1 Resources

Relevant literature

Websites

Other tools

Papers

- **ERGM and TERGM estimation from egocentrically sampled data**

Krivitsky, P. N. and M. Morris (2017). "Inference for social network models from egocentrically sampled data, with application to understanding persistent racial disparities in HIV prevalence in the US." Annals of Applied Statistics 11(1): 427-455.

Pavel N. Krivitsky, Martina Morris, Michał Bojanowski. (2022) Impact of survey design on estimation of exponential-family random graph models from egocentrically-sampled data,

Social Networks 69:22-34. https://doi.org/10.1016/j.socnet.2020.10.001

Carnegie, N. B., Krivitsky, P. N., Hunter, D. R., & Goodreau, S. M. (2015). An Approximation Method for Improving Dynamic Network Model Fitting. *Journal of Computational and Graphical Statistics*, *24*(2), 502–519. https://doi.org/10.1080/10618600.2014.903087

Klumb, C., Morris, M., Goodreau, S. M., & Jenness, S. M. (2023). Improving and Extending STERGM Approximations Based on Cross-Sectional Data and Tie Durations. *Journal of Computational and Graphical Statistics*, *33*(1), 166–180. https://doi.org/10.1080/10618600.2023.2233593

Papers

- MCMC diagnostics

Convergence Diagnostics for Markov Chain Monte Carlo (2020). Vivekananda Roy. Annual Review of Statistics and Its Application 7:387-412.

https://doi.org/10.1146/annurev-statistics-031219-041300

- GOF for ERGMs

Hunter, D. R., Goodreau, S. M., & Handcock, M. S. (2008). Goodness of Fit of Social Network Models. *Journal of the American Statistical Association*, *103*(481), 248–258.
https://doi.org/10.1198/016214507000000446

Papers

- Model degeneracy

Handcock MS. (2003) Assessing Degeneracy in Statistical Models of Social Networks. CSSS working paper 39. https://csss.uw.edu/node/4718

Schweinberger, M. (2011). Instability, Sensitivity, and Degeneracy of Discrete Exponential Families. *Journal of the American Statistical Association*, *106*(496), 1361–1370. https://doi.org/10.1198/jasa.2011.tm10747

Papers

- GW terms for better model specifications

Hunter DR. Curved Exponential Family Models for Social Networks. (2007) Social networks. 29(2):216-30. doi: 10.1016/j.socnet.2006.08.005. PubMed PMID: PMC2031865.

Hunter DR, Handcock MS. Inference in Curved Exponential Family Models for Networks. (2006) Journal of Computational and Graphical Statistics. 15(3):565-83. doi: 10.1198/106186006X133069.

Snijders, T.A.B., Pattison, P.E., Robins, G.L. and Handcock, M.S. (2006), New specifications for exponential random graph models. Sociological Methodology, 36: 99-153. https://doi.org/10.1111/j.1467-9531.2006.00176.x

Jonathan Stewart, Michael Schweinberger, Michal Bojanowski, Martina Morris. Multilevel network data facilitate statistical inference for curved ERGMs with geometrically weighted terms. (2019) Social Networks 59: 98-119. https://doi.org/10.1016/j.socnet.2018.11.003

Web Resources

- Statnet training workshops (https://statnet.org/workshops/)

[Egocentric Network Data Analysis with ERGMs](#)

[Extending ERGM Functionality within statnet: Building Custom User Terms](#)

Web Resources

- Michael Levy's Shiny app for exploring the gwdegree term

https://michaellevy.shinyapps.io/gwdegree/

This is a really great app for understanding how the two parameters in a gw- term (decay and coefficient) influence the resulting degree or esp distribution. He focuses on the gwdegree term, but gwesp behaves similarly (at least with respect to the esp distribution; it has a different effect on network structure generally).