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# Exponential Random Graph Models (ERGM) using Statnet

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## Abstract

This workshop will provide an introductory tutorial on exponential-family random graph models (ERGMs) for social networks, emphasizing a hands-on approach to fitting these models to empirical data. The ERGM framework allows for the parametrization, fitting, and simulation from models that incorporate the complex dependencies within relational data structures, and provides an extremely general and flexible means of representing them. This session will provide a tutorial to ERGM modeling with statnet software in R.

Topics covered within this session include: an overview of the ERGM framework; defining and fitting models to empirical data; interpretation of model coefficients; goodness-of-fit and model adequacy checking; simulation of networks using ERG models; degeneracy assessment and avoidance; and modeling and simulation of complete networks from egocentrically sampled data. Attendees are expected to have had some prior exposure to R, but extensive experience is not assumed.

Prerequisites: Familiarity with basic descriptive network concepts and statistical methods for network analysis within the R/statnet platform is recommended. Attendees are expected to have had some prior exposure to R, but extensive experience is not assumed.

**Keywords:** ERGM, Statnet

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