Department of Mathematical Sciences welcomes

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Stochastic Quasi-Likelihood for Case-Control Point Pattern Data

ABSTRACT:

We propose a novel stochastic quasi-likelihood estimation procedure for case-control point processes. Quasi-likelihood for point processes depends on a certain optimal weight function and for the new method the weight function is stochastic since it depends on the control point pattern. The new procedure also provides a computationally efficient implementation of quasi-likelihood for univariate point processes in which case synthetic control point process is simulated by the user. Under mild conditions, the proposed approach yields consistent and asymptotically normal parameter estimators. We further show that the estimators are optimal in the sense that the associated Godambe information is maximal within a wide class of estimating functions for case-control point processes. The effectiveness of the proposed method is further illustrated using extensive simulation studies and two data examples.

ABOUT THE SPEAKER:

Ganggang Xu is currently an assistant professor of Statistics in the department of Mathematical Sciences at Binghamton University – The State University of New York. He obtained his PhD in Statistics in 2011 from Texas A&M University and a B.S. in Statistics in 2006 from Zhejiang University, China.

April 27, 2018

Hosted by:
Prof. Zuofeng Shang

Tea begins at 3:00
in LD 259

Research Topic
begins at 3:30
in LD 229

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