

Efficient estimation for SDEs with jumps from discrete observations

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Abstract

In this talk we consider the problem of estimating the drift coefficient of a Lévy-driven Ornstein-Uhlenbeck process from discrete observations. Our method is based on discretization of the continuous-time maximum likelihood estimator. Since the likelihood function is a functional of the unknown continuous part of the process, we use a truncation method to filter jumps from the data. Then, we prove that under suitable conditions on the discretization scheme and the jump part of the process the discretized MLE with jump filtering is asymptotically normal and efficient in the sense of Hájek-Le Cam. Finally, we discuss a simulation study to assess the finite sample behavior of the estimator and demonstrate its practical tractability.