

ON A CLASS OF STOCHASTIC IMPLIED VOLATILITY MODELS

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Stochastic Implied volatility models aim at constructing a pair of stochastic processes, the price process and the implied volatility process, such that the Black-Scholes formula holds true for all strikes and maturities. There is no result that assures existence of such model in general. We show a class of such processes where existence follows by construction, however parameters are given as solutions of some differential equations and explicit formulae are hard to find.