



## Quadratic covariation estimation of an irregularly observed semimartingale with jumps and noise

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This talk presents a central limit theorem for a pre-averaged version of the realized covariance estimator for the entire quadratic covariation of a discretely observed semimartingale with noise. The semimartingale possibly has jumps, while the observation times show irregularity, non-synchronicity, and some dependence on the observed process. It is shown that the observation times' effect on the asymptotic distribution is quite different from the case of the realized covariance in a pure semimartingale setting.

**Keywords:** jumps; microstructure noise; non-synchronous observations; quadratic covariation; time endogeneity.