43.83	59.55	64.59	68.82	77.52	84.23	88.99	92.99	94.71	96.32	98.48
82.5	47.86	63.50	68.30	72.25	80.02	86.04	90.41	93.92	95.40	96.80	98.65
85.0	52.38	67.89	72.37	76.01	82.65	87.90	91.83	94.84	96.10	97.27	98.83
87.5	57.81	72.73	76.76	80.01	85.56	89.92	93.27	95.76	96.84	97.74	99.04
90.0	64.30	77.84	81.31	84.09	88.51	91.95	94.72	96.69	97.56	98.22	99.25
92.5	72.00	83.25	86.07	88.29	91.62	94.03	96.18	97.66	98.27	98.72	99.47
95.0	80.56	88.71	90.74	92.37	94.65	96.01	97.62	98.61	98.95	99.21	99.69
97.5	89.98	94.26	95.49	96.50	97.74	98.00	99.07	99.60	99.64	99.72	99.90

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First-quartile storms; storm duration 0 to 6 hours											
2.5	1.36	2.38	2.70	3.06	4.30	5.98	8.25	10.50	10.96	11.14	15.59
5.0	4.51	7.64	8.57	9.73	11.71	13.90	16.76	20.46	21.98	24.35	30.94
7.5	7.81	12.91	14.91	16.38	19.03	21.71	25.26	30.23	32.71	36.56	44.71
10.0	11.50	18.31	21.08	22.94	26.36	29.80	34.02	40.05	43.18	47.61	56.21
12.5	15.61	23.69	27.05	29.27	33.46	37.68	42.54	49.24	52.90	57.10	65.38
15.0	20.14	29.15	32.89	35.50	40.35	45.42	50.80	57.55	61.26	65.01	72.64
17.5	24.67	34.21	38.37	41.37	46.72	52.52	58.20	64.42	67.96	71.13	77.86
20.0	29.35	39.07	43.51	46.74	52.65	59.00	64.66	70.18	73.32	76.17	82.11
22.5	33.59	43.56	48.24	51.64	57.80	64.30	69.98	74.62	77.31	79.84	85.50
25.0	37.78	48.07	52.79	56.29	62.38	68.63	74.24	78.04	80.13	82.46	87.99
27.5	41.40	51.81	56.60	60.25	66.22	72.04	77.42	80.74	82.45	84.58	89.90
30.0	44.66	55.26	59.98	63.67	69.59	75.08	80.16	83.19	84.57	86.45	91.39
32.5	47.69	58.52	63.13	66.86	72.40	77.58	82.39	85.10	86.39	88.03	92.52
35.0	50.75	61.46	65.96	69.65	74.94	79.90	84.42	86.91	88.11	89.56	93.51
37.5	53.27	63.70	68.19	71.85	76.99	82.05	86.16	88.49	89.70	91.05	94.39
40.0	55.88	66.04	70.41	73.91	78.85	83.87	87.64	89.80	91.05	92.24	95.17
42.5	58.46	68.19	72.45	75.86	80.40	85.16	88.65	90.66	91.92	93.14	95.83
45.0	61.01	69.97	74.27	77.56	81.86	86.33	89.59	91.49	92.65	93.86	96.38
47.5	63.16	71.67	75.95	79.09	83.03	87.25	90.21	92.07	93.17	94.40	96.88
50.0	65.58	73.44	77.73	80.71	84.32	88.10	90.89	92.70	93.69	94.88	97.33
52.5	67.81	74.99	79.22	82.00	85.44	88.92	91.50	93.20	94.16	95.35	97.67
55.0	69.75	76.50	80.68	83.20	86.57	89.76	92.15	93.74	94.69	95.77	97.98
57.5	71.29	78.04	82.11	84.38	87.59	90.52	92.70	94.19	95.15	96.16	98.28
60.0	72.82	79.56	83.52	85.60	88.72	91.35	93.31	94.66	95.61	96.50	98.52
62.5	73.84	80.87	84.72	86.65	89.70	92.05	93.78	95.03	95.97	96.79	98.69
65.0	74.71	82.24	86.08	87.90	90.73	92.80	94.31	95.46	96.34	97.07	98.86
67.5	75.68	83.59	87.31	89.08	91.66	93.47	94.77	95.85	96.65	97.33	99.03
70.0	76.66	84.82	88.36	90.09	92.56	94.10	95.24	96.26	96.97	97.56	99.14
72.5	77.64	86.00	89.30	90.95	93.27	94.64	95.65	96.64	97.25	97.79	99.23
75.0	78.94	87.25	90.41	91.98	94.02	95.24	96.13	97.03	97.56	98.04	99.36
77.5	80.32	88.44	91.37	92.85	94.65	95.74	96.55	97.42	97.86	98.26	99.48
80.0	81.81	89.53	92.33	93.68	95.26	96.25	96.99	97.80	98.14	98.49	99.59
82.5	83.62	90.74	93.34	94.50	95.83	96.75	97.40	98.16	98.42	98.72	99.70
85.0	85.66	91.95	94.42	95.34	96.44	97.27	97.85	98.52	98.71	98.96	99.81
87.5	87.80	93.18	95.34	96.00	96.98	97.73	98.25	98.83	98.97	99.18	99.88
90.0	90.00	94.48	96.33	96.69	97.51	98.18	98.64	99.10	99.20	99.38	99.93
92.5	92.43	95.88	97.37	97.47	98.10	98.64	99.01	99.35	99.43	99.57	99.97
95.0	94.89	97.29	97.82	98.34	98.74	99.09	99.37	99.58	99.63	99.73	99.99
97.5	97.46	98.76	99.00	99.25	99.39	99.54	99.71	99.81	99.85	99.89	100.00

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First-quartile storms; storm duration 6 to 12 hours											
2.5	1.87	4.12	4.93	6.11	8.31	9.06	10.08	13.11	16.22	17.97	24.12
5.0	5.77	9.61	11.22	12.69	15.91	18.27	22.24	26.66	30.77	33.99	42.23
7.5	9.48	15.01	17.44	19.16	23.25	27.01	33.28	38.75	43.57	47.95	57.92
10.0	13.15	20.56	23.71	25.64	30.61	35.44	42.96	49.06	54.34	59.58	70.65
12.5	16.95	25.90	29.58	31.67	37.34	42.86	50.67	57.09	62.62	68.27	79.63
15.0	20.74	31.01	35.10	37.34	43.45	49.45	57.01	63.28	68.71	74.19	85.32
17.5	24.54	35.69	39.92	42.31	48.65	54.77	61.77	67.77	73.00	77.89	88.66
20.0	28.55	39.98	44.13	46.74	53.33	59.53	65.88	71.68	76.66	80.71	90.87
22.5	32.55	43.80	47.77	50.70	57.23	63.30	69.16	74.76	79.35	82.50	91.90
25.0	36.56	47.27	51.26	54.49	60.96	66.81	72.13	77.54	81.56	84.04	92.72
27.5	40.57	50.44	54.41	57.90	64.46	69.99	74.81	80.04	83.47	85.39	93.43
30.0	44.10	53.41	57.39	61.05	67.64	72.95	77.32	82.20	84.99	86.56	93.96
32.5	47.38	56.13	60.43	64.08	70.50	75.48	79.49	83.93	86.11	87.58	94.42
35.0	50.34	58.41	63.43	66.82	73.03	77.78	81.35	85.49	87.23	88.55	94.90
37.5	52.58	60.67	66.20	69.30	75.12	79.63	83.06	86.87	88.33	89.41	95.29
40.0	54.10	62.59	68.54	71.43	76.61	80.89	84.32	88.00	89.27	90.27	95.76
42.5	55.20	64.27	70.69	73.29	77.85	81.84	85.31	88.95	90.17	91.15	96.22
45.0	55.67	65.71	72.35	74.77	78.80	82.52	86.05	89.73	90.95	91.96	96.56
47.5	55.78	67.27	73.66	76.00	79.72	83.14	86.76	90.41	91.59	92.84	96.96
50.0	55.85	68.50	74.71	77.00	80.47	83.65	87.27	90.92	92.10	93.67	97.36
52.5	55.93	69.64	75.85	78.07	81.39	84.27	87.87	91.38	92.73	94.50	97.66
55.0	56.04	70.62	76.72	79.00	82.08	84.85	88.41	91.83	93.28	95.20	97.99
57.5	56.42	71.75	77.59	79.88	82.79	85.53	89.02	92.29	93.92	95.90	98.34
60.0	57.07	72.76	78.26	80.66	83.36	86.15	89.62	92.76	94.56	96.48	98.67
62.5	57.67	73.87	78.80	81.26	83.95	86.82	90.24	93.22	95.18	96.98	98.91
65.0	58.00	75.03	79.27	81.69	84.43	87.56	90.87	93.72	95.72	97.35	99.15
67.5	58.25	76.21	79.75	82.09	85.09	88.30	91.53	94.22	96.25	97.70	99.36
70.0	58.50	77.28	80.34	82.66	85.74	88.97	92.11	94.66	96.67	97.94	99.48
72.5	58.75	78.32	81.04	83.25	86.61	89.72	92.70	95.10	97.05	98.13	99.57
75.0	59.00	79.33	81.67	83.97	87.56	90.52	93.32	95.55	97.39	98.29	99.66
77.5	59.25	80.46	82.43	84.80	88.60	91.31	93.94	96.01	97.67	98.46	99.71
80.0	59.50	81.63	83.39	85.84	89.67	92.15	94.55	96.47	97.91	98.59	99.74
82.5	60.88	83.05	84.45	86.95	90.88	93.09	95.22	96.94	98.14	98.72	99.76
85.0	63.92	84.77	85.89	88.39	92.11	94.05	95.91	97.41	98.38	98.89	99.80
87.5	68.70	86.79	87.90	90.07	93.36	95.03	96.59	97.89	98.62	99.04	99.82
90.0	74.65	89.01	90.12	91.94	94.66	96.05	97.28	98.35	98.87	99.20	99.85
92.5	81.25	91.53	92.52	93.88	96.01	97.10	97.96	98.81	99.12	99.36	99.88
95.0	88.04	94.18	94.96	95.87	97.37	98.16	98.64	99.27	99.40	99.55	99.92
97.5	94.58	96.89	97.38	97.86	98.72	99.20	99.31	99.71	99.66	99.74	99.95

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	First-quartile storms; storm duration 12 to 24 hours										
2.5	2.16	4.68	6.38	7.72	7.88	8.79	10.99	13.98	15.53	17.80	24.17
5.0	6.35	10.61	13.23	14.94	16.76	18.97	22.71	27.35	29.97	33.23	40.83
7.5	10.81	16.51	20.00	22.08	25.35	28.52	33.47	39.47	43.11	47.09	55.31
10.0	15.85	22.66	26.81	29.21	33.28	36.94	42.62	49.79	54.20	58.63	67.16
12.5	21.43	28.71	33.21	35.87	40.38	44.09	49.88	57.97	62.83	67.45	75.91
15.0	27.39	34.63	39.24	42.02	46.91	50.46	55.93	64.29	69.29	73.65	81.67
17.5	33.27	40.23	44.51	47.38	52.57	55.96	60.92	68.90	73.68	77.57	85.11
20.0	38.71	45.29	49.15	52.11	57.78	61.09	65.37	72.68	76.84	80.21	87.46
22.5	42.95	49.36	52.90	56.27	62.63	66.13	69.73	75.97	79.40	82.24	88.93
25.0	45.96	52.58	55.98	59.98	67.09	71.09	74.23	79.20	81.83	84.18	90.12
27.5	47.89	54.85	58.20	62.86	70.72	75.44	78.44	82.36	84.29	86.23	91.26
30.0	49.05	56.28	59.75	64.96	73.43	78.79	81.98	85.29	86.77	88.43	92.53
32.5	49.71	57.14	60.56	66.36	75.12	81.18	84.95	87.90	89.21	90.63	93.79
35.0	50.48	58.03	61.44	67.37	76.22	82.70	87.14	90.04	91.29	92.57	95.03
37.5	51.35	58.81	62.24	68.06	76.90	83.43	88.52	91.54	92.81	94.00	96.05
40.0	52.37	59.82	63.31	68.92	77.45	83.90	89.40	92.58	93.85	95.01	96.85
42.5	53.47	60.94	64.78	69.91	78.03	84.48	90.09	93.32	94.56	95.64	97.42
45.0	54.64	62.31	66.80	71.22	78.87	85.20	90.56	93.80	94.98	96.02	97.80
47.5	55.80	63.61	68.38	72.59	79.69	85.97	90.95	94.13	95.24	96.24	98.00
50.0	57.08	65.10	70.01	74.04	80.46	86.82	91.33	94.40	95.51	96.46	98.17
52.5	58.24	66.48	71.32	75.43	81.23	87.66	91.70	94.62	95.71	96.68	98.31
55.0	59.39	67.86	72.39	76.76	82.02	88.43	92.04	94.81	95.85	96.88	98.43
57.5	60.47	69.03	73.27	77.88	82.70	89.11	92.36	94.99	96.00	97.07	98.59
60.0	61.37	70.15	74.34	78.78	83.24	89.61	92.67	95.17	96.14	97.23	98.79
62.5	62.01	70.91	75.14	79.29	83.78	89.99	92.99	95.38	96.27	97.41	99.00
65.0	62.67	71.52	75.90	79.61	84.37	90.28	93.28	95.57	96.41	97.54	99.10
67.5	63.00	71.89	76.37	79.84	84.92	90.55	93.59	95.78	96.58	97.70	99.20
70.0	63.35	72.06	76.43	79.93	85.48	90.77	93.91	96.01	96.75	97.80	99.25
72.5	63.91	72.34	76.61	80.19	86.19	91.07	94.21	96.24	96.94	97.93	99.30
75.0	64.87	73.09	77.09	80.73	86.84	91.39	94.47	96.44	97.12	98.00	99.35
77.5	66.37	74.37	78.08	81.61	87.54	91.81	94.76	96.66	97.31	98.09	99.40
80.0	68.67	76.30	79.60	82.83	88.29	92.23	95.03	96.84	97.49	98.16	99.45
82.5	71.43	78.92	81.76	84.50	89.28	92.79	95.36	97.06	97.68	98.29	99.50
85.0	74.63	81.77	84.10	86.32	90.33	93.44	95.75	97.31	97.89	98.42	99.55
87.5	78.15	84.81	86.71	88.43	91.60	94.26	96.25	97.62	98.14	98.61	99.60
90.0	81.80	87.79	89.30	90.61	93.00	95.15	96.83	97.98	98.42	98.82	99.65
92.5	85.48	90.72	91.90	92.91	94.65	96.23	97.54	98.44	98.78	99.07	99.70
95.0	89.14	93.53	94.39	95.20	96.35	97.33	98.28	98.92	99.16	99.34	99.80
97.5	92.85	96.39	96.94	97.55	98.15	98.52	99.10	99.45	99.58	99.63	99.90

