Pseudo–likelihoods for Bayesian inference

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Abstract

In the presence of models with complicated dependence structures, of multidimensional nuisance parameters, or of model misspecifications, both frequentist and Bayesian inference may encounter some theoretical and computational difficulties, since the ordinary likelihood may be too difficult or even impractical to compute. 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. In this talk we review the properties and applications of the so-called pseudo-posterior distributions, i.e. posterior distributions derived from the combination of a pseudo-likelihood function with suitable prior information. Some examples are illustrated.

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