Applied Bayesian statistics

ECTS : 4

Volume horaire : 18

Description du contenu de l'enseignement :

We shall put in practice classical models for statistical inference in a Bayesian setting, and implement computational methods. Using real data, we shall study various models such as linear regression, capture-recapture, and a hierarchical model. We shall discuss issues of model building and validation, the impact of the choice of prior, and model choice via Bayes Factors. The implementation shall use several algorithms: Markov Chain Monte Carlo, importance sampling, Approximate Bayesian Computation. The course is based on the free software R.
Practical information: Large portions of the course are devoting to students coding. Students should bring their own laptop, which must have R installed before the first session; I strongly suggest installing RStudio (free) as well.

Compétence à acquérir :

Modelling and inference in a Bayesian setting

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