

# Enhancing rough forward variance models with VIX smiles

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Recently proposed models for the forward variance and the spot value of the SP500 based on fractional Volterra processes - specifically, the rough Bergomi model of [Bayer, Gatheral, Friz 2016] - are not able to account for smiles of options on VIX. Indeed, the VIX variable induced by this model is essentially log-normal: any calibration to the VIX market instruments is, then, out of reach. We will discuss directions, building on the work of Bergomi [2008, 2016], to overcome this limitation.