Abstract:

In this talk we investigate the parametric inference for the linear fractional stable motion in high and low frequency setting. The symmetric linear fractional stable motion is a three-parameter family, which constitutes a natural non-Gaussian analogue of the scaled fractional Brownian motion. It is fully characterized by the scaling parameter $\sigma > 0$, the self-similarity parameter $H \in (0, 1)$ and the stability index $\alpha \in (0, 2)$ of the driving stable motion. The parametric estimation of the model is based upon the limit theory for stationary increments Lévy moving average processes that has been recently studied in Basse-O'Connor, Lachieze-Rey and M. Podolskij (2016). More specifically, we combine power variation statistics and empirical characteristic functions to obtain consistent estimates of (σ, α, H). We present the law of large numbers and fully feasible central limit theorems.

References:

A. Basse-O'Connor, R. Lachieze-Rey and M. Podolskij (2016): Limit theorems for stationary increments Lévy driven moving averages. To appear in Annals of Probability.