IMPLIED LÉVY VOLATILITY

WIM SCHOUTENS

This paper introduces the concept of implied Lévy volatility, hereby extending the intuitive Black-Scholes implied volatility into a more general context. More precisely, Lévy implied time and space volatility are introduced and a study of the shape of implied Lévy volatilities is made. Model performance is studied by analyzing delta-hedging strategies for the Normal Inverse Gaussian and the Meixner model, both qualitatively and on historical time-series of the S&P500. It is shown that under such parameter settings the model performs systematically better.