

Research preprints to be submitted in 2024

Students and postdoctoral scholars funded by me are indicated by *. Students and postdoctoral scholars funded by others are indicated by **.

Bhadra*, Subhankar and **Michael Schweinberger**. *Characterizing direct and indirect causal effects when outcomes are dependent due to treatment and outcome spillover*. To be submitted to *The Annals of Statistics*.

Fritz*, Cornelius, Georg, Co-Pierre, Mele, Angelo and **Michael Schweinberger**. *A strategic model of software dependency networks*. The order of authors is alphabetical. To be submitted to *Management Science*.

Jeon, Minjeong and **Michael Schweinberger**. *An exploratory approach to individual progress based on time-dependent interaction maps*. To be submitted to *Psychological Methods*.

Research preprints under peer review

Students and postdoctoral scholars funded by me are indicated by *. Students and postdoctoral scholars funded by others are indicated by **.

Fritz*, Cornelius, **Schweinberger, Michael**, Bhadra*, Subhankar, and David R. Hunter. *A regression framework for studying relationships among attributes under network interference*. Under review by the *Journal of the American Statistical Association, Theory & Methods*.

Fritz*, Cornelius, Yuan, Yubai and **Michael Schweinberger**. *Hyperbolic latent space models for hypergraphs*. Under review by the *International Conference on Artificial Intelligence and Statistics (AISTATS)*.

Nandy**, Saikat, Holan, Scott H. and **Michael Schweinberger**. A socio-demographic latent space approach to spatial data when geography is important but not all-important. Under review by the *International Statistical Review*. **Invited**.

Stewart*, Jonathan R. and **Michael Schweinberger**. Pseudo-likelihood-based M -estimation of random graphs with dependent edges and parameter vectors of increasing dimension. Under review by *The Annals of Statistics*.

Accepted peer-reviewed and editor-reviewed research publications

Students and postdoctoral scholars funded by me are indicated by *. Students and postdoctoral scholars funded by others are indicated by **.

Grieshop**, Nicholas, Feng**, Yong, Hu, Guanyu and **Michael Schweinberger** (2024+).

A continuous-time stochastic process for high-resolution network data in sports. Accepted by *Statistica Sinica*. **Invited.**

Eli*, Sean and **Michael Schweinberger** (2024). Non-asymptotic model selection for models of network data with parameter vectors of increasing dimension. *Journal of Statistical Planning and Inference*, 233, 106173.

Jeon, Minjeong and **Michael Schweinberger** (2024). Latent process models for monitoring progress towards hard-to-measure targets, with applications to mental health and on-line educational assessments. *The Annals of Applied Statistics*, 18, 2123–2146. **Equal contributions. The order of authors is alphabetical.**

Schweinberger, Michael and Cornelius Fritz* (2023). Discussion of “A tale of two datasets: Representativeness and generalisability of inference for samples of networks” by Pavel N. Krivitsky, Pietro Coletti, and Niel Hens. *Journal of the American Statistical Association*, 118, 2225–2227. **Invited. Editor-reviewed.**

Schweinberger, Michael, Bomiriya**, Rashmi P., and Sergii Babkin* (2022). A semiparametric Bayesian approach to epidemics, with application to the spread of the coronavirus MERS in South Korea in 2015. *Journal of Nonparametric Statistics*, 34, 628–662.

Jin, Ick Hoon, Jeon, Minjeong, **Schweinberger, Michael**, Yun, Jonghyun, and Lizhen Lin (2022). Multilevel network item response modeling for discovering differences between innovation and regular school systems in Korea. *Journal of the Royal Statistical Society, Series C (Applied Statistics)*, 71, 1225–1244.

Park, Jaewoo, Jin, Ick Hoon, and **Michael Schweinberger** (2022). Bayesian model selection for high-dimensional Ising models, with applications to educational data. *Computational Statistics & Data Analysis*, 165, 1–20.

Schweinberger, Michael (2022). Discussion to: “Bayesian graphical models for modern biological applications” by Yang Ni, Veerabhadran Baladandayuthapani, Marina Vannucci, and Francesco C. Stingo. *Statistical Methods & Applications (Journal of the Italian Statistical Society)*, 31, 253–260. **Invited. Editor-reviewed.**

Jeon, Minjeong, Jin, Ick Hoon, **Schweinberger, Michael**, and Samuel Baugh** (2021). Mapping unobserved item-respondent interactions: A latent space item response model with interaction map. *Psychometrika*, 86, 378–403. **The first three authors made equal contributions. The order of the first three authors is alphabetical.**

Schweinberger, Michael, Stingo, Francesco C., and Maria P. Vitale (2021). Special issue on statistical analysis of networks. *Statistical Methods & Applications (Journal of the Italian Statistical Society)*, 30, 1285–1288. **Invited. Editor-reviewed.**

Schweinberger, Michael and Jonathan R. Stewart* (2020). Concentration and consistency results for canonical and curved exponential-family models of random graphs. *The Annals of Statistics*, 48, 374–396.

