With the revision, the authors have addressed the remarks of me and the other reviewer sufficiently. I have only one remaining remark: I think it would be justified to cite the article https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2021MS002892 for a similar mean-preserving variance adjustment scheme in superparameterization as the one presented here, line 100 in the current manuscript, Eq. 9 in the other paper. Also that paper gives another reason superparameterization requires variance to be coupled, namely to transport shallow cumulus clouds smaller than the GCM grid size.

We sincerely apologize for forgetting to add this reference. It was certainly on our “to do” list for the revisions, but somehow got overlooked. We have added a sentence to the introduction as well as a paragraph to section 2.3 describing the results and variance transport approach in the Janson et al. (2022) paper.