



Contribution ID: 35

Type: **not specified**

Judith Rousseau- Bayesian nonparametric estimation of a density living near an unknown manifold

Wednesday, October 5, 2022 11:30 AM (1 hour)

In high dimensions it is common to assume that the data have a lower dimensional structure. In this work we consider that the observations are iid and with a distribution whose support is concentrated near a lower dimensional manifold. Neither the manifold nor the density is known. A typical example is for noisy observations on an unknown low dimensional manifold.

We consider a family of Bayesian nonparametric density estimators based on location - scale Gaussian mixture priors and we study the asymptotic properties of the posterior distribution. Our work shows in particular that non conjugate location - scale Gaussian mixture models can adapt to complex geometries and spatially varying regularity. This talk will also review the various aspects of mixtures of Gaussian for density estimation. Joint work with Clément Berenfeld (Dauphine) and Paul Rosa (Oxford)