

**Title: Integrated variance and the Heston model**

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If the volatility is stochastic, stock price returns and European option prices depend on the time average of the variance, i.e the integrated variance, not on the path of the volatility. This integrated variance can be easily computed from the underlying volatility process. Assuming that the stock price follows the Heston model, we compute the integrated variance and use it to price some exotic options. Due to the convexity of the Black-Scholes formula with respect to volatility, pricing and hedging with Black-Scholes-type formulas and the implied volatility often lead to inaccuracies if the volatility is stochastic. Theoretically, this problem can be avoided by using Hull-White-type option pricing and hedging formulas and the integrated variance.