Talk 9: Jean-François Dupuy (INSA Rennes)

Title: Bayesian estimation of the tail index of a heavy-tailed distribution with censored data

Abstract. Bayesian estimation of the tail index of a heavy-tailed distribution is addressed when data are randomly right-censored. Maximum a posteriori and mean posterior estimators are constructed for various prior distributions of the tail index. Convergence of the posterior distribution of the tail index to a Gaussian distribution is established. Finite sample properties of the proposed estimators are investigated via simulations. Tail index estimation requires selecting an appropriate threshold for constructing relative excesses. A Monte Carlo procedure is proposed for tackling this issue. Finally, if time permits, the proposed estimators will be illustrated on a medical dataset. This is a joint work with Abdelkader Ameroui and Kamal Boukhetala (University of Science and Technology, Algiers, Algeria).