

BAYESIAN METHODS FOR MODEL SELECTION AND RELATED PROBLEMS

Gonzalo García-Donato (Universidad de Castilla-La Mancha)

The study and development of Bayesian methodology for problems with model uncertainty has been a strategic line of research of the VaBar group during the last 10 years. Our ideas have been greatly influenced and inspired by prominent statisticians like Susie Bayarri and James Berger and it is our aim to continue this tradition in the future. In a first part of the talk an overview of the work done during these years will be summarized. This part will include the presentation of the paradigm of assigning objective priors for model selection through sensible criteria and the current functionalities of the R package BayesVarSel. Then, in a second part, we introduce problems on which we are currently working including the $n \ll p$ case, priors over the model space for ANCOVA models, missing data and the analysis of GLM models. Finally, we present a number of open problems that we pretend undertake in the future that could be potentially interesting for fruitful collaborations.