



Quasi-likelihood analysis and Bayes-type estimators of an ergodic diffusion plus noise

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Abstract

We consider adaptive maximum-likelihood-type estimators and adaptive Bayes-type ones for discretely observed ergodic diffusion processes with observation noise whose variance is constant. The quasi-likelihood functions for the diffusion and drift parameters are introduced and the polynomial-type large deviation inequalities for those quasi-likelihoods are shown to see the asymptotic properties of the adaptive Bayes-type estimators and the convergence of moments for both adaptive maximum-likelihood-type estimators and adaptive Bayes-type ones.

Keywords Bayes-type estimation · Convergence of moments · Diffusion processes · Observation noise · Quasi-likelihood analysis · Stochastic differential equations

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