On simulation of rough Volterra stochastic volatility models

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Rough Volterra volatility models are a progressive and promising field of research in derivative pricing. Although rough fractional stochastic volatility models already proved to be superior in real market data fitting, techniques used in simulation of these models are still inefficient in terms of speed and accuracy. This talk aims to present the accurate tools and techniques that could be used also in nowadays largely emerging pricing methods based on machine learning. In particular we compare three widely used methods: the Cholesky method, Hybrid scheme and the rDonsker scheme for simulation of the rBergomi model and for a more general αRFSV model. We also comment on implemention of variance reduction techniques, especially we show the obstacles of the so called turbocharging technique, whose importance is sometimes overestimated in the literature. To overcome these obstacles we suggest several modifications.