Authors' Responses to Associate Editor

The Hyperedge Event Model

Thank you for acknowledging our efforts and contributions, and also for your constructive suggestions, which are very helpful to improve the quality of our paper.

- Presentation

  Response:

  - Unusual notations such as actor A and covariates y. Also u_{ie} is the ith line of matrix u_e, while $\tau_e = min_i(\tau_{ie})$. (discuss)
  - Change the order of Equation (2.2) and (2.1) and not use 'intensity'. (done)
  - Hard to understand 2.2 without 2.3. More explanation on τ_{ie} above Equation (2.5) and what μ represents in $V(\mu)$. (done)

- Discussion of relevant literature

  Response:

  - Perry and Wolfe (2013) arxiv version has a model for multicast. Any differences/advantages?
  - Why cite Snijders (1996) in 2.3? Be specific. (done)

- Model, covariates and missing data

  Response:

  - Observations $(s_e, r_e, t_e)_{e=1,\ldots,E}$ are not conditionaly independent since covariates depend on last 7 days. State this in Section 2 and modify out-of-sample algorithm using $(s_{e'}, r_{e'}, t_{e'})_{e':t_e<t'_e<t_e+l_e}$. (discuss)

- MCMC sampler

  Response:

  - Details on M-H proposals for $\boldsymbol{b}$ and $\boldsymbol{\eta}$ in Section 3.2. (done)
  - Inefficient sampler for u_{iej} especially when most are one-to-one. Comment on this and the mixing of MCMC samplers. (discuss)

  - Move Geweke to appendix (done) and use larger number of nodes and events.
  - Computational complexity per iterations of the samplers.

- Typos (done)

  Response: We fixed all the typos identified by the reviewer as well as other writing issues, and we highly appreciate your considerable comments on these which were extremely helpful.

Authors' Responses to Reviewer 1

The Hyperedge Event Model

Thank you for acknowledging our efforts and contributions, and also for your constructive suggestions, which are very helpful to improve the quality of our paper.

- Presentation and writing

  Response: We fixed all the typos, unclear parts, and issues in the bibliography (bib not working) identified by the reviewer. We highly appreciate your considerable comments on these which were extremely helpful. (done)

- Literature review

  Response:

  - More comprehensive review including temporal ERGMS and dynamic latent variable models, and discuss contributions and novelties in the light of alternatives

- Section 2

  Response: Rewrite Section 2 to provide a much clear picture of the model.

- Prior specification

  Response:

  - Use weakly informative priors as generic priors instead of assuming $N(0, \infty)$
  - Sensitivity analyses to check how much posterior inference is affected by the hyperparameters' settings, and, possibly, suggest some default values. (discuss)

- Posterior computation (discuss)

  Response:

  - Type of MH, proposal distribution, acceptance rate, smart proposal
  - Comment on poor mixing on data augmentation
  - Extent of scaling, bigger dataset, information on computational time

- Application (discuss)

  Response:

- Better baseline than random guess 1/18
- Compare with SAOMs and extensions in PPE and PPC
- Bad results in predicting timestamps (MdAPE)
- More conservative interpretations