

UNIVERSITY OF BOLOGNA
Sustainable Design of Water Resources Systems

Exercise – Computation of the flow duration curve for the Po River at Pontelagoscuro

At the river cross section of the Po River at Pontelagoscuro mean daily river flows were observed since Jan 1st, 1920 up to Dec 31st, 2009. Data, expressed in cubic meters per second, are reported in the text file “po-pontelagoscuro.txt”. Data observed on Feb 29th of leap years have been removed.

The student is kindly requested to:

- 1) Estimate the average flow duration curve by pooling all the observations together therefore obtaining a high temporal resolution representation.
- 2) Estimate the flow duration curve by computing the average curve from yearly flow duration curves. Yearly curves and average curve should be visualized into a graph.
- 3) Compare the average flow duration curve with the high resolution curve in a graph..
- 4) Draw in a graph the average curve and the curves that are obtained by subtracting and adding to the average the value of the standard deviation.