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Interactive comment on "Dynamic sub-grid heterogeneity of convective cloud in a global model: Description and Evaluation of the Convective Cloud Field Model (CCFM) in ECHAM6–HAM2" *by* Zak Kipling et al.

Anonymous Referee #1

The paper provides an overview of the behavior of a parameterization for deep convection in the ECHAM6-HAM2 general circulation model. The parameterization is among few for deep convection which include vertical velocities at convective scale, essential for incorporating cloud-aerosol interactions (and more realistic microphysics and cloud radiative interactions generally) in these clouds, as vertical velocity is a major control on activation of liquid droplets and ice crystals. Although this paper does not deal with these interactions, it is important to establish a baseline for such work by demonstrating successful simulations using this parameterization approach. This paper does so successfully.

C1

In my earlier referee report for the initial manuscript evaluation, I detailed a number of suggested revisions. Per *ACPD* procedures, I should have deferred these to the interactive discussion, so aplogies to the editors here. The authors have either responded satisfactorily or incorporated these revisions in the discussion paper as it currently stands. I recommend publication.