

BONUS ASSIGNMENT ON EXTREME VALUE THEORY (Part 1):

Go further with your notebook!

Analyze the independency of the sampled observations using POT with threshold=2.5 and declustering time=48h and threshold=1.5 and declustering time=12h.

1. Fit a Poisson distribution function to the number of exceedances per year for each pair threshold-declustering time (*hint: use Scipy library*).
2. Compare the parameter of the fitted Poisson distribution with the mean and variance of the observations.
3. Assess the goodness of fit by using a Chi square test (*hint: use Scipy library*).
4. Plot the histogram of the observations and the probability mass function of the fitted distribution.
5. Both pairs threshold-declustering time provide number of exceedances per year reasonable represented by a Poisson distribution?