

High-Frequency Statistics for a Semimartingale with Jump Activity varying with time

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When a discretely observed process has jumps with infinite activity, and in particular when the jumps are not summable, so far all available statistical methods for estimating the spot or integrated volatility, or the degree of jump activity, or the spot or integrated intensity of jumps, suppose that the degree of activity of jumps, also called Blumenthal-Gettoor index, is a constant. In this talk we propose a method which allows the degree of activity to vary with time, and even to be a (reasonable) stochastic process by itself. In this setting, we sketch how one can estimate the integrated volatility with the same efficient rate and asymptotic variance as when we have a continuous semimartingale. If time permits, we will also explain how to estimate the spot volatility or the spot degree of activity and the associated intensity.