

Seminario Aleatorio

Sesión 268

Bayesian Non-parametric Models for Seasonal Marked Point Processes: An Application to Hurricane Occurrences and Their Wind Intensity and Damages.

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Resumen

We consider point processes for random events which are only observed in a given season. We develop a nonparametric Bayesian methodology to study the dynamic evolution of a seasonal marked point process intensity. We assume the point process is a non-homogeneous Poisson process, and propose a nonparametric mixture of Beta distributions for dynamically evolving temporal Poisson process intensities. Nonparametric dependence structure is built through a dependent Dirichlet process prior for the dynamically evolving mixing distributions. We extend the nonparametric model to incorporate time-varying marks resulting in flexible inference for both the seasonal point process intensity and for the conditional mark distribution. The motivating application involves the analysis of hurricane landfalls with reported damages along the U.S. Gulf and Atlantic coasts from 1900 to 2010. We describe the evolution of hurricane intensity, as well as the respective maximum winds speed and associated damages

Viernes 21 de noviembre 2014, 13:00 hrs.

Salón: B- 1, Plantel Río Hondo

El Seminario Aleatorio está destinado tanto a profesores como a estudiantes, por lo que el Departamento de Estadística agradece a los profesores que colaboren invitando a sus alumnos a estas sesiones.