

PhD School in Statistics – XXIV cycle

Short course

COMPUTATIONAL TOOLS FOR BAYESIAN MODEL CHOICE

by

Prof. Christian P. Robert

CEREMADE, Université de Paris-Dauphine

Wednesday April 22, 2009

11.00 – 13.00

14.30 – 16.30

Aula Cucconi

Topics

1. Bayesian model choice and importance sampling solutions
2. Cross-model solutions for model comparison
3. Nested sampling approximation to evidence
4. Approximative Bayesian computation (ABC) for Gibbs random fields

Abstract

This course is dedicated to the techniques of computation specialized in the estimation of posterior probability and marginal likelihoods, based on Monte Carlo methods adapted to these problems. There indeed exists a large variety of solutions taking advantage of the presence of several densities in the integrals to be determined like harmonious means, defensive sampling, Chib's and Skilling's methods. The determination of "optimal" solutions, as well as the implementation of these techniques in statistical specific problems as the comparison of mixtures of distributions, will be treated in detail.

http://www.stat.unipd.it/agenda/seminari_cicli