# Point Process in Finance: new results from an old acquaintance

*Alan De Genaro Dario* [§][*]

§ Securities, Commodities and Futures Exchange - BM&FBOVESPA

## Abstract

This paper presents an overview of of the state-of-the-art in the econometric literature on the modelling of so-called financial point processes. Financial Point Processes comprise random arrival of specific financial trading events, such as transactions, cancellations etc. After discussing the strengths and weakness of most popular techniques I propose modelling the financial point processes by a Doubly Stochastic Poisson Process (DSPP) where the intensity process belongs to a class of affine diffusions. For any intensity process from this class we derive an analytical expression for probability distribution functions of the corresponding DSPP. A specification of our results is provided in a particular case where the intensity is given by one-dimensional Feller process and its parameters are estimated by Kalman filtering for high frequency transaction data.

[*] *e-mail:* adario@bvmf.com.br