

Mikko Pakkanen

Simulating ambit processes using the hybrid scheme

In collaboration with Mikkel Bennedsen, Claudio Heinrich, Asger Lunde, and Almut Veraart

The hybrid scheme is an efficient method for simulation of ambit processes that have been specified using kernel functions with power-law behaviour near the origin. Such kernel functions produce ambit processes whose realisations are rougher or smoother, in terms of Hölder regularity, than those of a Brownian motion/sheet, which is a useful feature for example in stochastic modelling of financial market volatility or turbulent velocity fields in physics. In my talk, I will first review the original one-parameter hybrid scheme for Brownian semistationary processes, developed in collaboration with M. Bennedsen and A. Lunde [arXiv:1507.03004]. I will then discuss some recent joint work with C. Heinrich and A. Veraart that aims to adapt the hybrid scheme for two-parameter, volatility-modulated moving-average random fields.