

Estimation of the volatility for stochastic differential equations

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(joint work with N. Yoshida)

Abstract

We consider both the maximum contrast estimator and the Bayes estimator for an unknown parameter in the volatility of stochastic differential equations under the situation where high frequency data are observed on a fixed interval. In order to show asymptotic properties of the estimators, we give the polynomial type large deviation inequality for the statistical random field based on a local Gaussian approximation. Moreover, asymptotic mixed normality and moment convergence of the estimators are obtained.