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	First-quartile storms; storm duration 24 to 72 hours										
2.5	2.94	4.38	5.18	6.33	8.55	10.98	14.98	19.44	21.29	24.36	31.06
5.0	6.58	10.93	12.66	14.39	17.72	21.51	26.81	32.97	35.68	39.60	48.79
7.5	10.19	16.95	19.44	21.83	26.21	31.09	37.30	44.77	48.18	52.79	64.05
10.0	13.69	22.12	25.13	28.22	33.53	39.40	46.37	54.68	58.57	63.54	76.37
12.5	17.09	26.61	29.80	33.44	39.46	46.14	53.61	62.42	66.42	71.58	85.14
15.0	20.31	30.40	33.86	37.94	44.46	51.40	59.31	67.90	71.77	76.76	90.55
17.5	23.41	33.37	37.12	41.35	48.27	55.29	63.78	72.03	75.67	80.30	93.83
20.0	26.40	35.99	39.76	44.05	51.18	58.26	67.31	75.28	78.81	83.06	95.80
22.5	29.26	38.61	42.35	46.42	53.41	60.21	69.39	77.55	81.02	85.18	96.76
25.0	32.16	41.18	44.71	48.70	55.41	61.57	70.44	78.88	82.52	86.71	97.33
27.5	35.11	43.89	46.74	50.67	56.95	62.48	70.80	79.20	83.47	87.92	97.56
30.0	37.98	46.72	48.80	52.74	58.27	63.17	71.00	79.31	83.78	88.64	97.60
32.5	41.37	49.92	51.87	55.38	59.90	64.10	72.00	79.48	83.86	89.08	97.63
35.0	44.99	53.45	55.26	58.39	62.23	65.74	72.50	79.50	84.23	89.47	97.66
37.5	48.52	57.00	58.84	61.40	64.67	68.03	73.00	80.75	85.28	90.15	97.69
40.0	51.90	60.42	62.38	64.37	67.26	70.84	75.00	82.85	87.03	91.29	97.90
42.5	54.94	63.22	65.40	66.87	69.70	73.84	77.26	85.41	89.14	92.77	98.26
45.0	56.77	65.19	67.24	68.60	71.79	76.66	80.58	87.90	91.25	94.17	98.64
47.5	57.50	65.30	67.50	69.65	73.07	78.87	83.27	89.92	92.87	95.33	98.97
50.0	57.70	65.50	67.80	70.13	73.85	80.25	85.11	91.13	93.85	96.10	99.26
52.5	57.90	65.70	68.10	70.23	74.25	81.03	86.02	91.67	94.21	96.40	99.44
55.0	58.15	65.90	68.40	70.35	74.68	81.47	86.64	92.00	94.38	96.44	99.56
57.5	58.30	66.10	68.60	70.54	75.10	81.72	86.87	92.06	94.40	96.46	99.64
60.0	58.50	66.40	68.80	70.80	75.68	81.99	87.06	92.18	94.53	96.48	99.73
62.5	58.70	66.70	69.00	71.45	76.48	82.53	87.43	92.38	94.75	96.57	99.78
65.0	58.90	67.00	69.25	72.33	77.51	83.26	88.08	92.70	95.10	96.76	99.79
67.5	59.00	67.37	69.53	73.32	78.58	84.15	88.73	93.02	95.39	96.95	99.80
70.0	59.22	68.56	70.77	74.36	79.75	85.11	89.49	93.45	95.75	97.17	99.81
72.5	60.34	69.88	72.18	75.42	80.89	86.07	90.31	93.84	96.06	97.40	99.82
75.0	61.79	71.07	73.52	76.34	81.95	86.96	91.10	94.28	96.37	97.60	99.83
77.5	63.68	72.52	75.00	77.31	82.92	87.75	91.81	94.71	96.63	97.79	99.84
80.0	65.74	74.01	76.41	78.27	83.86	88.48	92.45	95.14	96.93	97.99	99.85
82.5	68.04	75.47	77.71	79.32	84.80	89.34	93.14	95.60	97.22	98.18	99.96
85.0	70.80	77.20	79.29	80.73	85.79	90.18	93.87	96.11	97.53	98.38	99.87
87.5	73.83	79.47	81.30	82.61	87.00	91.03	94.67	96.65	97.86	98.59	99.88
90.0	77.35	82.19	83.80	85.03	88.72	92.23	95.54	97.25	98.23	98.83	99.89
92.5	81.65	85.64	87.08	88.21	91.11	93.95	96.58	97.93	98.64	99.09	99.90
95.0	86.62	89.79	91.07	92.09	94.11	96.03	97.81	98.66	99.10	99.38	99.94
97.5	92.06	94.41	95.46	96.34	97.65	98.58	99.11	99.45	99.60	99.69	99.98

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	First-quartile storms; storm duration 0 to 72 hours										
2.5	1.93	4.66	5.90	7.04	8.56	8.70	11.05	14.56	16.67	19.28	26.06
5.0	6.12	10.29	12.27	13.95	16.55	18.81	22.71	27.75	30.96	34.53	42.85
7.5	10.29	15.85	18.54	20.74	24.33	28.27	33.39	39.61	43.68	47.95	57.39
10.0	14.60	21.60	24.85	27.53	31.87	36.71	42.70	49.76	54.37	59.14	69.27
12.5	18.93	27.22	30.87	33.86	38.81	43.93	50.29	57.88	62.71	67.66	78.01
15.0	23.41	32.68	36.52	39.71	45.11	50.35	56.58	64.19	68.88	73.60	83.56
17.5	27.83	37.75	41.54	44.80	50.42	55.74	61.73	68.89	73.19	77.46	86.94
20.0	32.04	42.38	46.00	49.23	55.07	60.57	66.29	72.87	76.62	80.40	89.19
22.5	35.78	46.19	49.63	52.82	59.02	64.85	70.25	76.14	79.36	82.59	90.49
25.0	39.17	49.39	52.60	55.85	62.30	68.65	73.90	79.05	81.77	84.57	91.40
27.5	41.95	51.90	55.00	58.26	64.90	71.70	77.12	81.70	84.00	86.50	92.31
30.0	44.31	53.92	57.00	60.22	67.07	74.09	79.71	84.03	86.05	88.34	93.25
32.5	46.54	55.75	58.81	61.90	68.77	75.85	81.70	85.99	87.89	90.02	94.14
35.0	48.69	57.82	60.83	63.76	70.31	77.23	83.36	87.66	89.50	91.54	95.12
37.5	50.63	59.87	62.91	65.70	71.98	78.42	84.67	88.98	90.81	92.68	95.96
40.0	52.50	62.03	65.02	67.71	73.80	79.62	85.79	90.04	91.89	93.60	96.65
42.5	54.19	64.09	66.97	69.76	75.59	80.86	86.82	90.96	92.75	94.35	97.20
45.0	55.64	65.91	68.75	71.75	77.37	82.20	87.84	91.73	93.42	94.93	97.64
47.5	56.81	67.23	70.06	73.32	78.92	83.43	88.70	92.36	93.96	95.36	97.93
50.0	57.89	68.34	71.13	74.64	80.15	84.59	89.50	92.93	94.40	95.75	98.18
52.5	58.78	69.07	71.97	75.73	81.11	85.59	90.18	93.40	94.76	96.07	98.40
55.0	59.59	69.69	72.74	76.56	81.83	86.42	90.76	93.75	95.08	96.32	98.59
57.5	60.30	70.23	73.45	77.28	82.50	87.12	91.29	94.07	95.37	96.56	98.77
60.0	60.92	70.78	74.19	77.95	83.09	87.75	91.77	94.38	95.64	96.77	98.94
62.5	61.43	71.36	74.90	78.54	83.69	88.28	92.16	94.67	95.90	96.98	99.08
65.0	61.97	72.08	75.71	79.18	84.35	88.85	92.61	94.98	96.15	97.18	99.20
67.5	62.39	72.78	76.53	79.82	85.11	89.46	93.02	95.30	96.39	97.38	99.31
70.0	62.92	73.54	77.32	80.44	85.85	90.10	93.41	95.63	96.65	97.57	99.38
72.5	63.62	74.42	78.19	81.18	86.67	90.81	93.80	95.98	96.90	97.76	99.43
75.0	64.64	75.28	79.08	81.94	87.47	91.53	94.21	96.31	97.14	97.93	99.47
77.5	66.09	76.32	80.07	82.81	88.25	92.22	94.61	96.64	97.38	98.09	99.49
80.0	68.05	77.52	81.18	83.82	88.97	92.87	95.03	96.95	97.62	98.25	99.51
82.5	70.36	78.91	82.47	85.02	89.81	93.54	95.49	97.27	97.84	98.42	99.52
85.0	73.14	80.59	83.99	86.39	90.65	94.25	95.99	97.60	98.09	98.59	99.55
87.5	76.44	82.82	86.00	88.21	91.72	95.01	96.55	97.94	98.36	98.79	99.59
90.0	80.08	85.43	88.28	90.21	93.00	95.84	97.16	98.30	98.64	99.00	99.64
92.5	84.23	88.62	90.93	92.55	94.60	96.82	97.84	98.70	98.96	99.23	99.71
95.0	88.89	92.30	93.91	95.13	96.38	97.90	98.56	99.13	99.28	99.46	99.81
97.5	93.81	96.28	97.12	97.91	98.43	99.02	99.31	99.58	99.61	99.71	99.90

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Second-quartile storms; storm duration 0 to 6 hours											
2.5	0.10	0.20	0.30	0.50	0.70	0.90	1.10	1.44	2.18	2.87	5.51
5.0	.72	1.14	1.42	2.00	2.29	2.73	3.52	4.74	5.53	6.43	10.39
7.5	1.30	2.05	2.63	3.53	4.37	5.06	6.23	8.02	8.85	9.96	15.32
10.0	2.03	3.26	3.97	5.17	6.51	7.49	9.12	11.30	12.20	13.51	20.32
12.5	2.77	4.48	5.23	6.83	8.64	9.94	12.07	14.48	15.45	16.88	25.32
15.0	3.55	5.86	6.62	8.69	10.98	12.69	15.27	18.00	19.11	20.52	30.39
17.5	4.18	7.12	8.10	10.80	13.66	15.81	18.82	21.84	23.12	24.71	35.59
20.0	4.77	8.54	9.96	13.42	16.70	19.37	22.84	26.13	27.74	29.54	40.88
22.5	5.65	10.28	12.25	16.34	20.00	23.19	27.14	30.94	33.08	35.18	46.14
25.0	6.64	12.50	15.21	19.83	23.73	27.49	31.90	36.25	39.25	41.75	51.75
27.5	8.04	15.39	18.85	23.55	27.69	31.88	36.84	41.62	45.40	48.33	57.41
30.0	9.67	18.91	23.05	27.71	32.10	36.72	42.10	47.17	51.58	54.61	62.82
32.5	11.77	22.93	27.62	32.01	36.57	41.49	47.23	52.62	57.36	60.43	67.99
35.0	14.45	27.19	32.30	36.53	41.33	46.42	52.50	57.70	62.39	65.31	72.83
37.5	17.80	31.67	37.01	40.97	46.10	51.32	57.64	62.64	66.70	69.41	77.03
40.0	21.30	35.81	41.24	45.20	50.59	55.98	62.44	67.46	70.75	73.21	80.57
42.5	25.27	40.08	45.39	49.07	54.68	60.09	66.73	71.90	74.50	76.74	83.71
45.0	29.31	44.21	49.37	52.89	58.76	64.20	70.84	76.00	77.99	79.89	86.23
47.5	32.96	48.00	53.00	56.29	62.27	67.84	74.34	79.56	81.15	82.83	88.37
50.0	36.44	51.57	56.21	59.32	65.35	70.95	77.30	82.52	83.88	85.36	89.98
52.5	40.23	55.37	59.63	62.36	68.28	73.81	79.90	84.78	86.03	87.41	91.37
55.0	44.28	58.99	62.84	65.36	70.99	76.52	82.29	86.44	87.57	88.99	92.48
57.5	48.21	62.35	65.78	68.08	73.42	78.83	84.25	87.70	88.75	90.24	93.46
60.0	52.18	65.61	68.73	70.80	75.90	80.96	85.93	88.86	89.78	91.31	94.36
62.5	56.78	68.84	71.80	73.63	78.45	83.08	87.58	89.92	90.76	92.31	95.21
65.0	61.57	71.92	74.75	76.46	81.17	85.27	89.14	91.03	91.79	93.30	95.94
67.5	66.08	74.81	77.60	79.20	83.98	87.37	90.49	92.23	92.91	94.35	96.63
70.0	70.72	77.80	80.47	81.97	86.60	89.37	91.83	93.35	93.96	95.37	97.29
72.5	75.31	80.77	83.21	84.58	88.80	91.23	93.12	94.42	94.96	96.28	97.82
75.0	79.32	83.65	85.80	87.04	90.79	92.87	94.25	95.37	95.85	97.12	98.34
77.5	82.59	86.30	88.06	89.20	92.39	94.27	95.26	96.21	96.62	97.79	98.79
80.0	85.56	88.79	90.18	91.12	93.55	95.33	96.13	96.91	97.28	98.24	99.16
82.5	88.21	90.94	91.96	92.73	94.57	96.22	96.91	97.52	97.83	98.60	99.41
85.0	90.54	92.81	93.58	94.21	95.63	96.99	97.57	98.02	98.28	98.88	99.61
87.5	92.38	94.33	94.92	95.43	96.54	97.63	98.13	98.47	98.67	99.08	99.71
90.0	94.07	95.68	96.21	96.58	97.41	98.22	98.62	98.87	99.02	99.27	99.81
92.5	95.63	96.87	97.33	97.65	98.29	98.77	99.06	99.21	99.31	99.49	99.87
95.0	97.26	98.08	98.49	98.77	99.23	99.30	99.44	99.52	99.59	99.69	99.93
97.5	98.85	99.25	99.34	99.44	99.54	99.63	99.72	99.82	99.86	99.89	99.99

