

Dear Editor

Thank you for the opportunity to revise our manuscript title “Savanna ecosystem structure and productivity along a rainfall gradient: the role of competition and stress tolerance mediated by plant functional traits”. We appreciate the valuable feedback provided by you and the reviewers. We have carefully considered all comments and feedback and revised the manuscript accordingly. In the attached response document, we provide point-by-point responses to each reviewer's comment, including references to revised line numbers in the manuscript. We have thoroughly reviewed the manuscript for typographical errors and updated relevant sections, including figures, references, and the supplementary document.

Reviewer comments responses sheet

Reviewer comments are in **blue colour**, and our responses are in normal type, and referring sections with line numbers are in **red colour**.

Reviewer comment: (visible to the public if the article is accepted and published)

The revised MS has addressed my comments to an acceptable extent. Some of the simulated behaviour deviates substantially from observations, e.g. simulated vs observed PFT vs. FPC Fig. S5. However, I have no issue with this. This is new territory in DGVM development and the results are presented in a balanced way. As such, this submission presents important improvements in the representation of vegetation within DGVMs and represents an important starting point to allow further improvements to simulated vegetation dynamics in Australia. The presented results are an important benchmark which demonstrate current model functionality and can be used to assess the utility of further model improvements.

However, the presented progress and potential contribution of this study to future studies is diminished by the lack of data deposition in an open repository and lack of publicly available model code. Making the data and forcing data "available upon request" and lack of publicly available code is the major limitation of the study. This is easily remedied. The “available upon request” choice is not in keeping with current practices and journal policy. No detailed explanation of why data cannot be publicly shared is provided, as per journal guidelines. LPJ-GUESS versions are publicly available via the LPJ-GUESS community repository on Zenodo. The “collaboration agreement” and “the acceptance of certain conditions” which are not specified no longer appears to be the case to access LPJ-GUESS code. I suggest the manuscript can be published but strongly suggest that the code used for the present study is added to the Zenodo LPJ-GUESS repository and that the data to reproduce, and which can be used to assess future potential improvements, are added to a public repository. Both DOIs should be added to the MS prior to publication to allow readers to easily find, attribute code and data, and reproduce the results of the present study.

Response: We thank the reviewer for highlighting the importance of open and reproducible science. We fully agree with the recommendation. In line with journal

policy and current community practices, we have deposited both the model code and the data used in this study in open repositories.

DOIs are now included in the revised manuscript (Code and Data Availability section), lines 689-692.