

CHANGE-POINT ANALYSIS FOR ROUGH FRACTIONAL VOLATILITY MODELS

BIBINGER, MARKUS

Philipps-Universität Marburg, Germany, bibinger@uni-marburg.de

VETTER, MATHIAS *Christian-Albrechts-Universität zu Kiel, Germany*

JIRAK, MORITZ *Humboldt-Universität zu Berlin, Germany*

change-point methods; fractional volatility process; high-frequency data; minimax-optimal testing;

We are interested in changes of the stochastic volatility process of an Itô semi-martingale, the latter being discretely observed over a fixed time horizon. We review a local change-point problem under high-frequency asymptotics (presented at 2015's Dynstoch meeting), for which the key example is identification of volatility jumps. Now, we study a global change-point problem to identify changes in the regularity of the volatility process. In particular, this allows to infer changes in Hurst parameters of fractional stochastic volatility processes. We discuss asymptotic minimax-optimal tests for this problem.

References

- [1] Bibinger, M., Jirak, M., Vetter, M. (2016) *Nonparametric change-point analysis of volatility*, arxiv: 1502.00043.