Alexandre Antonov and Timur Misirpashaev* (Timur_Misirpashayev@ml.com), Merrill Lynch, 4 World Financial Center, 9th Floor, New York, NY 10080, and Vladimir Piterbarg.

Markovian projection on stochastic volatility models.

We develop a systematic approach to the reduction of dimensionality of smile-enabled models by projecting them onto a displaced version of the two-dimensional Heston process. The projection is the key for deriving efficient, analytical approximations to European option prices in such models. This is a further development of the method of Markovian projection previously used for projecting on the displaced-diffusion process (with skew but without smile). The method is derived in a generic form and has a wide range of suitable applications. Examples for spread and basket options are given. (Received September 04, 2007)