

## Abstract

Multivariate jumps (multi-jumps) occurring simultaneously in stock prices and associated with major financial news are correlated with sudden spikes of the variance risk premium and determine an increase in the stock variances and correlations. I contribute to the existing econometric theory of multi-jump detection in several directions. First, in a multivariate stochastic volatility jump-diffusion setting, I introduce a novel nonparametric technic, which allows to determine how many and which stocks jump together. Secondly, I propose to construct a multi-jump based index to measure the market tranquility. Finally, I show that the multi-jump detection theory could be extended to include market microstructure noise by using pre-averaging methods.