

Prix / Prize
CRM-SSC 2004-2005

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Le mercredi 14 décembre 2005 / *Wednesday, December 14, 2005*
16 h / *4:00 p.m.*

Centre de recherches mathématiques
Université de Montréal
Pavillon André-Aisenstadt
2920, chemin de la Tour
Salle / *Room* 1355

Titre / Title:

Contributions to Statistical Analysis in Finite Mixture Models

Résumé / Abstract:

The job of a statistician is to infer the probability model from which the data were generated. Often, based on the relevant scientific background, a family of probability distributions describing the data is suggested, and the statistical problem reduces to the question of which member in the family best describes it. The answer can be sought via the principle of likelihood, which picks the one that is judged most likely; or by the method of moments so that the moments of the selected model match the moments of the data to some level. In addition, statisticians must also examine the uncertainties in these answers; how far is our guess from the truth? How certain are you with this educated guess?

For a large number of classical probability models, standard techniques for quantifying uncertainty are well developed. For finite mixture models, the mission is still far from accomplished. The parameter space of the finite mixture models has a complex topology; two markedly distinct mixture models in certain respect can be very close in another respect. Some of the consequences include the characteristically slower convergence rate for parameter estimation and complex limiting distributions for the maximum likelihood ratio statistics.

In this presentation, the speaker will give a brief introduction of the statistical issues related to the applications of finite mixture models. In particular, the presentation will focus on the research contributions of the author in the past years in this area and the problems he is currently working on.

Une réception suivra la conférence au Salon Maurice l'Abbé (salle 6245).
There will be a reception after the lecture in Salon Maurice-l'Abbé (Room 6245).