

國立政治大學統計學系

學術演講

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題目：A New Monte Carlo Method for Computing Marginal Likelihoods

時間：民國 105 年 12 月 26 日 (星期一) 下午 1:30

地點：國立政治大學逸仙樓 050101 教室

摘要：

Evaluating the marginal likelihood in Bayesian analysis is essential for model selection. Estimators based on a single Markov chain Monte Carlo sample from the posterior distribution include the harmonic mean estimator and the inflated density ratio estimator. We propose a new class of Monte Carlo estimators based on this single Markov chain Monte Carlo sample. This class can be thought of as a generalization of the harmonic mean and inflated density ratio estimators using a partition weighted kernel (likelihood times prior). We show that our estimator is consistent and has better theoretical properties than the harmonic mean and inflated density ratio estimators. In addition, we provide guidelines on choosing optimal weights. Simulation studies were conducted to examine the empirical performance of the proposed estimator. We further demonstrate the desirable features of the proposed estimator with two real data sets: one is from a prostate cancer study using an ordinal probit regression model with latent variables; the other is for the power prior construction from two Eastern Cooperative Oncology Group phase III clinical trials using the cure rate survival model with similar objectives.

歡迎參加

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