

Local risk-minimization for Barndorff-Nielsen and Shephard models

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We aim to obtain an explicit representation of locally risk-minimizing for Barndorff-Nielsen and Shephard models (BNS model, for short). Locally risk-minimizing is a very well-known hedging method for contingent claims in a quadratic way. Its theoretical aspects have been developed to a high degree. On the other hand, the necessity of researches on its explicit representations has been increasing. On the other hand, the BNS model is an Ornstein-Uhlenbeck type stochastic volatility model capturing some stylized facts of financial time series. Thus, we calculate locally risk-minimizing of call and put options for the BNS model by using Malliavin calculus.