CE462A: Project 01

Assume that as a hydraulic engineer you have to decide the design discharge (50 year return period flood) at five sites where your organization is constructing bridges. Hundred years of annual maximum daily discharge measured at the five sites are available (see the link below). Prepare a *formal report* for your organization detailing the methods and your estimate of the design discharge at each site.

Guidelines

a) Consider annual maximum daily discharge to be a random variable. Evaluate the suitability of Exponential, Gaussian, Lognormal, Gamma, Pearson Type-III and Gumbel distributions for each site.

b) Perform Chi-squared, Kolmogorov-Smirnov and Anderson-Darling goodness-of-fit tests at 5% significance level and select the best distribution.

c) A formal report should have a title page, executive summary, methodology, results (separately for each site), and a summary section tabulating the main results.

d) In the result section, provide descriptive statistics for the observed data using graphs and numerical measures.

e) 10% bonus marks will be given if you can provide an uncertainty estimate for the calculated design discharge at each site.

f) The data for each student is available at the following link - `https://tinyurl.com/ce462aP`

g) Submit a soft-copy of your report in the classroom portal before the due date.