DEPARTMENT OF MATHEMATICAL SCIENCES

Statistics Seminar Series

Gavino Puggioni

University of Rhode Island

Dynamic Bayesian Nonparametric Spatio-temporal Point Process Models with Applications to Spread of Infectious Diseases in Wildlife

ABSTRACT: We propose a nonparametric method to estimate the intensity of a point process observed in space and time. The modeling procedure, treated as a dynamic density estimation problem, involves the specification of a prior based on a Dirichlet process mixture of bivariate normal distributions at each point in time. Temporal dependence is introduced through the atoms that evolve according to a dynamic linear model structure. The models compares favorably with other existing methods. An application to wildlife infectious disease spread and outbreak detection is provided to illustrate the methodology.

BIOGRAPHY: Gavino Puggioni earned his BA and MS in Economics at Bocconi University in Milan, Italy, and his MS and PhD in Statistics at Duke University. After postdoctoral experiences at University of North Carolina and at Emory University he joined the University of Rhode Island where he serves as an Assistant Professor of Statistics with joint appointment at the College of the Environment and Life Sciences. His main areas of interest include Bayesian methods and space-time modeling.

Monday, September 11, 2017
11:00AM-12:00PM
Stratton Hall 106