RAINFALL DISPERSION DIAGRAM

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INTRODUCTION

- RAINFALL DISPERSION DIAGRAMS ARE AN IMPORTANT TOOL IN THE ANALYSIS OF RAINFALL DISTRIBUTIONS
- IT PROVIDES A RATIONAL ESTIMATE OF RAINFALL VARIABILITY
- ANNUAL AS WELL AS MONTHLY RAINFALL FIGURES ARE PLOTTED
- RAINFALL FIGURES ARE PLOTTED WITH THE HELP OF A BAR DIAGRAM
- MONTHS ARE PLOTTED ON THE X-AXIS AND RAINFALL FIGURES ARE PLOTTED ON Y-AXIS

DATA ANALYSIS

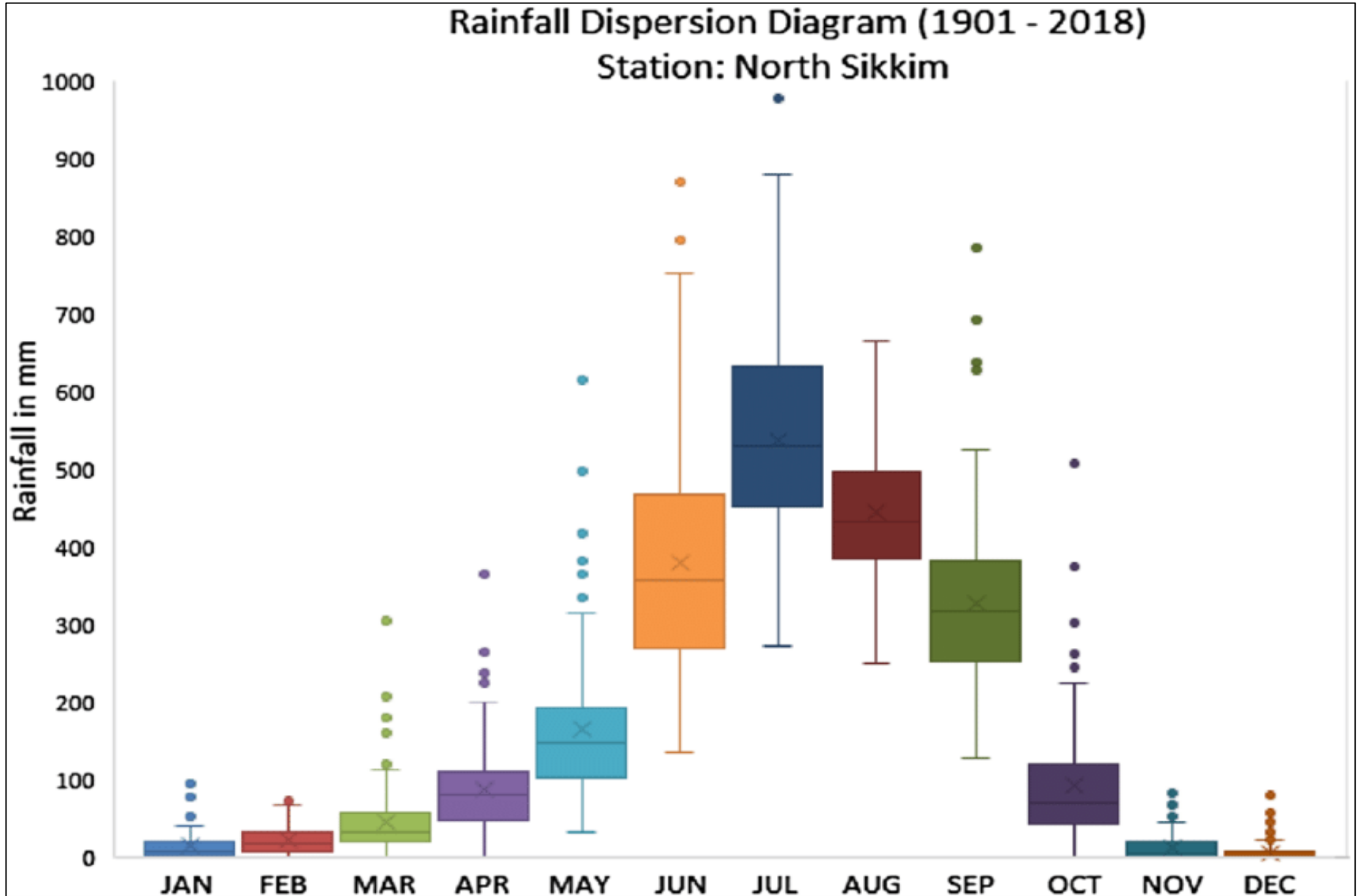
- THE RAINFALL FIGURES ARE ARRANGED IN ASCENDING ORDER
- QUARTILE VALUES ARE THEN CALCULATED FROM THE DATA
- QUARTILES ARE PARTITION VALUES THAT DIVIDE A DATA INTO FOUR EQUAL PARTS
- THERE ARE 3 QUARTILES- LOWER/FIRST QUARTILE(Q1), SECOND QUARTILE/MEDIAN (Q2) AND UPPER/THIRD QUARTILE (Q3)
- DISPERSION DIAGRAMS ARE PREPARED FOR MONTHLY AND ANNUAL FIGURES WHERE QUARTILES ARE CONSIDERED

DETERMINING QUARTILE VALUES

- QUARTILE OBSERVATIONS ARE ASCERATINED BY THE FORMULAE
- Q1=(n+1)4^{TH} OBSERVATION
- Q2=2(n+1)4^{TH} OBSERVATION
- Q3=3(n+1)4^{TH} OBSERVATION
- WHERE n= NO. OF OBDERVATIONS
- IF THE OBSERVATION IS A WHOLE NUMBER, THE VALUES ARE DETERMINED FROM THE DATA OF RAINFALL FIGURES ARRANGED IN ASCENDING ORDER
- BUT IF THE OBSERVATION COMES AS FRACTION THEN BY USING SIMPLE INTERPOLATION THE QUARTILE VALUES ARE DETERMINED
- FOR DETERMINING THE VARIABILITY OF RAINFALL, COEFFICIENT OF QUARTILE DEVIATION IS CALCULATED FROM THE QUARTILE VALUES OBTAINED

PLOTTING THE RAINFALL DISPERSION

- THE HIGHEST AND LOWEST RAINFALL FIGURES OF EACH MONTH FOR ALL THE YEARS GIVEN ARE NOTED
- THE BAR FOR EACH MONTH BEGINS WITH THE LOWEST RAINFALL FIGURE AND ENDS WITH THE HIGHEST RAINFALL FIGURE
- THE 3 QUARTILE VALUES OF EVERY MONTH IS ALSO PLOTTED
- THE BAND THUS FORMED BY PLOTTING THE QUARTILE VALUES IN EACH BAR FOR EACH MONTH INDICATES VARIABILITY OF RAINFALL
- THUS BOTH THE CALCULATED VALUES AS WELL AS THE DIAGRAM CAN DEPICT DISPERSION IN RAINFALL


Rainfall Dispersion Diagram (1901 - 2018)
Station: North Sikkim
Rainfall in mm
1000
900
800
700
600
500
400
300
200
100
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC