

Session IPS202 organized by Kirstin STROKORB: **Extreme Value Statistics**

Speaker: Marie Kratz (ESSEC Business School, CREAR)

Title: Combining ML & EVT for modelling multimodal nonhomogeneous data

Abstract: A hybrid model is proposed for heavy-tailed phenomena, combining a Gaussian Mixture Model (GMM) with a Generalized Pareto component (GPD). It generalizes a previous algorithmic method by Debbabi et al. (2017), with an automatic detection of the tail threshold. While the main advantage of the GMM is the flexibility it affords when dealing with multimodal distribution, introducing a GPD component allows one to evaluate the tail of the distribution, unlike a pure GMM. Illustrations on various datasets are given. This is a joint work with A. Char.

Keywords: Gaussian mixture model; GPD; Heavy tail; Machine learning; Multimodal distribution;