

CIM – Course on Bayesian Methods, 10 hp

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Goal

In order to pass the student should

- be able to carry out statistical research by using Bayesian methods and computer intensive tools in R.
- understand of the philosophy of Bayesian models and their specific model assumptions
- be able to interpret the results obtained by Bayesian methods.

Literature

The course is based on the textbook published in Springer Texts in Statistics :
Christian P. Roberts
The Bayesian Choice
From Decision-Theoretic Foundations to Computational Implementation
ISBN 978-0-387-71598-8, second edition in paperback 2007

Course prerequisite

The knowledge given by standard base courses on statistical inference is required. Courses on computer intensive statistical methods and on inference theory are helpful, but they are no prerequisite.

Contents

Decision theoretic foundations, the minimaxity, the choice of prior distributions, conjugate families, Bayesian point estimation, Bayesian tests, MCMC, Gibbs sampler, Bayesian model choice, empirical Bayes extension.

Organization

24 Lectures with computer presentations. The GNU software R will be used.

Examination

5 Compulsory home works, work in teams up to 3 students is strongly recommended.

Home examen week 13

Contact

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WELCOME!!!