Minimum density power divergence estimator for diffusion processes

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Abstract In this paper, we consider the robust estimation for a certain class of diffusion processes including the Ornstein–Uhlenbeck process based on discrete observations. As a robust estimator, we consider the minimum density power divergence estimator (MDPDE) proposed by Basu et al. (Biometrika 85:549–559, 1998). It is shown that the MDPDE is consistent and asymptotically normal. A simulation study demonstrates the strong robustness of the MDPDE.