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FAKULTÄT
FÜR MATHEMATIK, INFORMATIK
UND NATURWISSENSCHAFTEN

Fachbereich Mathematik

Kolloquium über Mathematische Statistik und Stochastische Prozesse

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High-frequency analysis of parabolic stochastic PDEs

Abstract:

We consider the problem of estimating stochastic volatility for a class of second-order parabolic stochastic PDEs. Assuming that the solution is observed at high temporal frequency, we use limit theorems for multipower variations and related functionals to construct consistent nonparametric estimators and asymptotic confidence bounds for the integrated volatility process. As a byproduct of our analysis, we also obtain feasible estimators for the regularity of the spatial covariance function of the noise.

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