



Bayesian Statistical Analysis of Big Data and Complex Data

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Message from the Guest Editor

Advances in technologies including communications, mobile devices, digital sensors and DNA sequencing lead to not only large amounts but also complicated structures of data and change the environment of statistical analysis. Big data can be described by the size of the data, the speed of incoming and outgoing data, the sources and types of data and the messiness and trustworthiness of data. Regarding the analysis of big data, the tremendous volume and the speed of incoming and outgoing data hinder statistical analysis. Further, the complicated structure of data with more parameters in the statistical model makes the statistical analysis even harder. Bayesian approaches have an additional burden to model the parameters with the prior distributions. To cope with the difficulties of Bayesian statistical analysis, many efficient computational methodologies are proposed and expected that encompass the dimension reduction methods, the integrated nested Laplace approximations, the hidden Markov chains, the multi-chain Markov chain Monte Carlo, the multi-stage Monte Carlo and the sequential Monte Carlo methods.





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Message from the Editor-in-Chief

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