ITAM — Departamento Académico de Estadística

El Departamento de Estadística del ITAM

anuncia la siguiente sesión de

EL SEMINARIO ALEATORIO

que con el título

Bayesian Analysis of Extreme Events with Threshold Estimation

Impartirá

Dani Gamerman
Instituto de Matemáticas
Universidad Federal de Rio de Janeiro

RESUMEN

The aim of this paper is to analyze extremal events using Generalized Pareto Distributions (GPD), considering explicitly the uncertainty about the threshold. Current practice empirically determines this quantity and proceeds by estimating the GPD parameters based on data beyond it, discarding all the information available below the threshold. We introduce a mixture model that combines a parametric form for the center and a GPD for the tail of the distributions and uses all observations for inference about the unknown parameters from both distributions, the threshold included. Prior distribution for the parameters are indirectly obtained through experts quantiles elicitation. Posterior inference is available through Markov Chain Monte Carlo (MCMC) methods. Simulations are carried out in order to analyze the performance of our proposed model under a wide range of scenarios. Those scenarios approximate realistic situations found in the literature. We also apply the proposed model to a real dataset, Nasdaq 100, an index of the financial market that presents many extreme events. Important issues such as predictive analysis and model selection are considered along with possible modeling extensions.

Fecha: Viernes 4 de Febrero
Hora: 12:50 hrs.
Salón: Sala de Videos II - 2º. Piso Biblioteca

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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.

María F. Rojano Agraz
ITAM
Depto. Académico de Estadística
Rio Hondo # 1,
Col. Tizapán San Angel
C.P. 01000 México, D. F.
Tel. 5628-4000 ext. 3803
Fax 5628-4086