



Contribution ID : 39

Type : **Contribution in Organized Session**

Bayesian estimation for partially observed networks and large component ERGM

martedì 2 maggio 2023 16:30 (15)

While exponential random graph models (ERGMs) are not necessarily suitable for large or sampled networks, there are instances where we would like to estimate ERGMs for networks that are partially observed or networks that are too large for regular estimation methods. There are a number of approximate likelihood-based approaches for large networks but assessing the accuracy of these approximate estimates arguably requires comparison with “exact” methods. We consider here a few approaches for Bayesian estimation of ERGMs that are exact in that they are simulation consistent in the MCMC sense. In particular we focus on parallelisation of the MCMC scheme for component ERGMs. These are ERGMs for networks with multiple components, such that the network scales not with the number of nodes but with the number of components. We provide an illustration using data on a large set of criminal actors obtained from a criminal intelligence agency

Keywords

ERGM, sampling, Bayesian estimation, Covert networks

Topics

- Statistical methods and models for network analysis

Primary author(s) : KOSKINEN, Johan (Stockholm University)

Presenter(s) : KOSKINEN, Johan (Stockholm University)

Session Classification : Statistical models for networks

Track Classification : Statistical models for networks