Seminar Series: Computational Finance Seminar

Date: Monday, March 6, 2017
Time: 4:30 – 5:20 p.m.
Location: REC 122

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Affiliation/Organization: Department of Mathematical Sciences, Kent State University

A DIFFUSION MODEL FOR COMPOSITIONAL DATA

Abstract: We present a class of stochastic processes in continuous time which take as values vectors with non-negative components adding up to 1, and show their use as models for compositions continuously changing in time. They are defined as solutions of a stochastic differential equation, in such a way that the invariant distribution is Dirichlet. The aggregation property of this distribution can be exploited to allow the study of compositions at different levels; for example, modeling the composition over time of a portfolio of stock shares at the sector, industry, or individual firm levels. We will discuss some aspects of inference for this model.