

Reviewer 3 (C. Zhou)

This paper is very well written, which provides an important framework for understanding the cloud feedback processes. Its contribution to the CMIP7 ensures it will be important for future research and the next generation of climate projections.

Nevertheless, I have a suggestion to address a potentially inaccurate statement in the paper: According to Figure 1, the pattern effect analyzed using amip-piForcing is induced by the evolving spatial patterns of both SST and SIC. Although the SST pattern effect dominates, a relatively smaller SIC pattern effect also exists when analyzing the amip-piForcing experiment according to our previous study. In contrast, the piClim-deltaSST experiment appears to include the SST pattern effect only, excluding the SIC pattern effect. Therefore, I suggest adding a discussion on whether the SIC pattern effect is accounted for in the pattern effect analyses across these different experiments.

We thank the reviewer for the positive comments. We agree that sea-ice changes will likely also contribute to the time evolution of climate feedback in abrupt-4xCO₂, which will not be included in the piClim-deltaSST experiment. We have added a mention of this at the end of section 3.3, with a reference to the reviewer's work on the sea-ice pattern effect (doi: [10.1126/sciadv.adr4248](https://doi.org/10.1126/sciadv.adr4248)).