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**Deep learning and Path-dependent PDEs for rough local stochastic volatility**

While rough volatility is now part of the common quantitative finance landscape, its enhanced version, adding a local volatility component, is yet to be grasped. The classical Markovian setup has attracted a lot of attention, whether through theoretical existence results or numerical analysis. However, the rough case (where the stochastic volatility component is driven by a Volterra process) creates further complications. We investigate here the pricing side of the problem. Writing the pricing problem as a solution to a path-dependent PDE, we show how to discretise it to a high-(but finite-)dimensional PDE; this is then tackled through the use of deep learning techniques, by simulating the corresponding BSDE. This is a joint work with Mugad Oumgari.