

# Bayesian model choice via mixture interpretation

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**Abstract.** We consider model choice from a Bayesian perspective. An alternative to the construction of the posterior probability that a given hypothesis is true is to consider the models under comparison as components of a mixture model. (A related idea has recently considered by O'Neill and Kypraios (unpublished, 2013).) We thus estimate the probability of a given model via a mixture estimation step, comparing the impacts of various prior modeling on the weights and of the opposition between common and foreign parameters on the various components. We also point out the interesting behavior of the proportion estimators when the number of observations grows. Our current results show that for small sample sizes there are substantial differences between the posterior estimations but that the speed of convergence is similar to the one for the posterior probability.

**KEY WORDS:** *Mixture model, Bayesian estimation, Gibbs sampling, Convergence*