



Assessing goodness of fit for network models

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(University of Oxford)

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Department of Statistics, Ludwigstr. 33, Room 144
and online via Zoom (Link)
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Networks are often used to represent complex dependencies in data, and network models can aid the understanding of such dependencies. These models can be parametric, but they could also be implicit, such as the output of an automated synthetic data generator. For assessing the goodness of fit of a model, often independent replicas are assumed. However, when the data are given in the form of a network, usually there is only one network available. Classical likelihood ratio methods may fail even in parametric models such as exponential random graph models, as due to an intractable normalising constant, the likelihood cannot be calculated explicitly. This talk will present some network models. We shall introduce a kernelized goodness of fit test (which is based on Stein's method), give performance guarantees, and illustrate its use. This talk is based on joint works with Nathan Ross and with Wenkai Xu.

Biography:

Gesine Reinert is Research Professor in the Department of Statistics at the University of Oxford, and a Fellow of the Alan Turing Institute. Her research includes probabilistic and statistical methods for network analysis, as well as applied probability – in particular Stein's method – and connections with machine learning methods. Gesine is a Fellow of the Institute of Mathematical Statistics.