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Second-quartile storms; storm duration 6 to 12 hours											
2.5	0.05	0.19	0.52	0.69	1.18	1.48	1.64	2.98	4.45	5.90	9.78
5.0	.76	1.69	2.18	2.78	3.71	4.51	5.30	8.25	9.93	11.97	18.44
7.5	1.55	3.14	3.82	4.79	6.28	7.44	8.84	13.56	15.35	17.98	26.19
10.0	2.32	4.68	5.56	6.79	8.98	10.46	12.45	18.83	20.66	23.64	32.74
12.5	3.10	6.20	7.38	8.75	11.69	13.55	15.97	23.65	25.56	28.56	38.44
15.0	3.98	7.84	9.22	10.65	14.38	16.60	19.44	27.82	29.64	32.52	43.59
17.5	4.95	9.50	11.09	12.66	16.98	19.57	22.78	31.00	32.89	36.09	48.91
20.0	6.00	11.23	13.03	14.87	19.50	22.57	26.09	33.61	36.07	39.70	54.78
22.5	7.20	12.76	14.85	17.01	21.98	25.45	29.21	35.98	39.43	43.96	61.22
25.0	8.46	14.34	16.75	19.28	24.57	28.35	32.28	38.96	43.31	49.08	67.78
27.5	9.87	15.65	18.52	21.47	27.24	31.21	35.23	42.19	47.58	55.18	73.97
30.0	11.82	17.32	20.45	23.61	29.82	34.02	38.08	45.92	52.20	60.70	78.69
32.5	14.11	19.58	23.02	26.25	32.93	37.21	41.35	49.95	56.29	65.20	82.12
35.0	16.91	22.59	26.27	29.50	36.30	40.70	44.85	54.05	59.94	68.85	84.36
37.5	20.13	26.13	29.87	33.30	40.30	44.52	48.71	57.76	63.09	71.44	85.58
40.0	23.61	30.45	34.17	38.18	44.89	48.93	53.12	61.65	66.36	73.17	86.18
42.5	26.38	34.82	38.72	43.38	49.71	53.50	57.67	65.33	69.39	74.90	86.74
45.0	29.35	38.97	43.02	48.08	54.16	57.84	61.75	68.92	72.61	76.84	87.46
47.5	31.96	42.78	47.05	52.37	58.43	61.98	65.64	72.22	75.48	78.75	88.31
50.0	35.02	46.51	50.90	56.07	61.87	65.55	68.94	75.24	78.13	80.82	89.21
52.5	38.63	50.10	54.60	58.89	64.83	68.56	71.78	77.94	80.42	82.81	90.28
55.0	43.55	53.89	58.25	61.72	67.71	71.63	74.77	80.73	82.74	84.85	91.47
57.5	48.65	57.98	61.88	64.70	70.53	74.69	77.79	83.23	84.85	86.88	92.66
60.0	54.15	62.35	65.58	67.81	73.35	77.64	80.76	85.69	87.12	88.83	93.84
62.5	59.22	66.76	69.42	71.27	76.32	80.90	83.94	88.14	89.34	90.61	94.93
65.0	63.39	70.90	72.93	74.69	78.97	83.86	86.76	90.35	91.38	92.41	96.08
67.5	66.30	74.38	76.10	77.68	81.53	86.39	89.00	92.11	93.07	94.04	97.16
70.0	68.60	77.05	78.73	80.21	83.86	88.47	90.83	93.62	94.51	95.45	97.99
72.5	70.65	79.18	80.89	82.33	85.94	90.26	92.30	94.82	95.65	96.53	98.62
75.0	72.42	80.79	82.56	83.98	87.71	91.59	93.37	95.72	96.54	97.41	99.09
77.5	74.50	82.29	84.16	85.53	89.42	92.84	94.37	96.41	97.26	98.08	99.34
80.0	76.94	83.96	85.71	87.04	90.91	93.92	95.32	97.02	97.84	98.58	99.52
82.5	79.67	85.93	87.48	88.71	92.26	94.98	96.24	97.60	98.35	98.97	99.68
85.0	82.51	87.94	89.28	90.44	93.47	95.92	97.08	98.13	98.75	99.28	99.81
87.5	85.54	90.09	91.17	92.22	94.74	96.77	97.79	98.59	99.12	99.53	99.91
90.0	88.58	92.27	93.11	94.01	95.98	97.57	98.38	99.01	99.40	99.70	99.97
92.5	91.73	94.48	95.14	95.83	97.19	98.36	98.92	99.36	99.64	99.83	100.00
95.0	94.87	96.71	97.18	97.67	98.46	99.16	99.41	99.64	99.82	99.92	100.00
97.5	97.86	98.96	99.29	99.51	99.78	99.84	99.90	99.95	99.99	100.00	100.00

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Second-quartile storms; storm duration 12 to 24 hours											
2.5	0.88	1.14	1.28	1.36	1.44	1.53	3.15	5.01	6.28	7.20	8.39
5.0	1.71	2.72	3.11	3.51	3.80	4.99	7.51	10.70	12.60	14.26	18.24
7.5	2.50	4.26	4.93	5.64	6.29	8.42	11.78	16.39	18.83	21.14	27.16
10.0	3.32	5.85	6.82	7.84	9.37	11.88	16.04	21.96	24.89	27.55	34.74
12.5	4.05	7.36	8.62	10.02	12.40	15.31	20.22	27.30	30.46	33.18	40.94
15.0	4.70	8.85	10.47	12.22	15.37	18.68	24.16	31.95	35.03	38.47	46.36
17.5	5.25	10.33	12.29	14.42	18.23	22.00	27.86	35.76	38.68	42.88	51.14
20.0	5.82	11.87	14.17	16.68	21.09	25.35	31.56	38.98	41.66	46.58	55.93
22.5	6.34	13.40	16.05	18.91	23.85	28.63	34.92	41.82	44.19	49.86	60.03
25.0	7.01	15.05	18.08	21.21	26.52	31.82	38.02	44.49	46.65	52.94	63.61
27.5	7.90	16.80	20.09	23.53	29.26	35.04	41.20	47.51	49.96	55.49	66.81
30.0	9.16	18.70	22.22	25.91	32.10	38.43	44.58	50.85	53.66	58.37	69.74
32.5	10.92	20.81	24.45	28.34	34.96	41.81	47.84	54.52	57.80	61.74	72.20
35.0	13.37	23.19	26.86	30.96	38.12	45.36	51.29	58.47	62.43	65.66	75.58
37.5	16.56	25.93	29.67	33.89	41.58	49.13	55.04	62.51	67.02	69.82	79.41
40.0	20.51	29.39	33.11	37.39	45.25	52.99	58.88	66.47	70.83	73.80	83.14
42.5	25.13	33.72	37.45	41.65	49.53	56.87	62.49	70.38	74.33	77.34	86.57
45.0	30.05	38.55	42.26	46.45	54.23	60.97	66.19	73.98	77.34	80.32	89.70
47.5	34.85	43.59	47.15	51.26	58.84	64.86	69.87	77.22	79.81	82.73	91.80
50.0	39.56	48.82	52.11	56.13	63.46	68.71	73.36	80.21	82.20	84.82	93.31
52.5	43.71	53.41	56.70	60.51	67.66	72.28	76.46	82.91	84.71	87.03	94.51
55.0	47.28	57.29	60.66	64.23	71.05	75.46	79.46	85.30	87.13	89.20	95.43
57.5	50.34	60.47	64.13	67.29	73.82	78.13	82.02	87.37	89.31	91.08	96.21
60.0	53.19	63.27	67.47	70.17	76.30	80.62	84.30	89.26	91.29	92.75	97.02
62.5	55.23	65.60	70.12	72.44	78.07	82.38	86.02	90.64	92.76	94.06	97.60
65.0	57.33	67.93	72.57	74.64	79.72	83.90	87.52	91.71	93.84	95.05	98.05
67.5	59.18	69.98	74.61	76.48	81.13	85.04	88.63	92.43	94.48	95.60	98.41
70.0	61.12	72.19	76.55	78.29	82.50	86.06	89.59	93.07	95.07	96.20	98.62
72.5	63.07	74.40	78.20	79.92	83.71	86.88	90.27	93.52	95.47	96.66	98.70
75.0	65.81	76.63	80.09	81.76	85.33	88.13	91.17	94.17	95.94	97.17	98.86
77.5	68.82	78.86	81.92	83.51	87.03	89.47	92.12	94.84	96.39	97.61	98.97
80.0	72.23	81.21	83.91	85.46	88.94	91.15	93.29	95.64	96.94	98.13	99.13
82.5	75.74	83.50	85.96	87.44	90.83	92.85	94.49	96.43	97.42	98.49	99.28
85.0	78.99	85.82	88.13	89.48	92.74	94.53	95.74	97.24	97.95	98.80	99.44
87.5	81.99	88.14	90.33	91.51	94.46	95.95	96.86	97.95	98.43	99.06	99.57
90.0	84.68	90.45	92.53	93.53	96.00	97.18	97.82	98.55	98.88	99.30	99.71
92.5	87.48	92.76	94.70	95.50	97.30	98.13	98.57	99.04	99.25	99.50	99.81
95.0	90.46	95.09	96.87	97.46	98.44	98.93	99.19	99.45	99.58	99.71	99.90
97.5	93.86	97.43	99.05	99.26	99.48	99.63	99.72	99.80	99.85	99.92	99.97

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Second-quartile storms; storm duration 24 to 72 hours											
2.5	0.58	1.00	1.63	2.06	3.56	5.17	8.55	10.80	13.21	16.13	23.03
5.0	1.00	2.25	3.46	4.36	7.15	12.94	21.47	25.29	28.20	31.59	39.15
7.5	1.39	3.32	4.91	6.21	10.02	19.01	31.96	38.31	41.91	45.45	53.21
10.0	1.77	4.20	6.00	7.52	11.92	23.19	39.23	48.90	53.16	57.18	64.63
12.5	2.10	4.81	6.61	8.18	12.72	24.49	41.80	55.21	60.36	65.60	73.11
15.0	2.44	5.37	6.97	8.61	13.36	24.70	42.80	57.80	64.26	70.64	78.39
17.5	2.77	5.87	7.21	8.82	13.98	24.90	43.20	58.20	65.16	72.68	81.27
20.0	3.21	6.57	7.80	9.48	15.37	25.20	43.50	58.30	65.40	72.70	82.81
22.5	3.71	7.29	8.47	10.27	16.93	25.70	43.70	58.40	65.60	72.75	82.90
25.0	4.36	8.21	9.43	11.44	19.24	27.20	44.00	58.50	65.80	72.80	82.95
27.5	5.17	9.25	10.66	12.81	21.36	29.32	44.40	58.60	66.00	72.85	83.00
30.0	6.31	10.57	12.16	14.56	23.69	32.28	44.70	58.70	66.20	72.90	83.20
32.5	7.82	12.24	13.85	16.29	25.34	35.01	45.40	58.80	66.40	72.95	83.40
35.0	9.92	14.74	16.46	18.96	27.88	38.03	46.50	59.00	66.60	73.00	83.60
37.5	12.86	18.31	20.16	22.71	30.94	41.06	48.26	59.20	66.80	73.02	83.80
40.0	16.79	22.99	25.04	27.70	35.03	44.37	51.47	60.30	67.00	73.04	84.00
42.5	21.57	28.78	31.06	33.68	39.72	47.93	54.74	62.35	68.20	73.06	84.10
45.0	27.00	35.19	37.80	40.47	45.42	51.93	58.41	65.53	70.01	74.00	84.20
47.5	33.09	41.67	44.44	47.06	51.11	56.22	62.21	69.08	73.00	75.57	85.00
50.0	39.16	47.69	50.67	53.15	56.70	60.84	66.52	72.96	76.23	78.17	86.19
52.5	44.85	53.16	56.18	58.47	62.07	65.63	70.89	76.76	79.41	80.88	88.04
55.0	50.14	57.75	60.82	63.07	67.19	70.62	75.50	80.64	82.80	84.09	90.00
57.5	54.87	61.90	65.01	67.27	72.13	75.55	79.99	84.46	86.22	87.29	92.11
60.0	58.42	65.70	69.04	71.42	76.84	80.21	84.32	88.10	89.56	90.43	94.22
62.5	60.61	68.94	72.38	74.82	80.76	84.16	87.96	91.31	92.49	93.21	95.93
65.0	61.79	71.39	75.02	77.87	83.90	87.36	90.85	93.80	94.79	95.38	97.17
67.5	62.00	72.93	77.03	80.20	86.20	89.68	92.89	95.53	96.32	96.78	97.97
70.0	62.50	73.23	77.92	81.44	87.25	91.00	94.06	96.58	97.20	97.66	98.42
72.5	63.00	73.70	78.00	81.49	87.30	91.48	94.51	96.98	97.53	98.02	98.59
75.0	63.50	74.00	78.25	81.70	87.50	91.61	94.61	97.02	97.61	98.11	98.71
77.5	64.00	74.50	78.50	81.90	87.70	91.80	94.80	97.03	97.65	98.17	98.82
80.0	64.50	75.00	78.75	82.10	87.90	92.00	95.00	97.05	97.69	98.22	98.92
82.5	65.80	75.50	79.00	82.30	88.10	92.20	95.20	97.08	97.79	98.32	99.03
85.0	67.77	76.00	79.40	82.50	88.30	92.40	95.40	97.26	97.97	98.48	99.15
87.5	70.42	76.89	80.00	83.20	88.50	92.60	95.60	97.54	98.21	98.68	99.28
90.0	73.67	80.13	82.50	85.09	89.20	92.93	95.94	97.89	98.49	98.91	99.41
92.5	78.19	84.25	86.26	88.39	91.19	94.34	96.73	98.32	98.81	99.19	99.55
95.0	84.02	88.96	90.59	92.21	93.96	96.16	97.56	98.75	99.13	99.51	99.69
97.5	90.76	94.20	95.32	96.27	96.89	98.17	98.43	99.19	99.45	99.84	99.90

