

Dear Associate Editor,

Thank you for your comment.

We have now included additional paragraphs at the end of the 'The role of false priming' section to address this. It now should be clearer that the role of false priming has *reduced the spread* in future soil carbon projections from CMIP5 to CMIP6, due to a cancellation of the increased soil carbon by NPP by the reductions due to soil carbon turnover time. On top of this result, there is now discussion on how model developments between these CMIP generations will influence the *magnitude* of soil carbon change projected.

There is discussion on how the inclusion of soil carbon pools and interactive nitrogen influences future soil carbon change in ESMs, using a couple of ESM which saw large differences in the projection of soil carbon change between CMIP5 and CMIP6 as examples. It is difficult to isolate which change had the greater impact, but hopefully now the reader will infer that multiple model developments influence future soil carbon and how. But taking away the main result of the study which is showing how false priming is limiting the spread in future soil carbon projections in CMIP6.

We hope that this has addressed the additional comment.

Best wishes,
Rebecca Varney
(On behalf of Co-authors)