Bayesian model comparison is generally done (when it is done at all) through Bayes factors, comparing the integrated likelihoods for the models. This approach has many difficulties, and this talk describes an alternative approach through the posterior distribution of the model deviances, which avoids these difficulties. The approach is illustrated with the comparison of two simple models, and of many latent class models for the classification of psychiatric patients.

Finally we show the relevance of the approach to the identification of coherent social groups in a much analysed social network.

The background to this approach to Bayesian model comparison is fully described in Aitkin "Statistical Inference: an Integrated Bayesian/Likelihood Approach", Chapman and Hall/CRC Press 2010.

For directions please refer to http://www.ics.uci.edu/about/visit/
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