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Second-quartile storms; storm duration 0 to 72 hours											
2.5	0.12	0.68	0.87	1.05	1.99	2.81	5.01	5.58	7.40	9.28	15.86
5.0	.89	2.10	2.56	3.01	4.41	5.89	8.79	13.14	16.42	20.38	30.59
7.5	1.63	3.45	4.19	4.91	6.78	8.89	12.58	20.02	24.47	29.98	43.53
10.0	2.25	4.70	5.75	6.77	9.08	11.82	16.06	25.73	30.65	37.27	53.80
12.5	2.81	5.79	7.17	8.47	11.27	14.60	19.17	30.06	34.82	42.61	61.15
15.0	3.37	6.82	8.60	10.24	13.50	17.32	22.12	33.15	37.65	46.16	65.51
17.5	3.80	7.69	9.89	11.84	15.67	19.93	24.78	35.19	39.43	48.41	67.30
20.0	4.27	8.63	11.28	13.60	18.06	22.61	27.37	37.07	40.94	49.96	68.04
22.5	4.86	9.56	12.66	15.40	20.64	25.34	30.25	39.17	42.90	51.95	68.63
25.0	5.65	10.71	14.24	17.49	23.51	28.36	33.54	41.96	45.60	54.13	69.42
27.5	6.63	12.02	15.81	19.48	26.40	31.47	36.93	45.22	48.83	56.48	70.71
30.0	8.01	13.70	17.75	21.86	29.47	34.77	40.57	48.86	52.30	59.20	72.44
32.5	9.86	15.67	19.81	24.25	32.39	38.14	44.24	52.49	55.91	62.25	74.41
35.0	12.27	18.34	22.42	26.98	35.39	41.69	48.04	56.45	59.76	65.42	76.69
37.5	15.34	21.81	25.84	30.26	38.73	45.34	51.83	60.27	63.54	68.64	79.03
40.0	19.26	26.21	30.21	34.42	42.53	49.29	55.72	64.11	67.21	71.72	81.40
42.5	23.91	31.46	35.27	39.12	46.60	53.27	59.54	67.83	70.79	74.61	83.69
45.0	28.91	37.28	40.99	44.39	51.10	57.39	63.44	71.47	74.19	77.51	85.88
47.5	34.16	43.06	46.63	49.71	55.72	61.42	67.21	74.50	77.07	80.14	87.66
50.0	39.48	48.58	51.91	54.75	60.16	65.46	70.99	77.36	79.72	82.54	89.26
52.5	44.37	53.49	56.54	59.21	64.23	69.27	74.58	80.05	82.31	84.86	90.80
55.0	48.94	57.70	60.59	63.18	68.11	73.09	78.01	82.74	84.90	87.17	92.35
57.5	53.18	61.53	64.25	66.84	71.79	76.77	81.16	85.26	87.36	89.35	93.84
60.0	56.77	65.16	67.78	70.32	75.31	80.35	84.19	87.83	89.83	91.51	95.30
62.5	59.46	68.22	70.81	73.34	78.32	83.34	86.69	90.07	92.04	93.41	96.51
65.0	61.64	70.99	73.63	76.14	81.08	85.85	88.80	91.93	93.77	94.94	97.43
67.5	63.07	73.39	76.11	78.55	83.35	87.80	90.53	93.33	94.99	96.00	98.04
70.0	63.99	75.23	78.08	80.45	85.08	89.24	91.86	94.42	95.91	96.79	98.41
72.5	64.97	76.58	79.63	81.90	86.31	90.23	92.74	95.16	96.44	97.23	98.61
75.0	66.23	77.91	81.13	83.34	87.53	91.15	93.56	95.79	96.83	97.57	98.77
77.5	67.72	79.17	82.48	84.63	88.60	92.03	94.29	96.32	97.17	97.84	98.91
80.0	69.70	80.44	83.76	85.91	89.70	92.90	94.96	96.82	97.51	98.14	99.06
82.5	72.19	81.92	85.14	87.28	90.89	93.81	95.68	97.28	97.83	98.40	99.22
85.0	74.73	83.66	86.61	88.74	92.20	94.75	96.45	97.74	98.18	98.67	99.39
87.5	77.60	85.69	88.28	90.31	93.52	95.69	97.17	98.16	98.50	98.92	99.56
90.0	80.89	87.89	90.08	91.99	94.89	96.66	97.87	98.59	98.84	99.17	99.70
92.5	84.74	90.57	92.29	93.89	96.27	97.64	98.53	99.01	99.20	99.42	99.82
95.0	89.04	93.60	94.80	95.95	97.69	98.63	99.14	99.42	99.59	99.69	99.92
97.5	93.87	96.80	97.48	98.15	99.11	99.65	99.71	99.85	99.92	99.98	100.00

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Third-quartile storms; storm duration 0 to 6 hours										
2.5	0.36	0.55	0.61	0.90	1.36	1.83	2.67	4.23	4.50	5.31	8.71
5.0	.65	1.34	1.65	1.82	3.51	4.78	6.28	8.21	9.10	9.98	16.51
7.5	.97	2.08	2.61	3.25	5.64	7.58	9.65	11.87	13.20	14.25	23.06
10.0	1.26	2.89	3.62	4.61	7.83	10.17	12.87	15.32	17.17	18.29	27.59
12.5	1.56	3.80	4.74	6.06	10.08	12.58	15.68	18.37	20.52	21.74	31.07
15.0	1.90	4.73	5.88	7.51	11.99	14.73	18.11	21.08	23.48	24.81	32.91
17.5	2.00	5.68	7.02	8.89	13.64	16.49	19.97	23.43	25.64	27.37	34.75
20.0	2.50	6.65	8.18	10.16	14.78	17.78	21.45	25.52	27.65	29.68	36.57
22.5	3.00	7.78	9.49	11.63	15.92	19.02	22.63	27.17	29.11	31.50	38.55
25.0	3.50	8.87	10.82	13.07	16.96	20.16	23.83	28.62	30.55	33.32	40.87
27.5	4.00	9.92	12.12	14.47	17.92	21.21	24.89	29.85	31.75	34.95	43.93
30.0	4.50	11.15	13.51	15.90	18.80	22.38	26.00	30.90	33.43	37.21	47.51
32.5	5.00	12.58	14.97	17.49	20.29	24.10	27.40	31.93	35.44	39.88	50.89
35.0	6.50	13.90	16.33	18.77	21.67	25.85	28.78	33.03	37.60	42.83	54.47
37.5	8.00	15.37	17.72	20.08	23.04	27.71	30.50	34.60	40.06	45.77	58.05
40.0	9.50	17.22	19.18	21.49	24.94	30.11	32.35	36.11	42.86	49.40	61.80
42.5	11.00	19.29	21.00	22.96	27.45	32.99	34.47	38.31	45.82	52.98	65.26
45.0	12.50	21.58	23.09	24.76	29.97	35.87	37.19	41.38	49.10	56.78	68.77
47.5	14.00	24.36	25.65	27.31	32.91	39.14	40.66	45.36	52.84	60.92	72.16
50.0	15.50	27.48	28.21	30.09	36.41	42.69	44.50	50.02	57.08	65.32	75.53
52.5	18.47	30.74	31.37	33.33	40.23	46.20	49.04	55.53	62.14	69.14	78.24
55.0	20.69	34.07	34.85	37.33	44.08	49.71	53.84	60.77	66.87	72.66	80.94
57.5	21.50	37.50	38.57	41.47	48.19	53.43	58.49	65.76	71.43	75.76	83.29
60.0	22.00	40.77	42.40	45.70	52.47	57.12	62.97	70.20	75.55	78.46	85.38
62.5	23.50	44.13	46.76	50.17	56.69	60.77	67.13	73.85	78.87	80.63	86.75
65.0	26.00	47.54	50.97	54.65	60.83	64.45	70.94	76.99	80.99	82.52	88.25
67.5	28.40	51.10	55.09	58.95	64.88	67.97	74.44	79.65	82.90	84.15	89.38
70.0	31.50	54.80	59.23	63.20	68.81	71.49	77.64	81.93	84.34	85.53	90.35
72.5	38.29	59.50	63.93	67.59	72.72	75.06	80.62	84.15	85.94	86.91	91.41
75.0	47.71	64.39	68.74	71.94	76.41	78.56	83.35	86.18	87.62	88.48	92.65
77.5	56.81	69.58	73.48	76.12	79.72	81.83	85.89	88.06	89.42	90.22	93.89
80.0	64.42	74.65	77.90	79.98	82.92	84.99	88.18	90.05	91.11	91.80	95.10
82.5	71.38	79.66	82.17	83.69	85.97	87.93	90.39	91.94	92.86	93.44	96.29
85.0	76.98	83.59	85.54	86.79	88.57	90.47	92.39	93.64	94.38	94.88	97.28
87.5	82.01	87.19	88.56	89.66	91.04	92.80	94.22	95.20	95.77	96.18	98.14
90.0	86.26	90.32	91.37	92.28	93.37	94.86	95.82	96.54	96.98	97.31	98.81
92.5	90.47	93.30	94.07	94.72	95.50	96.61	97.28	97.76	98.04	98.29	99.31
95.0	94.53	96.09	96.62	96.96	97.48	98.10	98.49	98.79	98.94	99.09	99.64
97.5	98.54	98.97	99.10	99.20	99.35	99.46	99.51	99.63	99.71	99.79	99.91

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Third-quartile storms; storm duration 6 to 12 hours										
2.5	0.43	0.69	0.75	0.83	1.42	2.32	2.76	3.23	4.17	4.73	5.83
5.0	.78	1.74	1.96	2.30	3.20	4.35	5.14	6.99	8.01	8.82	10.90
7.5	1.13	2.69	3.22	3.79	4.93	6.32	7.41	10.42	11.65	12.79	15.80
10.0	1.48	3.57	4.46	5.23	6.72	8.35	9.82	13.56	15.33	16.90	20.60
12.5	1.82	4.42	5.70	6.64	8.45	10.29	12.04	16.24	18.76	20.66	25.20
15.0	2.17	5.15	6.85	7.93	10.02	12.17	14.46	18.95	22.14	24.60	29.54
17.5	2.52	5.74	7.89	9.09	11.39	13.85	16.83	21.42	25.21	28.22	33.42
20.0	2.87	6.31	8.83	10.05	12.62	15.52	19.58	24.04	28.33	31.90	37.24
22.5	3.21	6.91	9.71	10.94	13.55	16.91	22.31	26.40	30.86	35.23	40.51
25.0	3.59	7.52	10.47	11.70	14.36	18.26	25.45	28.79	33.16	38.59	43.41
27.5	3.95	8.11	11.12	12.32	15.12	19.32	27.58	30.80	34.98	40.81	45.86
30.0	4.32	8.65	11.58	12.74	15.72	20.16	29.19	32.46	36.58	42.39	47.77
32.5	4.68	9.14	12.01	13.18	16.30	20.84	29.94	33.67	37.48	43.08	49.14
35.0	5.00	9.56	12.19	13.41	16.98	21.44	30.05	34.48	38.11	43.16	50.05
37.5	5.25	9.99	12.30	13.65	17.80	21.87	30.20	34.69	38.71	43.50	50.50
40.0	5.62	10.62	12.52	13.96	18.81	22.50	30.50	34.72	39.33	44.00	50.74
42.5	5.92	11.37	13.05	14.69	20.10	23.54	30.80	34.83	39.90	44.50	51.25
45.0	6.32	12.23	13.93	15.83	21.62	24.70	31.00	35.38	41.05	45.00	52.35
47.5	6.88	13.50	15.35	17.64	23.47	26.55	31.60	36.80	42.88	46.00	54.66
50.0	7.73	14.97	17.18	19.81	25.60	28.98	34.00	39.25	45.19	47.81	57.78
52.5	8.76	16.74	19.50	22.64	28.09	31.93	36.89	42.64	48.00	51.41	61.85
55.0	10.27	19.06	22.25	25.67	31.10	35.49	40.51	46.76	51.58	55.46	66.44
57.5	11.99	21.80	25.36	28.73	34.47	39.64	44.47	51.19	55.66	59.79	70.90
60.0	14.23	24.82	28.61	31.98	38.29	44.05	48.87	55.78	60.01	64.23	74.84
62.5	16.41	28.33	32.24	35.84	42.57	48.82	53.62	60.62	64.61	68.90	78.59
65.0	18.33	32.24	36.23	39.92	47.24	53.90	58.72	65.47	69.40	73.26	81.82
67.5	21.02	36.62	40.66	44.60	52.24	58.86	63.83	70.30	73.93	77.46	84.72
70.0	25.01	41.74	45.61	50.04	57.78	64.01	69.02	75.19	78.26	81.37	87.41
72.5	29.81	47.50	51.22	56.02	63.48	69.29	74.22	79.88	82.33	84.96	89.90
75.0	36.13	53.87	57.39	62.14	69.36	74.50	78.97	83.94	85.85	87.95	92.04
77.5	44.42	60.85	64.04	68.48	75.06	79.37	83.15	87.41	88.88	90.55	93.99
80.0	52.99	67.87	70.72	74.60	80.39	83.94	86.82	90.22	91.39	92.67	95.54
82.5	61.18	74.47	76.95	80.14	85.00	87.88	89.93	92.48	93.37	94.39	96.75
85.0	69.06	80.37	82.53	84.89	88.90	91.06	92.36	94.20	94.93	95.71	97.63
87.5	76.42	85.48	87.24	88.89	91.97	93.55	94.37	95.65	96.21	96.82	98.31
90.0	82.61	89.55	90.92	92.07	94.37	95.50	96.02	96.86	97.26	97.69	98.77
92.5	88.00	92.83	93.82	94.63	96.25	97.02	97.39	97.90	98.16	98.46	99.17
95.0	92.75	95.65	96.28	96.78	97.81	98.27	98.50	98.76	98.92	99.14	99.52
97.5	97.09	98.28	98.52	98.73	99.22	99.36	99.47	99.55	99.63	99.80	99.86

