

STOR 834: Spring 2025

Lecture 5: 01/23/2025

In this class we covered:

- (a) Review of Section 1.2.4.2; deriving the GPD from the point process model, correcting an error I made in the previous lecture;
- (b) Section 1.3.1 on MLEs for the GEV model; particular focus on observed versus expected information, asymptotics of maximum likelihood; the delta method for estimating nonlinear functions of the parameters, and Bayesian methods. Illustration of these results for Jenkinson's dataset of annual maximum flood stages in Hartford (R code on the course website; I have uploaded the complete code since the class).
- (c) Section 1.3.2 on maximum likelihood estimation for the GPD and Poisson-GPD models.

Next up: in the class of 01/28/25 I intend to cover the r -largest order statistics method for both single samples and multiple samples; illustration for a dataset of sea levels in Venice.