

Geosci. Model Dev. Discuss., author comment AC1
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Reply on RC1

Joseph Mouallem et al.

Author comment on "Multiple same-level and telescoping nesting in GFDL's dynamical core" by Joseph Mouallem et al., Geosci. Model Dev. Discuss.,
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Thank you for the careful assessment and valuable comments.

(1) Since this is an important document, it may be worthwhile to discuss the grid structure, grid staggering and the variables on staggered grid. A figure showing the nested grid inside the parent grid may be useful. Where and which variables are placed on A, C and D grids? How does the feedback occur? Similarly the grid structure related to boundary conditions updates may be useful.

We will add text to clarify some of these technical details when submitting the revision.

(2) Was the same physics used all the way from 200 km grid length (C48) to 1.4 km grid resolution (C768_2n3)? What about the horizontal diffusion and/or divergence damping coefficients for various resolutions? A table for physics along with k_split and n_split for various resolutions and perhaps other namelist changes for different grid resolutions may add more information to readers and model users.

The timestepping parameters are shown in the appendix. We will upload all the input namelists separately to zenodo for other readers and model users.

(3) The section on Atmospheric river looks little rushed. This section needs more description. Figure 12 may need improvements because it does not provide much information.

We will add more text to provide more background, motivation, and description for the reader.