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Third-quartile storms; storm duration 12 to 24 hours										
2.5	0.25	0.58	0.83	1.11	1.60	1.53	2.77	3.12	3.34	4.33	7.35
5.0	.78	1.47	1.89	2.32	2.93	3.55	4.81	5.86	6.93	8.54	13.35
7.5	1.21	2.33	2.93	3.52	4.28	5.41	6.83	8.50	10.20	12.20	18.69
10.0	1.51	3.07	3.98	4.70	5.66	7.08	8.91	11.03	13.28	15.41	23.30
12.5	1.68	3.75	4.97	5.81	7.06	8.68	10.94	13.42	16.02	17.99	26.98
15.0	1.70	4.30	5.73	6.68	8.42	10.20	12.74	15.73	18.09	19.89	29.28
17.5	1.60	4.74	6.29	7.41	9.69	11.59	14.40	17.78	19.81	21.53	30.81
20.0	1.51	5.00	6.64	7.92	10.87	13.09	15.89	19.44	21.20	22.93	31.87
22.5	1.46	5.25	6.85	8.23	11.89	14.59	17.18	20.88	22.28	24.24	32.62
25.0	1.43	5.31	6.84	8.32	12.52	15.65	18.18	22.12	23.24	25.45	33.31
27.5	1.49	5.41	6.90	8.44	12.85	16.46	19.12	23.08	24.22	26.69	34.20
30.0	1.65	5.42	6.81	8.27	12.75	16.91	19.69	23.92	25.05	27.66	35.06
32.5	1.79	5.51	6.82	8.19	12.33	16.78	20.00	24.69	25.88	28.58	36.06
35.0	2.00	5.55	6.78	8.13	11.94	16.59	20.10	25.44	26.77	29.24	37.05
37.5	2.27	5.76	6.94	8.29	11.76	16.72	20.27	26.03	27.62	29.93	38.10
40.0	2.53	5.95	7.10	8.49	11.86	16.79	20.29	26.66	28.55	30.54	39.19
42.5	3.01	6.52	7.78	9.41	12.71	17.31	20.84	27.48	29.73	31.47	40.50
45.0	3.89	7.40	8.69	10.64	14.11	18.80	22.25	29.00	31.43	33.05	42.02
47.5	5.12	8.88	10.25	12.60	16.16	21.00	24.61	31.20	33.88	35.67	44.71
50.0	6.70	10.91	12.38	15.23	19.16	24.08	28.15	34.80	37.70	39.71	48.74
52.5	9.09	13.96	15.64	18.99	23.24	28.57	33.21	39.45	42.51	45.15	54.54
55.0	11.99	17.73	19.57	23.26	28.11	34.04	39.22	45.14	48.39	51.73	61.62
57.5	15.09	22.04	24.45	28.38	34.01	40.12	45.73	51.44	55.01	58.93	69.62
60.0	18.64	26.63	29.59	33.67	40.36	46.59	52.38	58.01	61.82	66.00	76.96
62.5	22.51	31.64	35.08	39.14	46.60	53.01	58.84	64.08	67.96	72.22	83.08
65.0	26.34	36.52	40.19	44.23	52.30	58.92	64.74	69.77	73.60	77.32	87.56
67.5	30.13	41.49	45.26	49.21	57.34	64.10	69.91	74.65	78.27	81.30	90.65
70.0	34.52	46.41	49.87	53.86	61.73	68.66	74.36	78.65	81.84	84.21	92.44
72.5	39.22	51.39	55.00	58.72	65.84	72.71	78.29	81.92	84.58	86.43	93.85
75.0	44.56	56.23	60.07	63.56	69.95	76.38	81.57	84.64	86.80	88.30	95.00
77.5	50.26	61.09	65.29	68.49	74.18	79.74	84.28	86.78	88.54	90.00	95.97
80.0	56.56	65.84	70.23	73.18	78.37	82.99	86.71	88.75	90.15	91.61	96.79
82.5	62.67	70.67	75.12	77.65	82.26	85.89	88.96	90.70	91.87	93.32	97.56
85.0	68.55	75.34	79.26	81.57	85.66	88.46	90.92	92.52	93.55	94.94	98.13
87.5	73.97	79.94	83.14	85.19	88.63	90.76	92.77	94.24	95.14	96.31	98.61
90.0	79.18	84.37	86.75	88.44	91.18	92.85	94.57	95.86	96.56	97.47	99.01
92.5	84.00	88.58	90.33	91.63	93.59	94.79	96.18	97.24	97.77	98.43	99.35
95.0	88.73	92.69	93.90	94.84	95.96	96.73	97.65	98.38	98.72	99.13	99.66
97.5	93.48	96.85	97.54	98.05	98.37	98.67	99.06	99.40	99.53	99.70	99.95

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Third-quartile storms; storm duration 24 to 72 hours										
2.5	0.54	1.16	1.47	1.73	2.00	2.55	3.48	4.57	5.16	5.94	10.33
5.0	1.43	2.70	3.08	3.53	4.63	5.22	6.86	8.55	9.24	10.42	15.02
7.5	2.18	4.05	4.54	5.25	7.12	7.72	10.07	12.34	13.15	14.63	19.21
10.0	2.80	5.27	5.92	6.87	9.29	9.87	13.01	15.88	16.99	18.58	23.20
12.5	3.35	6.37	7.19	8.32	11.04	11.65	15.53	18.91	20.44	22.18	26.75
15.0	3.77	7.33	8.35	9.70	12.45	13.30	17.74	21.46	23.48	25.20	29.61
17.5	4.09	8.11	9.31	10.85	13.66	14.75	19.72	23.62	25.98	27.65	31.92
20.0	4.46	8.85	10.21	11.82	14.79	16.15	21.45	25.44	28.00	29.62	34.08
22.5	4.87	9.50	10.96	12.63	15.85	17.66	23.05	27.01	29.39	31.08	36.29
25.0	5.24	10.01	11.58	13.32	16.97	19.30	24.62	28.54	30.62	32.15	38.30
27.5	5.64	10.43	12.12	13.87	18.22	20.99	26.08	30.02	31.77	33.17	40.40
30.0	6.05	10.85	12.61	14.35	19.39	22.66	27.52	31.43	33.06	34.38	42.46
32.5	6.44	11.21	13.06	14.75	20.33	24.18	28.80	32.79	34.53	35.76	44.44
35.0	6.68	11.47	13.39	15.01	21.02	25.44	29.90	33.95	36.04	37.26	46.22
37.5	6.92	11.76	13.67	15.24	21.25	26.17	30.77	35.06	37.34	38.70	48.07
40.0	7.09	12.08	13.96	15.49	21.40	26.27	31.23	35.85	38.27	39.90	49.13
42.5	7.33	12.56	14.46	15.99	21.60	26.48	31.51	36.48	38.90	40.81	49.82
45.0	7.83	13.78	15.60	17.29	22.20	27.22	32.37	37.51	39.75	42.00	51.30
47.5	8.83	16.11	18.05	19.90	23.85	28.91	34.20	39.64	41.83	44.27	53.51
50.0	10.21	19.43	21.67	23.66	27.05	32.02	37.16	42.78	45.29	47.94	56.89
52.5	11.95	23.09	25.61	28.21	31.38	36.70	41.65	47.33	50.15	52.92	62.08
55.0	13.91	26.55	29.62	32.87	36.16	41.68	46.96	52.81	55.98	59.07	68.57
57.5	15.82	29.36	33.40	37.02	40.93	46.78	52.36	58.47	62.11	65.54	74.54
60.0	17.65	31.22	36.29	40.29	45.33	51.26	57.17	63.45	67.44	71.17	79.75
62.5	19.28	32.59	38.53	43.19	49.39	55.42	61.68	68.02	71.93	75.82	83.91
65.0	20.93	34.27	40.84	45.74	52.92	59.04	65.59	71.97	75.71	79.61	87.21
67.5	22.55	37.11	43.78	48.85	56.44	63.14	69.43	75.75	79.27	82.76	89.80
70.0	24.12	39.98	46.64	52.00	59.83	66.73	72.98	79.22	82.46	85.45	92.30
72.5	25.88	43.17	49.73	55.19	63.25	70.44	76.48	82.49	85.29	87.98	94.36
75.0	27.80	46.34	52.75	57.89	66.61	73.64	79.40	85.13	87.72	90.29	95.91
77.5	30.19	49.79	56.12	60.81	70.10	76.65	82.04	87.47	89.84	92.32	96.98
80.0	33.27	52.83	59.32	63.49	73.45	79.00	84.18	89.24	91.39	93.88	97.54
82.5	38.07	57.19	63.39	67.16	76.94	81.68	86.29	90.78	92.65	95.10	97.79
85.0	44.29	62.24	67.94	71.47	80.34	84.23	88.37	92.31	93.99	96.12	98.04
87.5	52.29	68.24	73.24	76.55	83.81	86.93	90.55	93.93	95.32	96.96	98.40
90.0	61.48	74.67	78.89	81.79	87.38	89.67	92.66	95.39	96.50	97.66	98.83
92.5	71.68	81.68	84.95	87.31	91.02	92.62	94.82	96.78	97.57	98.30	99.20
95.0	81.65	88.52	90.83	92.59	94.68	95.58	96.95	98.10	98.57	98.89	99.54
97.5	91.69	95.59	96.83	97.80	98.34	98.66	99.05	99.34	99.47	99.66	99.85

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Third-quartile storms; storm duration 0 to 72 hours										
2.5	0.45	0.89	1.04	1.35	1.95	2.51	2.73	3.68	4.35	5.13	8.13
5.0	.96	2.11	2.42	2.92	3.87	4.73	6.02	7.58	8.49	9.65	13.25
7.5	1.42	3.22	3.70	4.48	5.72	6.86	9.05	11.28	12.41	13.86	17.94
10.0	1.81	4.24	4.89	6.03	7.57	8.96	11.78	14.68	16.17	17.89	22.26
12.5	2.21	5.23	6.04	7.48	9.29	10.92	14.10	17.53	19.38	21.42	26.05
15.0	2.59	6.08	7.09	8.77	10.86	12.76	16.08	19.97	22.23	24.45	29.37
17.5	2.91	6.77	8.00	9.90	12.23	14.41	17.79	22.09	24.60	26.86	32.21
20.0	3.22	7.36	8.81	10.82	13.44	15.95	19.42	23.92	26.65	28.92	34.87
22.5	3.56	7.91	9.55	11.56	14.48	17.34	20.92	25.50	28.16	30.43	37.16
25.0	3.80	8.26	10.11	12.12	15.36	18.66	22.47	27.12	29.72	31.79	39.21
27.5	4.08	8.60	10.60	12.63	16.20	19.91	23.99	28.66	31.07	33.06	41.07
30.0	4.32	8.87	11.01	12.99	16.87	21.05	25.42	30.05	32.38	34.41	42.74
32.5	4.61	9.19	11.40	13.30	17.42	22.08	26.66	31.27	33.61	35.77	44.15
35.0	4.82	9.43	11.67	13.52	17.85	22.89	27.77	32.33	34.84	37.10	45.40
37.5	5.12	9.77	11.95	13.77	18.25	23.45	28.57	33.15	35.82	38.22	46.48
40.0	5.39	10.08	12.23	14.07	18.53	23.77	29.16	33.80	36.67	39.16	47.38
42.5	5.84	10.76	12.79	14.64	19.08	24.24	29.81	34.44	37.43	39.99	48.28
45.0	6.48	11.69	13.81	15.78	20.20	25.14	30.91	35.58	38.65	41.18	49.80
47.5	7.51	13.41	15.66	17.88	22.26	27.11	32.80	37.64	40.73	43.41	52.46
50.0	8.84	15.60	18.24	20.87	25.31	30.15	35.79	40.81	43.90	46.95	56.44
52.5	10.53	18.38	21.56	24.66	29.40	34.37	39.86	45.08	48.21	51.71	61.64
55.0	12.45	21.32	25.17	28.80	33.99	39.28	44.68	50.19	53.50	57.47	67.86
57.5	14.51	24.65	28.99	33.03	38.71	44.53	49.78	55.65	59.08	63.58	74.03
60.0	16.71	27.86	32.65	37.04	43.31	49.48	54.82	60.88	64.42	69.14	79.32
62.5	19.05	31.39	36.44	40.92	47.76	54.35	59.79	65.76	69.36	73.95	83.56
65.0	21.52	35.03	40.19	44.63	51.95	58.90	64.48	70.24	73.76	77.99	86.82
67.5	24.30	39.09	44.34	48.71	56.30	63.36	68.96	74.46	77.72	81.46	89.28
70.0	27.37	43.30	48.61	52.94	60.73	67.56	73.24	78.29	81.19	84.40	91.37
72.5	30.78	47.90	53.17	57.40	65.13	71.75	77.26	81.74	84.27	87.06	93.22
75.0	34.87	52.56	57.68	61.91	69.36	75.58	80.70	84.72	86.86	89.36	94.79
77.5	39.77	57.47	62.36	66.49	73.54	79.15	83.79	87.32	89.14	91.41	96.02
80.0	45.21	62.39	66.89	70.87	77.36	82.29	86.47	89.43	90.99	93.04	96.91
82.5	51.52	67.46	71.50	75.22	80.97	85.28	88.87	91.31	92.67	94.42	97.51
85.0	58.42	72.46	75.96	79.31	84.32	87.93	91.04	93.08	94.19	95.62	97.99
87.5	65.64	77.59	80.38	83.26	87.48	90.36	93.09	94.73	95.61	96.70	98.44
90.0	72.88	82.58	84.68	87.09	90.36	92.62	94.88	96.17	96.81	97.58	98.86
92.5	80.35	87.50	88.96	90.82	93.17	94.86	96.48	97.44	97.86	98.34	99.23
95.0	87.52	92.28	93.16	94.46	95.93	97.15	97.91	98.51	98.75	99.02	99.55
97.5	94.68	96.96	97.40	98.10	98.68	98.94	99.21	99.44	99.53	99.63	99.85

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Fourth-quartile storms; storm duration 0 to 6 hours											
2.5	--	0.12	0.27	0.40	0.67	1.00	1.56	2.30	3.21	4.00	--
5.0	--	.20	.50	.60	1.18	2.25	3.81	5.50	6.70	7.30	--
7.5	--	.30	.80	.90	1.70	3.40	5.90	8.70	10.10	10.60	--
10.0	--	.38	1.11	1.20	2.19	4.50	7.90	11.88	13.56	14.00	--
12.5	--	.50	1.30	1.40	2.68	5.32	9.57	14.40	16.40	18.20	--
15.0	--	.60	1.47	1.67	3.20	6.33	11.48	16.90	19.30	21.00	--
17.5	--	.80	1.65	1.81	3.69	6.97	12.90	19.17	21.88	23.50	--
20.0	--	.90	1.66	1.84	4.16	7.74	14.16	20.20	23.40	25.00	--
22.5	--	1.04	1.67	1.86	4.33	8.07	14.93	21.17	24.60	26.00	--
25.0	--	1.17	1.68	1.89	4.48	8.58	15.59	21.24	25.02	26.60	--
27.5	--	1.40	1.83	1.99	4.64	8.78	15.79	21.75	25.53	27.40	--
30.0	--	1.70	2.10	2.30	4.77	9.48	15.81	21.80	25.70	28.20	--
32.5	--	1.99	2.36	2.58	4.92	9.79	15.95	21.83	25.80	29.51	--
35.0	--	2.30	2.75	3.10	5.40	10.80	16.10	22.30	25.90	29.90	--
37.5	--	2.58	3.14	3.63	5.93	11.80	16.25	22.73	26.00	30.35	--
40.0	--	3.00	3.73	4.30	6.84	12.72	16.81	23.29	26.20	30.80	--
42.5	--	3.30	4.40	5.20	7.80	13.80	17.50	24.10	26.40	31.30	--
45.0	--	3.71	5.09	6.01	8.67	14.86	18.10	24.99	26.80	31.79	--
47.5	--	4.00	5.80	7.00	10.00	16.05	19.30	26.00	27.20	32.50	--
50.0	--	4.30	6.58	7.98	11.25	17.60	20.51	27.11	27.82	33.20	--
52.5	--	4.63	7.49	9.13	12.59	19.22	22.26	28.32	29.22	33.86	--
55.0	--	5.86	8.43	10.37	14.46	21.05	24.51	29.77	30.92	35.55	--
57.5	--	7.00	10.05	12.39	16.87	22.93	27.01	31.73	33.13	37.50	--
60.0	--	8.08	11.85	14.54	19.41	25.36	30.49	34.54	36.09	39.43	--
62.5	--	10.19	14.20	17.34	22.50	28.18	34.45	37.55	39.16	42.57	--
65.0	--	12.75	17.43	20.94	26.13	31.47	38.85	41.88	43.71	46.98	--
67.5	--	16.50	21.22	25.07	30.42	35.53	43.67	47.38	49.37	53.11	--
70.0	--	19.94	25.00	29.18	34.66	40.44	49.45	53.99	56.27	60.09	--
72.5	--	23.75	29.09	33.60	39.65	45.40	54.93	61.03	63.79	67.57	--
75.0	--	27.56	33.17	37.92	45.01	50.53	60.50	69.32	72.36	75.73	--
77.5	--	31.34	36.99	42.12	50.69	56.22	66.33	76.70	79.66	82.29	--
80.0	--	35.41	41.12	46.31	56.24	62.12	72.16	82.57	85.38	87.28	--
82.5	--	40.13	45.62	50.75	62.18	67.98	77.48	87.11	89.60	90.79	--
85.0	--	45.92	51.18	56.23	68.36	73.90	82.50	90.72	92.60	93.38	--
87.5	--	53.27	57.96	62.72	74.39	79.61	87.06	92.71	94.00	94.64	--
90.0	--	61.92	65.90	70.11	80.71	85.00	90.88	94.32	95.23	95.83	--
92.5	--	71.85	74.80	78.29	86.71	89.90	93.94	95.97	96.48	97.07	--
95.0	--	82.68	84.47	86.87	92.28	94.26	96.51	97.83	98.06	98.52	--
97.5	--	93.88	94.36	95.39	97.57	98.57	98.84	99.60	99.80	99.96	--

