INSTITUTO TECNOLÓGICO AUTÓNOMO DE MÉXICO

Departamento Académico de Estadística
Río Hondo # 1, Col. Progreso Tizapán,
Ciudad de México, C.P. 01080, México

Seminario Aleatorio

Sesión 417

A Spatiotemporal Gamma Shot Noise Cox Process

Roberto Casarin

Ca' Foscari University of Venice, Italy
https://sites.google.com/view/robertocasarin

Abstract

A new discrete-time shot noise Cox process for spatiotemporal data is proposed. The random intensity is driven by a dependent sequence of latent gamma random measures. Some properties of the latent process are derived, such as an autoregressive representation and the Laplace functional. Moreover, these results are used to derive the moment, predictive, and pair correlation measures of the proposed shot noise Cox process. The model is flexible but still tractable and allows for capturing persistence, global trends, and latent spatial and temporal factors. A Bayesian inference approach is adopted, and an efficient Markov Chain Monte Carlo procedure based on conditional Sequential Monte Carlo is proposed. An application to georeferenced wildfire data illustrates the properties of the model and inference.

Working paper: https://arxiv.org/abs/2308.08481

Viernes 10 de noviembre de 2023,
13:00 horas de CdMx

Transmisión en línea:
https://itam.zoom.us/j/94446870531?pwd=cnBuakIwWDFmR2lvZkxLSU5hcFQyUT09

Meeting ID: 944 4687 0531
Passcode: 774808

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