Efficient pointwise estimation based on discrete data in ergodic nonparametric diffusions

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Abstract

A truncated sequential procedure is constructed for estimating the drift coefficient at a given state point based on discrete data of ergodic diffusion process. A nonasymptotic upper bound is obtained for a pointwise absolute error risk. The optimal convergence rate and a sharp constant in the bounds are found for the asymptotic pointwise minimax risk. As a consequence, the efficiency is obtained of the proposed sequential procedure.