Calibration of Variance Gamma Model for option pricing

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One of the crucial problems in option pricing is model calibration.
We consider the case of the Variance Gamma Model (VGM) introduced to account for kurtosis and skewness of log-return distribution in alternative to the original Black and Scholes. Our aim is to assess a picture of the limits of validity of model calibration strategies and extraction of relevant information to actual option pricing modeling in quantitative finance.
In particular, we discuss a Simulated Annealing (SA) optimum finding algorithms for calibration and compare it with standard local routine such as Levenberg-Marquard (LM).
The SA turns out to be more efficient and faster than the LM, as its calibration of the VGM is much more stable and, thus, the implied prices fluctuations drastically reduced.