

Séminaire de Probabilités et Statistiques

Mardi 01 Décembre à 14h
Salle de Conférences

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*Infinite mixture models : from (some) theory to
(some) applications*

We introduce large classes of infinite mixture models encountered in Bayesian nonparametrics, review some fundamental properties, and present a broad range of challenging applications. Our general approach relies on Bayesian nonparametric prior distributions whose realizations enjoy (almost surely) the following two key properties : (i) they are discrete, and (ii) they are probability distributions. The first allows us to write realizations as sums of Dirac masses at random variables (locations), while the second implies that the random weights in the sums add up to one, hence providing appropriate mixing distributions where the cluster labels are identified by the locations. We conclude by presenting applications of infinite mixture models to survival analysis, species models and ecological science.