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Geoscientific Model Development Discussions

Interactive comment on "The Cloud Feedback Model Intercomparison Project (CFMIP) contribution to CMIP6" *by* Mark J. Webb et al.

Anonymous Referee #2

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This manuscript outlines the CFMIP-3 experimental strategies, the associated model output, and the motivation and anticipated results of these experiments. Overall the manuscript is clearly written and accurately summarizes the plans for CFMIP-3, and in many ways represents more of a review of past CFMIP achievements, which in itself is a useful contribution. I recommend acceptance with only minor revisions as outlined in my suggestions below.

The authors are very generous in their citations of other work, which is commendable, but it detracts from the readability of the manuscript. I recommend the authors consider focusing on a few select highlights of the previous CFMIPs that illustrate the main contributions, rather than attempting an exhaustive summary of everything that's been learned from CFMIP experiments. In the current form, it's difficult to identify what the key contributions of CFMIP have been.

Section 2.1 reads more as a review of all previous studies that used CFMIP data, rather than a description of the CFMIP-3. I would recommend moving much of this to the previous section which reviews past CFMIPs and identify any changes/deletions from the past CFMIPs before then proceeding to describe the new additions to the CFMIP-3 set of experiments. It would also be useful to define what a "DECK" is.

There is rightfully considerable attention within CFMIP devoted to isolating and quantifying the fast adjustments. However the fast adjustments arise from both atmospheric radiative heating changes and land warming. It would be useful to isolate these contributions (beyond the use of aqua planets, whose utility in quantifying CGCM feedbacks is a little over sold here IMO). Has there been any efforts to develop experiments for this? If not, this issue might warrant some discussion in reference to the experiments designed to quantify adjustments.

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