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th	
Fourth-quartile storms; storm duration 6 to 12 hours												
2.5	0.32	0.97	1.23	1.73	3.32	4.22	4.88	7.54	8.27	9.31	12.28	
5.0	1.36	2.49	2.86	3.73	6.07	8.37	10.72	13.59	14.33	15.49	18.58	
7.5	2.41	3.99	4.49	5.74	8.81	12.51	16.04	18.71	19.46	20.77	24.17	
10.0	3.55	5.66	6.26	7.96	11.60	16.42	20.27	22.76	23.57	25.07	28.88	
12.5	4.69	7.30	8.08	10.23	14.27	19.99	23.56	25.90	26.87	28.63	32.71	
15.0	5.90	8.96	10.04	12.59	16.96	23.02	26.35	28.57	29.65	31.54	35.58	
17.5	6.81	10.72	12.06	14.93	19.22	25.38	28.36	30.47	31.80	33.89	38.18	
20.0	8.03	12.74	14.33	17.35	21.58	27.19	30.11	32.56	34.11	36.30	40.23	
22.5	8.83	14.30	16.15	19.23	23.76	28.71	31.79	34.65	36.44	38.63	41.92	
25.0	9.70	16.00	18.01	21.03	25.94	29.97	33.23	36.50	38.43	40.50	43.15	
27.5	10.21	17.44	19.72	22.64	27.38	30.95	34.34	37.96	40.08	42.00	44.07	
30.0	10.76	18.58	21.11	23.84	28.57	31.67	35.25	39.33	41.51	43.17	44.68	
32.5	10.81	19.22	22.05	24.56	28.70	32.15	35.69	40.26	42.58	44.00	45.26	
35.0	10.86	19.84	23.01	25.22	28.80	32.63	36.19	40.95	43.19	44.35	45.61	
37.5	11.10	19.97	23.37	25.40	28.96	32.87	36.46	41.20	43.39	44.47	45.81	
40.0	11.40	20.10	23.50	25.60	29.14	32.98	36.65	41.29	43.42	44.48	45.98	
42.5	11.70	20.20	23.60	25.90	29.30	33.00	36.68	41.33	43.50	44.50	46.16	
45.0	12.00	20.30	23.80	26.20	29.50	33.06	36.81	41.37	43.65	44.60	46.94	
47.5	12.20	20.40	23.90	26.40	29.70	33.09	36.87	41.41	43.75	44.70	48.27	
50.0	12.50	20.45	24.10	26.70	29.80	33.11	36.93	41.45	43.90	44.73	50.00	
52.5	12.80	20.50	24.20	26.90	30.00	33.14	37.00	41.49	44.00	45.42	51.75	
55.0	13.10	20.60	24.40	27.20	30.20	33.16	37.06	41.53	44.11	46.30	53.51	
57.5	13.30	20.70	24.50	27.50	30.40	33.19	37.12	42.36	45.07	47.35	55.87	
60.0	13.60	20.80	24.60	27.70	30.60	33.77	37.70	43.68	46.51	48.69	58.13	
62.5	13.90	20.90	24.80	28.00	30.80	34.74	38.24	44.97	47.61	49.62	59.79	
65.0	14.20	21.00	24.90	28.20	31.00	36.03	40.12	46.65	49.04	50.89	61.78	
67.5	14.40	21.10	25.00	28.50	31.10	37.75	42.13	48.29	50.41	51.88	63.96	
70.0	14.70	21.50	25.60	28.80	32.00	40.12	44.51	50.43	52.28	53.33	65.81	
72.5	15.00	23.00	27.00	30.20	34.63	43.06	47.08	52.77	54.33	55.18	67.55	
75.0	17.00	26.57	30.71	33.81	39.28	46.85	50.66	55.79	57.19	57.98	69.72	
77.5	20.71	32.59	36.59	38.86	44.73	51.34	54.71	59.46	60.80	61.68	72.65	
80.0	25.99	38.27	41.98	43.63	50.79	56.94	60.15	64.57	65.91	67.14	76.24	
82.5	30.00	43.65	47.28	48.72	57.41	63.50	66.62	70.45	71.81	73.44	80.78	
85.0	32.93	48.24	51.93	53.94	63.96	70.59	73.83	76.85	78.15	79.95	85.80	
87.5	36.02	53.43	57.29	59.85	70.18	77.51	80.50	82.99	84.22	85.95	90.46	
90.0	40.40	59.35	63.67	66.65	76.36	83.91	86.66	88.58	89.61	91.03	94.43	
92.5	47.96	67.31	71.55	74.45	82.60	89.44	91.59	92.97	93.74	94.75	97.24	
95.0	58.93	77.23	80.75	82.69	88.56	94.13	95.48	96.26	96.70	97.27	98.82	
97.5	72.71	88.61	91.05	91.25	94.51	98.14	98.57	98.87	99.05	99.21	99.83	

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Fourth-quartile storms; storm duration 12 to 24 hours											
2.5	0.43	0.78	1.09	1.36	1.68	2.41	3.53	4.80	5.81	7.70	13.30
5.0	.82	1.66	2.00	2.45	3.06	3.93	5.23	7.97	9.44	11.67	15.43
7.5	1.12	2.39	2.86	3.55	4.44	5.40	6.85	10.55	12.52	14.83	17.69
10.0	1.40	3.09	3.62	4.58	5.67	6.63	8.31	12.74	14.95	17.17	19.94
12.5	1.51	3.66	4.31	5.43	6.69	7.73	9.60	14.38	16.60	18.65	22.14
15.0	1.74	4.24	5.16	6.29	7.70	8.88	10.89	15.85	17.80	19.56	24.26
17.5	1.90	4.83	6.16	7.40	9.04	10.24	12.31	17.16	19.01	20.51	26.33
20.0	2.24	5.49	7.19	8.62	10.48	11.87	13.96	18.84	20.54	21.97	28.41
22.5	2.42	6.10	8.36	9.96	12.16	13.95	15.94	20.58	22.39	23.90	30.52
25.0	2.79	6.89	9.82	11.70	14.24	16.38	18.36	22.79	24.93	26.48	32.84
27.5	3.06	7.67	11.15	13.38	16.40	18.96	20.92	25.08	27.81	29.55	35.21
30.0	3.59	8.40	12.33	14.86	18.28	21.52	23.60	27.55	30.62	32.57	37.65
32.5	4.06	9.15	13.56	16.24	20.01	23.89	26.18	30.07	33.35	35.52	39.88
35.0	4.81	10.09	14.69	17.49	21.53	26.11	28.73	32.62	35.86	38.22	41.96
37.5	5.57	10.93	15.60	18.49	22.82	27.95	31.07	35.02	37.92	40.46	43.80
40.0	6.57	11.91	16.55	19.60	23.98	29.68	33.33	37.24	39.76	42.30	45.56
42.5	7.39	13.11	17.56	20.76	25.23	31.09	35.31	39.23	41.34	43.90	47.19
45.0	8.41	14.47	18.65	22.04	26.59	32.56	37.21	41.06	42.74	45.18	48.77
47.5	9.58	15.80	19.77	23.28	28.03	33.86	38.84	42.70	44.10	46.34	50.39
50.0	10.88	17.18	20.87	24.72	29.40	35.70	40.38	44.03	45.35	47.41	51.90
52.5	12.18	18.50	21.90	26.32	30.82	37.48	41.70	45.24	46.53	48.46	53.38
55.0	13.40	19.61	22.83	27.65	32.11	39.08	42.80	46.22	47.65	49.50	54.84
57.5	14.26	20.34	23.51	28.52	33.27	40.26	43.53	46.96	48.69	50.53	56.08
60.0	14.69	20.77	23.94	29.03	34.22	41.09	44.01	47.51	49.46	51.37	56.99
62.5	15.10	21.15	24.30	29.19	34.97	41.25	44.20	47.90	50.20	52.26	57.80
65.0	15.27	21.41	24.66	29.50	35.54	41.40	44.28	48.21	50.66	52.91	59.20
67.5	16.11	22.18	25.48	29.80	36.54	41.56	44.68	48.83	51.45	53.80	60.97
70.0	17.01	23.43	26.76	30.17	37.83	42.46	45.86	50.07	52.68	55.27	63.80
72.5	17.74	24.89	28.45	32.13	39.66	43.96	47.77	52.06	54.78	57.62	67.97
75.0	18.14	26.30	30.21	34.15	41.76	45.74	50.14	54.77	57.59	60.59	73.16
77.5	19.00	28.09	32.41	36.88	44.25	47.99	53.11	58.19	61.38	64.59	77.99
80.0	19.70	30.03	34.83	39.90	47.26	51.22	56.79	62.33	65.69	69.02	82.97
82.5	21.04	32.68	37.88	43.94	51.32	55.38	61.06	66.98	70.56	73.71	87.20
85.0	23.90	36.24	42.05	48.54	56.47	60.72	66.09	72.07	75.65	78.47	90.34
87.5	28.97	42.12	48.52	55.43	63.41	67.67	72.35	77.77	80.93	83.35	92.75
90.0	36.35	50.03	56.64	63.75	71.70	75.58	79.26	83.59	85.99	87.78	94.89
92.5	46.69	59.80	66.18	72.87	80.06	83.13	85.80	88.95	90.66	91.85	96.49
95.0	59.84	71.14	76.88	82.17	88.08	90.18	91.83	93.78	94.79	95.48	98.01
97.5	74.82	83.94	88.39	92.06	95.90	96.81	97.45	98.20	98.48	98.67	99.53

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
Fourth-quartile storms; storm duration 24 to 72 hours											
2.5	0.78	1.15	1.52	1.82	2.22	3.17	5.10	6.62	8.73	10.01	12.95
5.0	1.27	2.05	2.81	3.28	4.70	6.17	8.83	10.97	13.84	16.18	20.04
7.5	1.72	3.21	4.11	4.66	6.93	8.81	12.14	14.84	18.08	21.21	25.71
10.0	2.08	4.31	5.26	6.02	8.77	10.95	14.82	17.97	21.04	24.70	29.66
12.5	2.31	5.17	6.17	7.19	10.20	12.72	16.86	20.30	22.84	26.72	31.91
15.0	2.78	5.90	6.99	8.17	11.34	14.33	18.73	22.37	24.46	28.16	33.30
17.5	3.49	6.61	7.84	9.04	12.09	15.67	20.18	24.31	25.88	29.46	34.35
20.0	4.39	7.49	8.74	9.95	12.92	17.08	21.72	26.29	27.60	31.12	35.76
22.5	5.51	8.58	9.92	11.02	13.94	18.60	23.21	28.28	29.81	33.12	37.48
25.0	6.82	10.14	11.56	12.48	15.23	20.17	24.74	30.45	32.36	35.37	39.43
27.5	8.08	12.07	13.51	14.32	16.87	21.72	26.18	32.22	34.18	37.17	41.14
30.0	9.16	14.16	15.65	16.46	18.88	23.33	27.78	33.70	35.78	38.65	42.65
32.5	10.14	16.39	17.90	18.80	20.97	24.93	29.26	34.98	37.14	39.73	43.79
35.0	11.01	18.24	19.69	20.72	22.92	26.53	30.85	36.14	38.22	40.58	44.66
37.5	11.84	19.56	21.03	22.25	24.69	28.02	32.40	37.04	38.94	41.13	45.30
40.0	12.55	20.63	22.13	23.51	26.34	29.50	33.90	38.15	40.04	41.93	45.93
42.5	13.25	21.43	22.93	24.46	27.65	30.98	35.40	39.38	41.19	42.71	46.54
45.0	14.02	21.99	23.51	25.19	28.86	32.46	36.90	40.71	42.43	43.67	47.26
47.5	14.94	22.73	24.28	26.14	30.16	33.97	38.34	42.08	43.69	44.73	48.07
50.0	15.74	23.61	25.16	27.17	31.47	35.52	39.80	43.56	45.08	46.01	49.04
52.5	16.71	24.63	26.16	28.36	32.75	37.06	41.34	45.12	46.54	47.30	50.20
55.0	17.64	25.93	27.41	29.71	34.23	38.58	42.91	46.67	48.00	48.80	51.50
57.5	18.44	27.13	28.53	30.96	35.60	39.99	44.38	48.01	49.27	50.26	52.85
60.0	19.23	28.29	29.75	32.23	36.80	41.35	45.79	49.35	50.62	51.73	54.30
62.5	20.27	29.64	31.11	33.54	37.96	42.63	47.16	50.57	51.92	53.09	55.76
65.0	21.12	30.82	32.31	34.77	39.26	43.74	48.45	51.64	53.10	54.40	57.18
67.5	22.04	31.88	33.47	36.01	40.48	44.88	49.57	52.81	54.30	55.65	58.68
70.0	23.00	33.10	34.90	37.48	41.92	46.42	50.77	54.24	55.67	56.91	60.28
72.5	24.36	34.39	36.45	39.18	43.65	48.23	52.42	55.98	57.30	58.45	62.21
75.0	25.99	36.07	38.39	41.28	45.82	50.48	54.62	58.32	59.60	60.73	64.86
77.5	28.16	38.07	40.88	43.95	48.40	53.51	57.45	61.38	62.59	63.85	68.32
80.0	30.76	40.54	43.86	47.02	51.43	57.00	61.01	65.01	66.22	67.63	72.51
82.5	34.32	43.66	47.48	50.56	54.98	61.01	65.31	69.23	70.54	72.17	77.40
85.0	38.25	47.76	51.90	54.77	59.27	65.52	69.96	73.68	75.14	77.18	82.51
87.5	43.39	52.67	57.26	59.99	64.39	70.54	74.84	78.30	79.75	82.13	87.29
90.0	50.42	59.36	63.71	66.05	70.21	75.83	79.90	83.01	84.39	86.65	91.41
92.5	59.53	67.57	71.44	73.39	77.12	81.36	85.06	87.76	89.02	90.94	94.69
95.0	70.28	77.14	80.26	81.90	84.91	86.75	90.09	92.43	93.45	94.87	97.17
97.5	82.61	87.72	89.83	91.12	93.27	94.18	95.08	97.15	97.86	98.44	99.15

