Statistics and Actuarial Science Seminar

Title: Stein's method for exponential random graph models and kernelized goodness of fit

Speaker: Gesine Reinert (University of Oxford)

Date: Mon 26th April 2021 at 12:00PM

Location: Online

Abstract: Exponential random graph models are a key tool in network analysis but due to an intractable normalizing constant are difficult to manipulate. In this talk we shall use Stein's method to approximate these models by Bernoulli random graphs in "high temperature' regimes.

For assessing the goodness of fit of a model, often independent replicas are assumed. When the data are given in the form of a network, usually there is only one network available. If the data are hypothesized to come from an exponential random graph model, the likelihood cannot be calculated explicitly. Using a Stein operator for these models we introduce a kernelized goodness of fit test and illustrate its performance.

This talk is based on joint work with Nathan Ross and with Wenkai Xu.

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