



Mathematics > Statistics Theory

Estimation for Lévy processes from high frequency data within a long time interval

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In this paper, we study nonparametric estimation of the Lévy density for Lévy processes, with and without Brownian component. For this, we consider n discrete time observations with step Δ . The asymptotic framework is: n tends to infinity, $\Delta = \Delta_n$ tends to zero while $n\Delta_n$ tends to infinity. We use a Fourier approach to construct an adaptive nonparametric estimator of the Lévy density and to provide a bound for the global \mathbb{L}^2 -risk. Estimators of the drift and of the variance of the Gaussian component are also studied. We discuss rates of convergence and give examples and simulation results for processes fitting in our framework.

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