Department of Decision Sciences

Statistics Seminar

Hybrid Methods in Bayesian Inference

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Thursday, 31 May 2012
12:30pm Room 3-E4-SR03 Via Rontgen 1 Milano

Abstract

In the presence of models with complicated dependence structures, of multidimensional nuisance parameters, or of model misspecification, frequentist likelihood and Bayesian inference may encounter some theoretical and computational difficulties. In order to take into proper account such difficulties, it is possible to consider surrogates of the original likelihood, which produce the wide class of the so-called pseudo-likelihoods, including the marginal, conditional, integrated, partial, profile and its modifications, quasi-, empirical, composite likelihoods.
The aim of this talk is to provide a critical overview on the properties and applications of the so-called hybrid posterior distributions, i.e. posterior distributions derived from the combination of a pseudo-likelihood function with suitable prior information. The use of a pseudo-posterior distribution can be usefully used to eliminate nuisance parameters, to obtain robustness properties with respect to the presence of outliers or model misspecification, to reduce some assumption on the model, and to deal with complex models.

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