

Statistical problems on the delays measure density in small diffusion processes

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Abstract

We consider statistical problems on the density of delays measure in a small diffusion processes when the density has a truncated series Fourier expansion. Following the classical theory of Ibragimov-Hasminskii theory (1981) and the books of Y. Kutoyants (1994,2004) we study the local asymptotic normality condition of these experiments and give the main properties of convergence, asymptotic normality of the maximum likelihood and Bayes estimates of the Fourier coefficients. Then we use the kernel type nonparametric estimator of the trend to give the main properties of the minimum distance estimates (Millar 1984) of the Fourier coefficients of the density of the delays measure and we end this study by estimating the number of the Fourier coefficients in the truncated expansion of the density.