Ancillarity-Sufficiency Interweaving Strategy (ASIS) and Its Applications in Bayesian MCMC Computation

Teruo Nakatsuma

Faculty of Economics, Keio University

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Abstract

Although Markov chain Monte Carlo (MCMC) is the indispensable tool for Bayesian statisticians, its sampling efficiency heavily relies on the choice of sampling algorithm as well as parameterization of the model. As a simple yet versatile technique to improve the efficiency of MCMC, Yu and Meng (2011) proposed a novel approach called an ancillarity-sufficiency interweaving strategy (ASIS). In this talk, we first review ASIS in several elementary examples and then briefly describe our current projects which utilize ASIS, including hierarchical Bayes modeling of panel data and intraday SV models of high frequency financial transaction data.