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
	Fourth-quartile storms; storm duration 0 to 72 hours										
2.5	0.43	0.97	1.30	1.75	2.57	3.28	4.00	5.78	7.25	8.64	11.93
5.0	.92	1.92	2.52	3.04	4.27	5.16	7.60	10.25	12.19	14.11	18.53
7.5	1.37	2.85	3.68	4.34	5.95	7.53	10.73	14.20	16.41	18.74	24.03
10.0	1.75	3.75	4.85	5.58	7.47	9.59	13.42	17.36	19.72	22.34	28.07
12.5	2.04	4.50	5.88	6.65	8.84	11.30	15.57	19.77	22.14	25.03	30.76
15.0	2.51	5.31	6.84	7.68	10.10	12.93	17.57	21.72	24.04	27.04	32.60
17.5	2.95	6.21	7.83	8.73	11.30	14.30	19.15	23.33	25.56	28.65	34.08
20.0	3.55	7.32	8.99	9.86	12.60	15.98	20.89	24.98	27.25	30.37	35.70
22.5	4.18	8.42	10.18	11.14	14.15	17.64	22.53	26.73	29.09	32.21	37.55
25.0	5.00	9.79	11.63	12.79	16.01	19.46	24.24	28.59	31.08	34.01	39.43
27.5	5.71	11.08	13.23	14.61	18.00	21.27	25.84	30.42	32.98	35.78	41.14
30.0	6.48	12.25	14.76	16.57	19.96	23.10	27.55	32.17	34.82	37.44	42.66
32.5	7.16	13.24	16.09	18.35	21.74	24.71	29.15	33.82	36.43	38.90	43.85
35.0	7.86	14.20	17.30	19.89	23.32	26.30	30.84	35.42	37.95	40.29	44.73
37.5	8.45	14.99	18.27	21.05	24.57	27.67	32.39	36.78	39.18	41.49	45.45
40.0	8.99	15.78	19.02	22.02	25.70	28.95	33.96	38.11	40.36	42.56	46.11
42.5	9.58	16.62	19.84	22.75	26.68	30.19	35.38	39.32	41.42	43.55	46.79
45.0	10.25	17.49	20.75	23.52	27.66	31.51	36.81	40.55	42.52	44.50	47.54
47.5	11.03	18.41	21.72	24.35	28.67	32.86	38.15	41.77	43.59	45.40	48.52
50.0	11.73	19.36	22.66	25.24	29.69	34.27	39.52	43.08	44.80	46.40	49.60
52.5	12.44	20.38	23.69	26.24	30.75	35.65	40.67	44.36	46.02	47.47	50.83
55.0	12.95	21.24	24.54	27.22	31.89	36.92	41.86	45.63	47.22	48.63	52.17
57.5	13.45	21.99	25.25	28.03	32.92	38.02	42.78	46.69	48.30	49.81	53.56
60.0	13.76	22.71	25.86	28.91	34.01	39.04	43.62	47.70	49.33	50.95	54.83
62.5	14.04	23.33	26.45	29.80	35.14	39.90	44.33	48.54	50.22	52.03	56.11
65.0	14.42	23.80	26.86	30.40	36.00	40.72	45.14	49.34	51.10	53.05	57.25
67.5	15.66	24.87	27.87	31.42	37.06	41.71	46.06	50.19	52.08	54.10	58.66
70.0	17.04	26.39	29.29	32.89	38.43	43.15	47.54	51.42	53.40	55.38	60.39
72.5	19.05	28.47	31.44	34.90	40.13	45.03	49.50	53.19	55.33	57.21	62.82
75.0	21.42	30.92	34.15	37.43	42.22	47.52	52.32	55.86	58.09	59.92	66.21
77.5	24.00	33.81	37.53	40.68	45.14	50.60	55.80	59.39	61.71	63.54	70.65
80.0	26.18	36.80	41.07	44.17	48.59	54.45	60.07	63.88	66.19	68.04	75.41
82.5	28.99	40.09	45.09	48.23	52.90	59.01	64.98	69.05	71.34	73.28	80.60
85.0	32.14	43.83	49.41	52.67	58.05	64.24	70.54	74.63	76.77	78.77	85.60
87.5	36.96	49.25	55.03	58.31	64.28	70.27	76.27	80.17	82.11	83.97	89.88
90.0	44.05	56.45	61.96	65.12	71.16	76.81	82.08	85.45	87.05	88.67	93.26
92.5	53.75	65.31	70.25	73.11	78.52	83.44	87.61	90.24	91.45	92.69	95.95
95.0	65.55	75.71	79.67	82.03	85.96	90.01	92.76	94.50	95.25	95.99	97.86
97.5	79.24	87.29	90.03	91.69	93.47	96.48	97.54	98.30	98.56	98.79	99.34

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile											
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th	
First- through fourth-quartile storms combined; storm duration 0 to 6 hours												
2.5	0.55	1.12	1.40	1.71	3.35	4.00	5.95	7.61	8.94	10.25	13.08	
5.0	1.41	3.37	3.96	5.06	7.82	9.96	12.91	16.01	17.93	20.52	27.09	
7.5	2.40	5.67	6.84	8.33	12.14	15.88	19.74	24.33	26.82	30.56	39.94	
10.0	3.47	8.05	9.67	11.61	16.33	21.78	26.72	32.72	35.76	40.35	51.25	
12.5	4.56	10.42	12.42	14.81	20.35	27.55	33.59	40.71	44.33	49.40	60.78	
15.0	5.90	12.96	15.25	18.12	24.28	33.03	40.06	48.43	52.53	57.54	68.69	
17.5	7.18	15.40	17.95	21.30	28.17	37.81	45.82	54.99	59.40	64.07	74.39	
20.0	8.54	18.02	20.97	24.76	32.16	42.38	51.28	60.60	65.23	69.44	78.98	
22.5	9.96	20.56	24.01	28.03	35.97	46.39	55.96	65.12	69.91	73.60	82.32	
25.0	11.60	23.28	27.25	31.65	39.94	50.21	60.08	68.89	73.58	76.85	84.66	
27.5	13.23	25.87	30.35	35.07	43.87	53.82	63.78	71.72	76.15	79.42	86.39	
30.0	14.89	28.49	33.56	38.95	47.96	57.61	67.22	74.60	78.78	81.81	88.00	
32.5	16.53	30.93	36.54	42.41	51.78	61.09	70.15	77.18	81.01	83.75	89.32	
35.0	18.21	33.44	39.59	46.32	55.81	64.53	72.96	79.69	83.19	85.58	90.67	
37.5	19.87	35.65	42.30	49.56	59.26	67.48	75.27	81.84	85.02	87.09	91.88	
40.0	21.43	37.89	45.00	52.88	62.51	70.36	77.44	83.77	86.72	88.34	92.88	
42.5	23.08	39.57	47.50	55.35	65.08	72.77	79.24	85.04	87.78	89.23	93.63	
45.0	24.82	41.40	50.01	57.77	67.61	75.04	80.90	86.15	88.75	90.10	94.28	
47.5	26.59	43.19	52.20	59.61	69.54	76.97	82.18	87.00	89.39	90.73	94.74	
50.0	28.34	45.26	54.41	61.59	71.38	78.84	83.49	87.80	90.09	91.40	95.18	
52.5	30.40	47.46	56.59	63.22	72.80	80.34	84.60	88.57	90.70	92.00	95.62	
55.0	32.20	50.37	58.84	65.13	74.34	81.71	85.77	89.43	91.37	92.61	96.01	
57.5	33.77	53.21	60.97	67.10	75.68	83.02	86.81	90.22	91.97	93.16	96.37	
60.0	35.49	56.29	63.33	69.18	77.10	84.33	87.98	91.07	92.62	93.74	96.70	
62.5	37.31	59.36	65.80	71.31	78.64	85.52	89.04	91.85	93.20	94.26	97.01	
65.0	39.27	62.63	68.36	73.57	80.39	86.77	90.11	92.65	93.81	94.83	97.29	
67.5	42.12	65.87	71.04	75.77	81.98	88.02	91.11	93.38	94.38	95.36	97.57	
70.0	45.71	69.20	73.86	77.96	83.60	89.14	92.14	94.12	94.96	95.89	97.83	
72.5	50.41	72.51	76.72	80.23	85.31	90.26	93.03	94.79	95.51	96.39	98.09	
75.0	56.05	75.79	79.63	82.52	87.08	91.41	93.93	95.49	96.09	96.93	98.35	
77.5	62.31	78.85	82.52	84.79	88.77	92.51	94.75	96.09	96.63	97.41	98.59	
80.0	68.31	81.85	85.28	87.03	90.47	93.56	95.57	96.73	97.16	97.86	98.83	
82.5	74.19	84.81	87.78	89.24	92.12	94.59	96.30	97.29	97.66	98.26	99.05	
85.0	79.20	87.51	90.08	91.24	93.57	95.55	97.02	97.83	98.14	98.61	99.26	
87.5	83.63	90.08	92.15	93.04	94.84	96.44	97.65	98.30	98.54	98.90	99.45	
90.0	87.40	92.48	93.97	94.71	96.04	97.26	98.24	98.73	98.91	99.15	99.62	
92.5	91.13	94.69	95.72	96.35	97.24	98.06	98.75	99.10	99.25	99.40	99.76	
95.0	94.82	96.72	97.41	97.83	98.33	98.81	99.26	99.44	99.54	99.65	99.88	
97.5	98.45	98.74	99.07	99.29	99.42	99.55	99.66	99.76	99.81	99.89	99.99	

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First- through fourth-quartile storms combined; storm duration 6 to 12 hours											
2.5	0.73	1.65	2.17	2.90	4.57	6.09	6.84	8.99	10.42	12.88	19.79
5.0	2.02	3.96	4.88	6.05	8.89	11.94	15.10	18.87	21.84	25.48	36.32
7.5	3.29	6.23	7.54	9.10	13.13	17.65	22.78	27.95	32.26	36.77	50.78
10.0	4.56	8.47	10.23	12.20	17.41	23.14	29.42	36.02	41.36	46.38	62.83
12.5	5.83	10.53	12.69	15.17	21.31	27.96	34.78	42.65	48.64	53.84	71.57
15.0	7.05	12.55	15.24	18.05	25.00	32.25	39.64	48.40	54.71	59.69	77.40
17.5	8.20	14.28	17.69	20.71	28.10	35.83	43.58	53.02	59.30	64.13	80.91
20.0	9.34	16.01	20.24	23.32	31.05	38.87	47.16	57.29	63.25	68.02	83.38
22.5	10.39	17.55	22.78	25.67	33.77	41.52	50.71	60.88	66.49	71.30	84.72
25.0	11.43	19.26	25.54	28.07	36.64	44.11	54.46	64.36	69.57	74.40	86.01
27.5	12.39	20.79	27.63	30.02	39.10	46.47	57.77	67.56	72.28	77.22	87.13
30.0	13.31	22.33	29.38	31.86	41.41	48.66	60.63	70.40	74.81	79.54	88.16
32.5	14.09	23.54	30.65	33.43	43.39	50.73	63.18	72.66	76.95	81.30	89.03
35.0	14.74	24.77	31.56	34.90	45.16	52.75	65.36	74.67	78.77	82.72	89.86
37.5	15.16	25.72	31.98	35.97	46.52	54.67	67.03	76.22	80.23	83.82	90.51
40.0	15.69	26.69	32.71	37.23	48.09	56.58	68.59	77.37	81.30	84.61	91.13
42.5	16.04	27.47	33.31	38.31	49.62	58.42	70.17	78.34	82.12	85.34	91.70
45.0	16.45	28.50	34.15	39.58	51.11	60.34	71.56	79.27	82.80	86.02	92.23
47.5	16.98	29.41	35.10	40.80	52.49	62.23	72.90	80.15	83.43	86.69	92.80
50.0	17.82	30.57	36.54	42.38	54.10	64.11	74.23	81.04	84.01	87.33	93.37
52.5	18.76	31.82	38.02	43.93	55.40	66.01	75.40	81.93	84.73	88.01	94.02
55.0	20.02	33.47	39.83	45.76	57.11	67.90	76.57	82.85	85.47	88.68	94.61
57.5	21.39	35.20	41.68	47.61	59.02	69.76	77.78	83.82	86.26	89.39	95.21
60.0	22.99	37.35	43.80	49.80	61.20	71.62	78.93	84.80	87.10	90.09	95.73
62.5	24.63	39.68	45.92	51.92	63.45	73.53	80.12	85.79	88.01	90.76	96.27
65.0	26.20	42.29	48.31	54.38	66.10	75.41	81.35	86.82	88.88	91.44	96.68
67.5	27.79	44.82	50.69	57.03	68.63	77.33	82.65	87.86	89.78	92.13	97.11
70.0	29.80	47.54	53.33	59.93	71.24	79.26	83.99	88.88	90.66	92.79	97.47
72.5	32.43	50.33	56.12	62.78	73.77	81.15	85.39	89.93	91.56	93.48	97.80
75.0	35.71	53.49	59.24	65.95	76.34	83.06	86.82	90.99	92.46	94.18	98.06
77.5	39.87	57.21	62.84	69.32	78.96	84.99	88.37	92.07	93.38	94.88	98.31
80.0	44.60	61.80	67.19	72.89	81.56	86.91	89.87	93.15	94.31	95.60	98.53
82.5	49.97	67.02	72.00	76.71	84.16	88.87	91.45	94.28	95.28	96.37	98.77
85.0	55.74	72.85	77.10	80.77	86.90	90.79	93.02	95.35	96.20	97.10	99.02
87.5	62.09	78.67	82.16	84.88	89.60	92.65	94.54	96.37	97.06	97.76	99.27
90.0	68.79	84.00	86.80	88.75	92.11	94.45	95.94	97.32	97.83	98.36	99.51
92.5	75.98	88.81	90.93	92.30	94.51	96.21	97.23	98.17	98.52	98.89	99.71
95.0	83.06	93.19	94.60	95.48	96.74	97.90	98.38	98.92	99.12	99.34	99.87
97.5	90.17	97.08	97.91	98.40	98.82	99.12	99.41	99.60	99.69	99.76	100.00

