

Abstract: This paper explores the link between stochastic volatility models and implied volatility data. We develop a closed-form bivariate expansion of the shape characteristics of the implied volatility surface generated by a stochastic volatility model. This makes it possible to analyze the impact of the various parameters and/or structures of a stochastic volatility model on the implied volatility surface. Conversely, we also construct an "implied stochastic volatility model" designed to fit by construction the implied volatility data.