El Departamento de Estadística del ITAM

anuncia la siguiente sesión de

EL SEMINARIO ALEATORIO

que con el título

A BAYESIAN ALGORITHM FOR DETECTING MULTIPLE CHANGES OF VARIANCE IN A TIME SERIES

será impartida por

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ABSTRACT

Changes in variance are frequently found in economic or financial time series. Detecting variation or sudden changes in these time series is central to understanding and proper interpretation of their behavior. The majority of Bayesian literature considers only the possibility of a single structural break. When more than one break point is considered it is usually done by focusing on the detection of point of change one at a time becasuse of the heavy computational burden involved in looking for more than one simultaneously. In this paper we study the problem of detecting multiple changes of variance in a time series. We first consider a sequence of independent observations and later we apply the same procedure to an AR(1) series. We propose a procedure to detect these variance changes based on a dynamic programming algorithm. The problem of finding the most likely set of a break points is equivalently represented as that of finding the shortest path connecting two nodes on a suitable graph. An algorithm for solving this latter problem is presented.

Fecha: Jueves 10. de Junio Hora: 10:30 Lugar: Salón PB-1

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.