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First- through fourth-quartile storms combined; storm duration 12 to 24 hours											
2.5	1.50	1.92	2.25	2.88	6.25	7.87	8.25	10.69	12.49	14.69	20.89
5.0	2.93	5.04	6.32	7.77	12.55	15.89	18.06	22.30	25.25	28.65	37.13
7.5	4.37	8.15	10.41	12.67	18.77	23.72	27.33	33.00	36.91	41.30	51.35
10.0	5.82	11.22	14.47	17.66	25.00	31.15	35.57	42.09	46.84	51.99	62.97
12.5	7.24	14.21	18.50	22.66	31.01	37.85	42.69	49.34	54.70	60.34	71.63
15.0	8.57	16.80	21.98	27.19	36.28	43.72	49.00	55.28	60.83	66.54	77.52
17.5	9.68	18.86	24.84	30.94	40.58	48.43	54.23	60.09	65.38	70.83	81.08
20.0	10.67	20.60	27.14	33.97	44.09	52.25	58.86	64.35	69.16	74.12	83.59
22.5	11.61	21.93	28.77	36.04	46.70	55.14	63.01	68.49	72.53	76.86	85.42
25.0	12.32	22.91	29.76	37.04	48.37	57.29	66.57	72.67	75.92	79.51	86.98
27.5	12.81	23.91	30.71	37.70	49.65	58.80	69.38	76.46	79.21	82.24	88.55
30.0	13.22	24.96	31.57	38.23	50.52	59.72	71.30	79.44	82.06	84.80	90.24
32.5	13.52	25.88	32.34	38.58	51.07	59.97	72.34	81.43	84.32	87.06	91.87
35.0	13.84	26.90	33.26	39.16	51.55	60.28	72.89	82.42	85.93	88.88	93.34
37.5	14.30	27.82	34.20	39.87	51.91	60.41	73.08	82.64	86.77	90.07	94.47
40.0	14.99	28.74	35.22	40.73	52.19	60.71	73.10	82.70	87.06	90.74	95.27
42.5	15.84	29.62	36.32	41.67	52.60	61.26	73.16	82.80	87.18	91.12	95.77
45.0	16.83	30.46	37.40	42.58	53.07	62.08	73.53	82.90	87.30	91.30	96.03
47.5	17.81	31.25	38.39	43.47	53.59	62.60	74.05	83.00	87.53	91.46	96.16
50.0	18.99	32.52	39.52	44.49	54.46	63.50	74.77	83.40	87.93	91.67	96.31
52.5	20.49	34.16	40.90	45.76	55.67	64.49	75.71	83.77	88.49	91.97	96.46
55.0	22.22	36.20	42.69	47.39	57.27	65.87	76.82	84.67	89.11	92.34	96.61
57.5	24.28	38.74	44.83	49.64	59.26	67.65	77.97	85.53	89.75	92.75	96.81
60.0	26.61	41.35	47.14	52.07	61.46	69.98	79.04	86.29	90.36	93.16	97.01
62.5	29.21	43.76	49.53	54.66	63.75	72.21	80.22	87.09	90.96	93.56	97.20
65.0	31.64	45.93	51.72	57.04	66.07	74.57	81.49	87.88	91.54	93.95	97.40
67.5	34.21	48.12	53.68	59.25	68.27	76.65	82.74	88.66	92.14	94.34	97.60
70.0	36.87	50.26	55.70	61.22	70.36	78.53	84.02	89.35	92.73	94.73	97.78
72.5	39.58	52.89	58.10	63.41	72.53	80.18	85.36	90.17	93.31	95.12	97.97
75.0	41.85	55.65	60.76	65.76	74.70	81.85	86.61	90.95	93.88	95.52	98.15
77.5	44.08	58.69	63.80	68.46	76.91	83.43	87.81	91.75	94.49	95.95	98.33
80.0	46.33	61.82	67.13	71.35	79.22	85.04	89.09	92.64	95.08	96.39	98.52
82.5	48.66	65.31	70.72	74.57	81.67	86.76	90.41	93.68	95.70	96.84	98.71
85.0	51.20	68.96	74.41	77.89	84.19	88.58	91.74	94.63	96.33	97.29	98.90
87.5	55.46	73.39	78.41	81.47	86.84	90.46	93.10	95.59	96.99	97.75	99.10
90.0	61.33	78.37	82.57	85.14	89.54	92.37	94.47	96.53	97.63	98.21	99.29
92.5	68.64	83.68	86.91	88.94	92.26	94.27	95.84	97.45	98.30	98.67	99.49
95.0	77.31	89.13	91.22	92.68	94.99	96.15	97.21	98.34	98.96	99.12	99.68
97.5	87.25	94.79	95.58	96.46	97.76	98.05	98.59	99.23	99.62	99.75	99.88

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First- through fourth-quartile storms combined; storm duration 24 to 72 hours											
2.5	1.15	1.71	2.06	2.52	4.18	6.17	8.83	11.68	14.55	17.56	24.95
5.0	2.23	4.06	4.87	5.91	8.82	12.81	17.63	22.99	27.19	31.30	40.66
7.5	3.27	6.23	7.44	8.98	13.10	18.71	25.43	33.09	38.32	43.34	54.30
10.0	4.21	8.09	9.62	11.61	16.78	23.67	31.96	41.72	47.76	53.49	65.45
12.5	4.95	9.52	11.35	13.75	19.81	27.57	36.99	48.27	54.74	61.32	73.82
15.0	5.61	10.66	12.83	15.56	22.25	30.34	40.57	52.64	59.09	66.47	79.10
17.5	6.16	11.47	13.98	17.00	24.12	32.11	42.78	55.45	61.64	69.68	82.37
20.0	6.68	12.29	15.12	18.42	25.75	33.52	44.41	57.24	63.06	71.70	84.51
22.5	7.25	13.05	16.24	19.79	27.28	34.60	45.36	57.91	63.20	72.20	85.54
25.0	8.02	14.01	17.44	21.22	28.84	35.60	46.12	58.42	63.25	72.26	85.82
27.5	8.86	15.18	18.74	22.64	30.45	36.97	47.15	59.07	63.27	72.30	85.86
30.0	9.73	16.59	20.19	24.22	32.12	38.73	48.59	59.77	63.49	72.38	85.90
32.5	10.78	18.03	21.65	25.72	33.81	40.51	50.29	60.68	63.98	72.44	85.93
35.0	11.82	19.61	23.23	27.36	35.47	42.43	52.47	62.31	65.15	72.50	85.97
37.5	12.74	21.00	24.81	28.97	37.06	44.33	54.71	64.06	66.58	72.57	86.00
40.0	13.61	22.25	26.30	30.65	38.76	45.94	56.59	65.86	68.33	73.40	86.04
42.5	14.65	23.49	27.83	32.30	40.57	47.36	57.99	67.42	69.97	74.66	87.21
45.0	15.75	25.02	29.68	34.29	42.41	49.10	59.20	68.89	71.63	76.72	88.48
47.5	17.32	26.97	31.88	36.44	44.48	51.17	60.54	70.17	73.25	78.54	89.41
50.0	19.48	29.64	34.38	38.83	46.75	53.47	62.19	71.65	74.99	80.08	90.19
52.5	21.94	32.98	37.54	41.54	49.00	56.10	64.23	73.37	76.76	81.54	90.83
55.0	24.11	36.28	40.64	44.31	51.24	58.88	66.77	75.65	78.98	83.25	91.61
57.5	25.91	39.02	43.27	46.86	53.71	61.49	69.52	78.00	81.23	84.94	92.54
60.0	27.32	41.15	45.34	49.20	56.08	63.81	72.02	80.37	83.40	86.69	93.73
62.5	28.14	42.75	47.20	51.34	58.34	66.10	74.30	82.51	85.40	88.37	94.98
65.0	28.70	43.70	48.39	53.03	60.37	68.12	76.32	84.33	87.15	89.95	96.14
67.5	29.75	44.83	49.70	54.68	62.31	70.07	78.11	85.81	88.55	91.31	96.99
70.0	31.07	46.31	51.28	56.32	63.98	71.82	79.56	87.12	89.87	92.56	97.65
72.5	32.46	48.21	53.26	58.11	65.61	73.55	80.84	88.12	90.92	93.47	98.01
75.0	34.33	50.37	55.44	60.04	67.28	75.03	81.97	88.99	91.76	94.21	98.21
77.5	36.73	53.06	58.10	62.37	69.31	76.66	83.12	89.85	92.55	94.83	98.29
80.0	39.39	56.09	61.07	65.01	71.49	78.24	84.18	90.64	93.25	95.36	98.38
82.5	43.04	59.72	64.56	68.18	74.13	80.17	85.53	91.48	93.89	95.83	98.44
85.0	47.80	63.80	68.43	71.72	77.08	82.36	87.11	92.51	94.63	96.37	98.58
87.5	53.76	68.53	72.80	75.75	80.47	84.95	88.95	93.65	95.48	96.95	98.76
90.0	60.88	73.73	77.56	80.17	84.17	87.77	91.03	94.89	96.38	97.57	98.99
92.5	69.50	79.62	82.63	84.91	88.16	90.86	93.32	96.25	97.33	98.26	99.24
95.0	79.12	86.16	87.85	89.76	92.17	93.97	95.65	97.65	98.32	98.99	99.51
97.5	89.40	93.03	93.19	94.75	96.30	97.15	98.08	99.10	99.32	99.55	99.77

Supplement 5. Trimmed and smoothed percentiles for empirical hyetograph analysis, 1959–86.—Continued

[The interval is the center of the percent-of-storm-duration interval; --, no data]

Interval	Percentile										
	10th	20th	25th	30th	40th	50th	60th	70th	75th	80th	90th
First- through fourth-quartile storms combined; storm duration 0 to 72 hours											
2.5	1.08	2.04	2.58	3.34	4.69	6.37	7.81	10.30	12.16	14.66	21.60
5.0	2.35	4.32	5.47	6.84	9.74	13.58	16.97	21.38	24.48	28.12	37.57
7.5	3.59	6.56	8.32	10.27	14.68	20.49	25.56	31.57	35.63	40.20	51.55
10.0	4.82	8.78	11.16	13.68	19.47	26.83	33.19	40.38	45.16	50.47	63.04
12.5	5.92	10.85	13.80	16.85	23.94	32.42	39.68	47.57	52.72	58.62	71.66
15.0	6.92	12.77	16.23	19.72	27.91	37.21	45.23	53.41	58.54	64.61	77.38
17.5	7.80	14.43	18.29	22.14	31.01	41.00	49.56	57.96	62.97	68.83	80.89
20.0	8.60	15.99	20.23	24.32	33.59	44.11	53.16	61.80	66.74	72.25	83.32
22.5	9.31	17.38	21.89	26.21	35.63	46.55	55.92	65.02	69.84	74.94	85.01
25.0	10.06	18.75	23.51	28.07	37.35	48.54	58.09	67.80	72.62	77.28	86.35
27.5	10.87	20.11	25.00	29.79	38.88	50.23	59.80	70.07	75.06	79.47	87.66
30.0	11.70	21.51	26.51	31.41	40.52	51.68	61.22	71.87	76.92	81.38	88.96
32.5	12.51	22.77	27.81	32.85	42.01	52.90	62.34	73.12	78.10	82.81	90.18
35.0	13.35	24.09	29.22	34.30	43.56	54.27	63.76	74.21	79.02	84.02	91.29
37.5	14.16	25.27	30.47	35.54	44.99	55.49	65.16	75.15	79.64	84.83	92.25
40.0	14.96	26.51	31.85	36.89	46.42	56.80	66.62	76.11	80.22	85.47	93.05
42.5	15.78	27.58	33.21	38.24	47.68	58.03	67.98	77.06	80.86	86.03	93.72
45.0	16.71	28.90	34.80	39.80	49.13	59.31	69.33	78.12	81.72	86.61	94.24
47.5	17.89	30.35	36.44	41.44	50.66	60.49	70.35	79.07	82.56	87.09	94.64
50.0	19.41	32.28	38.33	43.33	52.45	61.97	71.60	80.06	83.51	87.72	94.92
52.5	21.16	34.45	40.32	45.28	54.39	63.51	72.89	81.15	84.53	88.42	95.18
55.0	22.94	36.99	42.49	47.39	56.57	65.39	74.37	82.30	85.61	89.20	95.40
57.5	24.82	39.38	44.67	49.56	58.80	67.56	76.05	83.52	86.75	90.06	95.70
60.0	26.62	41.64	46.83	51.75	61.09	69.85	77.89	84.82	88.01	91.04	96.06
62.5	28.29	43.62	49.00	53.94	63.38	72.11	79.55	86.10	89.22	91.97	96.47
65.0	29.86	45.38	50.95	56.07	65.59	74.32	81.14	87.25	90.31	92.83	96.90
67.5	31.76	47.16	52.88	58.23	67.77	76.38	82.65	88.36	91.31	93.60	97.32
70.0	33.75	49.16	54.81	60.32	69.87	78.21	84.02	89.37	92.17	94.27	97.68
72.5	36.00	51.52	56.94	62.47	71.97	80.00	85.35	90.35	92.90	94.84	97.97
75.0	38.51	54.15	59.24	64.72	73.98	81.61	86.69	91.30	93.55	95.38	98.19
77.5	41.45	57.17	62.09	67.30	76.10	83.25	88.02	92.25	94.20	95.89	98.38
80.0	44.54	60.42	65.22	70.08	78.24	84.84	89.34	93.15	94.86	96.39	98.56
82.5	48.24	64.13	68.85	73.31	80.60	86.54	90.72	94.08	95.54	96.87	98.72
85.0	52.41	68.26	72.78	76.77	83.07	88.30	92.09	94.98	96.22	97.34	98.90
87.5	57.68	72.90	77.10	80.53	85.81	90.21	93.49	95.87	96.93	97.81	99.09
90.0	64.02	77.90	81.55	84.43	88.65	92.18	94.92	96.75	97.61	98.28	99.29
92.5	71.71	83.28	86.22	88.48	91.66	94.22	96.37	97.65	98.29	98.75	99.49
95.0	80.43	88.80	90.85	92.47	94.62	96.21	97.81	98.54	98.96	99.22	99.70
97.5	90.01	94.42	95.53	96.53	97.64	98.21	99.26	99.44	99.65	99.70	99.92

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