Ornstein-Uhlenbeck superposed models applied to modeling earthquake seismic data and other high frequency data

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This work is devoted to the study of modeling geophysical data. We propose a stochastic differential equation arising on the superposition of independent Ornstein-Uhlenbeck processes driven by a Levy non-Gaussian process.

Superposition of independent Ornstein-Uhlenbeck processes offer analytic flexibility and provide a class of continuous time processes capable of exhibiting long memory behavior.

The superposition of Ornstein-Uhlenbeck processes is applied to geophysics by fitting the model with real earthquake data series.

Applications to other high frequency data will be also discussed.