

# ***El Departamento de estadística del ITAM***

anuncia la siguiente sesión de

## ***EL SEMINARIO ALEATORIO***

que con el título

### ***A New Class of Power Transformations to Reduce Skewness or Approximate Normality***

será impartida por el

***Professor Richard A. Johnson  
University of Wisconsin-Madison***

#### ***Resumen***

Box and Cox(1964) proposed a class of power transformations to improve the approximation of normality. Although widely used, the Box-Cox family of transformations is limited to positive random variables or cases where a finite lower bound exists. Two alternative families, whose domain is the real line, have been suggested in the literature. However, each has a serious drawback so we propose a new class of power transformations. Its properties are investigated and its relation to a reduction in skewness is established. We study the large sample behavior of the estimated transformation in the single sample setting. Some preliminary results are stated for the regression problem. Finally, we study the new class of transformations in the context of robust estimation. We propose selecting the power parameter of the transformation to minimize a function of the imaginary part of the empirical characteristic function. In particular, we study the large sample behavior when the square of the imaginary part of the empirical characteristic function is integrated with respect to some weight function. To obtain our results, we develop a uniform strong law of large numbers for U-statistics.

***Fecha: Viernes 14 de Noviembre***

***Hora: 11:45-13:00***

***Lugar: Salón 304, Ro 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.*