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Summary: We innovatively employ the Bayesian computation with empirical likelihood (BCel) to estimate the parameters of two kinds of stochastic volatility models: SV-N, SV-T. Extensive simulation study results show that the proposed method is feasible and effective. Compared with the traditional method based on Markov Chain Monte Carlo, BCel is more efficient. Finally, the proposed method is applied to model the log returns of Shanghai securities composite index with SV-T model.

MSC:
62C12 Empirical decision procedures; empirical Bayes procedures
91B70 Stochastic models in economics
62P05 Applications of statistics to actuarial sciences and financial mathematics

Keywords:
empirical likelihood; Bayesian computation; stochastic volatility (SV) model