"Getting More by Asking for Less: Linking Species Interactions to Species Co-Distributions in Metacommunities"

This study shows that whilst estimating the full community interaction matrix from empirical data is incredibly difficult due to the multitude of co-occurring processes and confounding environmental factors which affect interaction strengths, we can still reliably approximate the mean and variance of the overall distribution of interactions. The authors present their case by simulating communities with known interactions and retrieving the community interaction matrix under two simplified scenarios. In the first, a lack of dispersal ensures that the simulated communities present a wide range of varying densities under different environmental conditions and little interaction-environment covariation, a best-case scenario for estimating interactions. In the second scenario, the presence of dispersal means that species abundances track environmental conditions and covariation between densities and environmental conditions complicates the estimation of interaction strengths.

The manuscript is clear and concise. I am well-acquainted with the challenges, both empirical and theoretical, of inferring interaction strengths and the introduction presents a good and necessary overview of those difficulties. I was a little lost in the paragraph on net vs direct effects but found my way back in the following paragraph – maybe that section could do with a bit of wordsmithing to make it easier to follow, but that is my only criticism of the introduction. The aims of the study are clearly stated.

The methods predominantly focuses on the simulations. They impose various constraints on their model: intraspecific interactions are set to -1, the standard deviation of interspecific interactions cannot be too large, and dispersal is limited to prevent it from driving too much of the dynamics – this assures that the simulations present simplified cases which are close to the hopeful assumptions typically made when trying to recover the community interaction matrix from empirical data. As someone who studies and encounters a lot of facilitation, I would like to see a simple statement early on that predominantly competitive interactions are considered.

Maybe remind the reader in caption of Fig 2 that this presents a case where dispersal is present? It is mentionned in the main text but not the caption.

The authors regularly remind the reader that their simulations present a 'best-case' scenario, which I appreciated. I could have also done with a couple of further reminders on what the authors consider net vs direct effects (e.g. at the beginning of the results). Unfortunately I did not have access to the code to run the simulations myself.

The beginning of the discussion focuses on justifying their choice and approach and re-contextualising it with the issues faced when trying to infer the community interaction matrix from empirical data. Their claims are well-supported by the results and they link their findings to more recent studies. They finish with a paragraph on how their findings may be helpful for parameterising other models. I am not entirely sure what to do with their conclusions in regards to the more empirical aspect of my work: it is reassuring to know that even if the interactions I estimate from empirical data can be incorrect, the overall mean and standard deviation are likely close to correct, but I am not sure if there is anything more I can apply directly to my research. The authors leave the reader to make their own conclusions in that regard, but given how much they ground their study in the problems faced by empiricsts I wouldn't mind hearing more of what the authors think, even if it is purely speculative.

Overall the manuscript and results are rather straighforward, and present an optimistic take on the issue of reliably inferring interactions. I appreciated their concise breakdown of the issues with interaction inferrence, and the clarity of their aims and approach. Their results were simple but well-supported and this was reflected in the discussion, where they did not overstate any of their conclusions. This paper addresses an important issue in a satisfying and positive way. I was left wanting a little more on the implications of their study especially in context of the conceptual issues with estimating interactions, but I fully admit that is a complex discussion which requires more than a few sentences and which the authors may feel falls beyond the scope of this paper.

Supplementary Materials
Section A paragraph 2 – was that done for each individual species?