Department of Decision Sciences - Bocconi University
Via Roentgen 1 - 20136 Milano
Tel. 02-58365632 - Fax 02-58365630

SEMINAR

"Bernstein Von Mises theorem for linear functionals of the density"

Judith Rousseau
(Université Paris Dauphine)

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Room C – Via Sarfatti 25 - 20136 Milano

Abstract:

In this work we study the existence of the so called Bernstein von Mises
property of the posterior distribution of a linear functional of the density -
typically the cumulative distribution function at a given point - in a non-
parametric context. In other word we determine the asymptotic posterior
distribution of such a quantity and give conditions for this posterior distribution function
to be asymptotically Gaussian, centered at the empirical value.
When such a property is verified, there is strong matching between frequentist
and Bayesian apporaches since α credible intervals are also asymptotically α confidence intervals.
Bernstein Von Mises theorem are known to hold in smooth parametric models and are known to be
a problem in non-pramatric models.
After giving a general theorem, we study more specifically sieve log-linear models.