Schweinberger, Michael (2020). Consistent structure estimation of exponential-family random graph models with block structure. *Bernoulli*, 26, 1205–1233.

Schweinberger, Michael, Krivitsky, Pavel N., Butts, Carter T., and Jonathan R. Stewart* (2020). Exponential-family models of random graphs: Inference in finite, super, and infinite population scenarios. *Statistical Science*, 35, 627–662.

Schweinberger, Michael (2020). Statistical inference for continuous-time Markov processes with block structure based on discrete-time network data. *Statistica Neerlandica*, 74, 342–362.

Babkin*, Sergii, Stewart*, Jonathan R., Long**, Xiaochen, and **Michael Schweinberger** (2020). Large-scale estimation of random graph models with local dependence. *Computational Statistics & Data Analysis*, 152, 1–19.

Stewart*, Jonathan R., **Schweinberger, Michael**, Bojanowski, Michal, and Martina Morris (2019). Multilevel networks facilitate statistical inference for curved ERGMs with geometrically weighted terms. *Social Networks*, 59, 98–119.

- Schweinberger, Michael** (2019). Random graphs. *Wiley StatsRef: Statistics Reference Online*. Edited by Brian Everitt, Geert Molenberghs, Walter Piegorsch, Fabrizio Ruggeri, Marie Davidian, and Ron Kenett. **Invited. Editor-reviewed.**
- Schweinberger, Michael** and Pamela Luna** (2018). hergm: Hierarchical exponential-family random graph models. *Journal of Statistical Software*, 85, 1–39.
- Cao**, Ming, Chen, Yong, Fujimoto, Kayo, and **Michael Schweinberger** (2018). A two-stage working model strategy for network analysis under hierarchical exponential random graph models. *Proceedings of the 2018 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, 290–298. Acceptance rate: 15%.
- Schweinberger, Michael**, Babkin*, Sergii, and Katherine B. Ensor (2017). High-dimensional multivariate time series with additional structure. *Journal of Computational and Graphical Statistics*, 26, 610–622.
- Schweinberger, Michael** and Mark S. Handcock (2015). Local dependence in random graph models: Characterization, properties and statistical inference. *Journal of the Royal Statistical Society, Series B (Statistical Methodology)*, 77, 647–676.
- Schweinberger, Michael**, Petrescu-Prahova, Miruna, and Duy Q. Vu** (2014). Disaster response on September 11, 2001 through the lens of statistical network analysis. *Social Networks*, 37, 42–55.
- Vu**, Duy Q., Hunter, David R., and **Michael Schweinberger** (2013). Model-based clustering of large networks. *The Annals of Applied Statistics*, 7, 1010–1039.
- Hunter, David R., Krivitsky, Pavel N., and **Michael Schweinberger** (2012). Computational statistical methods for social network models. *Journal of Computational and Graphical Statistics*, 21, 856–882. **Invited. Equal contributions. The order of authors is alphabetical.**
- Schweinberger, Michael** (2012). Statistical modeling of network panel data: goodness-of-fit. *British Journal of Mathematical and Statistical Psychology*, 65, 263–281.
- Schweinberger, Michael** (2011). Instability, sensitivity, and degeneracy of discrete exponential families. *Journal of the American Statistical Association, Theory & Methods*, 106, 1361–1370.

- Lospinoso**, Joshua, **Schweinberger, Michael**, Snijders, Tom A.B., and Ruth Ripley (2011). Assessing and accounting for time heterogeneity in stochastic actor oriented models. *Advances in Data Analysis and Classification*, 5, 147–176.
- Snijders, Tom A.B., Koskinen, Johan, and **Michael Schweinberger** (2010). Maximum likelihood estimation for social network dynamics. *The Annals of Applied Statistics*, 4, 567–588.
- Schweinberger, Michael** and Tom A.B. Snijders (2007). Markov models for digraph panel data: Monte Carlo-based derivative estimation. *Computational Statistics and Data Analysis*, 51, 4465–4483.
- Snijders, Tom A.B., Steglich, Christian E.G. and **Michael Schweinberger** (2007). Modeling the co-evolution of networks and behavior, 41–71. In: Van Montfort, K., Oud, H. and A. Satorra (editors). Longitudinal models in the behavioral and related sciences. Mahwah, NJ: Lawrence Erlbaum.
- Schweinberger, Michael** and Tom A.B. Snijders (2003). Settings in social networks: A measurement model. *Sociological Methodology*, 33, 307–341.