



Der Wissenschaftsfonds.



JKU
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SFB Colloquium Series

It is a pleasure to announce a guest lecture with the title

On fractional Brownian motion, Gaussian moving average, overlapping observations, and interest rate modelling

SPEAKER: Friedrich Hubalek, Vienna University of Technology

TIME: Wednesday, 2nd April 2014, 14:00 pm

LOCATION: Science Park II, S2 219, University Linz

Motivated by an empirical observation we study short rate models driven by fractional Brownian motion and more general Gaussian moving average processes.

We first give some concrete examples and discuss the asymptotic behavior of the variance function and asymptotic self-similarity.

We then demonstrate, that such models can be defined pathwise, without referring to Young-integrals or other notions of stochastic integration. Furthermore we recapitulate, that the martingale modelling approach leads to an arbitrage-free model, where discounted zero bond prices are martingales, even when the short-rate is not a semimartingale.

Next we review results by Fink, Klueppelberg, and Zaehele on Vasicek-type models, which are based on the (finite history) Molchan-Golosov representation of fractional Brownian motion and investigate an analogous approach based on the (infinite history) Mandelbrot-Van Ness representation.

Finally we return to the empirical estimation of the variance function and give some concrete results on the estimation error using overlapping and non-overlapping observations.

The lecture will be followed by a general discussion.

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