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| Independent study title | MULTIFRACTAL MODEL – PARSIMONIOUS MODEL FOR VOLATILITY IN FINANCIAL MARKET |
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ABSTRACT

The nature have exhibit a self-replication in every scales. This came in to a scale invariant property that we can find in nature. This paper extend the volatility clustering model based on the scale invariant property. Combined with such a simple but elegance of Poisson arrival process, Markov switching process that allow maximum likelihood estimation. We called this model “Markov Switching Multifractal model” or MSM.

The first part is to test both in and out of sample between MSM against GARCH and MSGARCH. Then I trying to find such a practical use case of the model.

Keywords: Fractals, volatility modeling, GARCH, Markov switching model, MSGARCH, VIX, imply volatility, realized volatility, regime switching model