

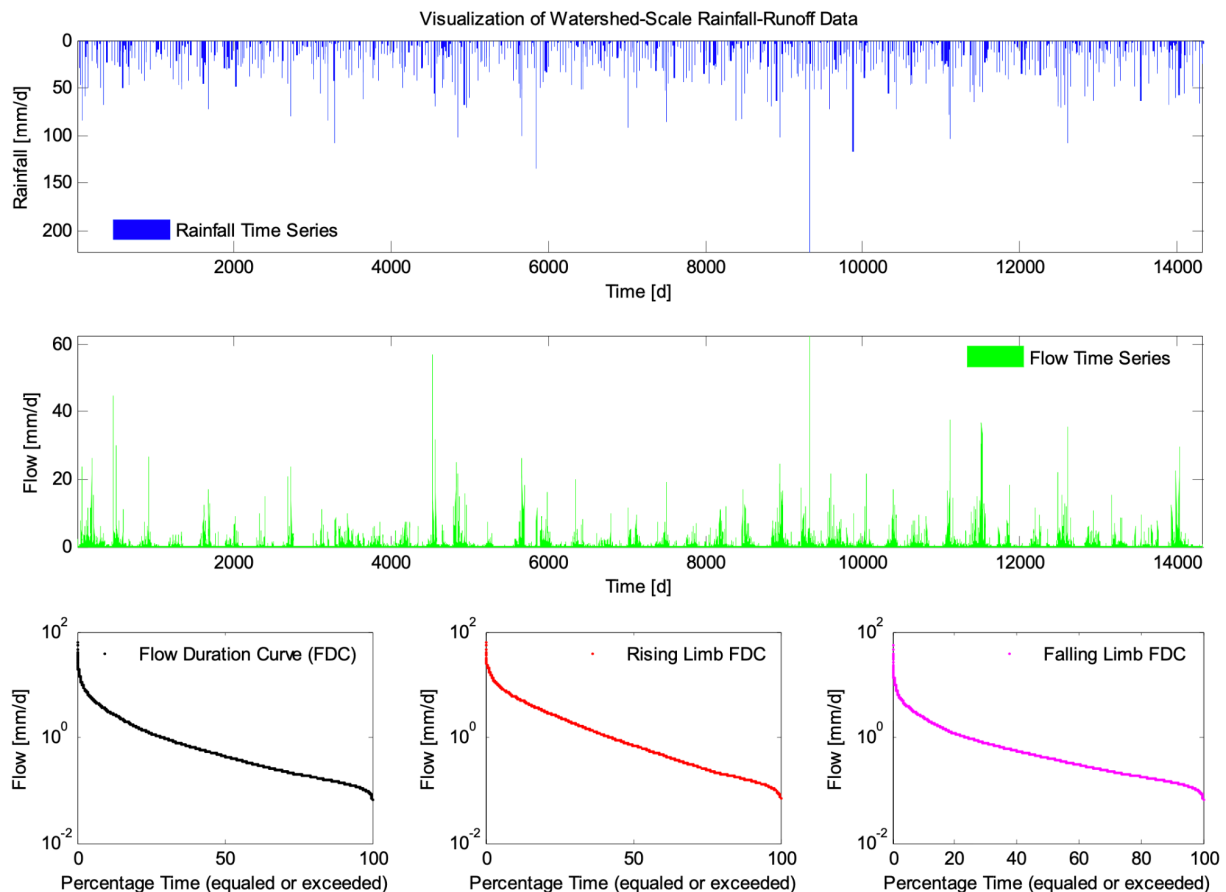
Rainfall-Runoff Lab Assignment

The data file LeafRiverData.txt has been provided.

<https://raw.githubusercontent.com/waterprofessor/wre/main/data/LeafRiverData.txt>

The Leaf River is part of a US watershed of almost 2000 km². Columns 2 and 12 are streamflow and rainfall respectively. Use the two columns in this lab assignment.

Your task is to create the following plot:



- The top plot is a bar plot of the rainfall using a command to plot it upside down.
- The middle plot is an area plot of the streamflow data.
- The bottom plot is a series of three so-called 'flow duration curves FDCs'. FDCs are plots of daily (as in this case) or monthly flow data mainly for water resources or reservoir management purposes. They plot the percentage (or fraction) of time a certain flow level is equaled or exceeded and provide a nice view of the flow regime. To plot them one simply ranks all flow values from highest to lowest and assigns ranks for each

flow value. The highest value gets a rank of 1, the second highest a rank of 2, etc., and the lowest flow value gets a rank of N (N = total number of flow values). The percentages are then calculated by dividing each rank by N and multiplying it by 100.

- The three plots at the bottom differ with respect to which flow values were included. The bottom left plot includes all flow values, the one in the middle includes only those on the rising part of the hydrograph, and the one on the bottom right only those on the falling part of the hydrograph.