Dokumenttyp: Zeitschriftenaufsatz
Autor(en) des Beitrags: Müller, G., Czado, C.
Titel des Beitrags: Stochastic volatility models for ordinal valued time series with application to finance
Abstract: In this paper we introduce a new class of models, called OSV, by combining an ordinal response model and the idea of stochastic volatility. Corresponding time series occur in high-frequency finance when the stocks are traded on a coarse grid. For parameter estimation we develop an efficient Grouped Move Multigrid Monte Carlo (GM-MGMC) sampler. This sampler is based on a scale transformation group, whose elements operate on the random samples of a certain conditional distribution. Also volatility estimates are provided. For illustration, we apply our new model class to price changes of the IBM stock. Dependencies on covariates are quantified and compared with theoretical results for such processes.

Stichworte: Grouped move; High-frequency finance; Markov chain Monte Carlo; Multigrid Monte Carlo; Price process; Transformation group

Zeitschriftentitel: Statistical Modelling
Jahr: 2009
Band: 9
Heft / Issue: 1