For favour of posting

AMENDED

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

50th Anniversary Seminar Series

Professor Charles S. TAPIERO*
Professor Pierre VALLOIS**

*Department of Finance and Risk Engineering
New York University Tandon School of Engineering, New York

**Department of Mathematics
Universite de Lorraine, Institut de Mathematiques Elie Cartan, France

will give a talk

entitled

STATISTICAL AND RELATIVE RANDOMNESS: THE FRACTIONAL BROWNIAN BRIDGE AND STRICTLY STABLE DISTRIBUTIONS

Abstract

This paper introduces a statistical approach to fractional randomness and stochastic modeling. We show under general conditions that a fractional noise-randomness for a fractional index $1/2 < H < 1$, and defined relative to a uniform distribution, leads to a fractional Brownian Bridge randomness. As a result, processes underlying general and fractional distributions are defined explicitly. We analyze further their fractional properties, namely, their variance and covariance and obtain specific results for particular distributions including the fractional uniform and an exponential distribution. Subsequently, we demonstrate that for a fractional index $0 < H < 1/2$, the relative fractional distributions are defined by strictly stable distributions. The results we obtain have both practical and theoretical implications to the many applications of fractional calculus and in particular, when they are applied to modeling statistical problems where time scaling and randomness prime. This is the case in finance, insurance and risk models as well as in other areas of interest. The presentation conclude with a discussion on the effects of time scaling and randomness on both financial and risk models and their practical implications. These are important for the statistical estimate and study of fractional and stochastic models and their associated probability distributions.

on

Thursday, December 7, 2017

(Refreshments will be served from 10:45 a.m. outside Room 301 Run Run Shaw Building)

11:00 ~~p.m.~~ – 12:00 noon
a.m. at

Room 301, Run Run Shaw Building

Visitors Please Note that the University has limited parking space. If you are driving please call the Department at 3917 2466 for parking arrangement.

ALL INTERESTED ARE WELCOME