

OUTLIER ROBUST POSTERIOR PREDICTIVE CHECKS

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The object of this paper is a robust modification of posterior predictive checks. This method uses posterior predictive p -values that represent a useful tool for Bayesian model validation. In this paper there are presented some forms of posterior predictive p -values which are elaborated to be robust to outliers by means of accomodation. Our proposal is to use modified likelihood for estimation of posterior predictive distribution of parameter and to derive a robust form of discrepancy measure. Also, in a computer environment there are realized the algorithms for their computation of robust posterior predictive p -values and it is performed a simulation study, which emphasizes the efficiency and usefulness of the approach in comparison to the classical posterior predictive p -values.

Keywords: *Discrepancy measure, Markov chain Monte Carlo, model checking, modified likelihood, PCOut algorithm, posterior predictive p -value, predictive distribution, robust diagnostics, weighted likelihood, weighting scheme.*

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