

Interactive
Comment

Interactive comment on “Development and evaluation of a hydrostatic dynamical core using the spectral element/discontinuous Galerkin methods” by S.-J. Choi and F. X. Giraldo

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Many thanks for submitting this interesting article to GMD. Apologies that these editorial comments are late.

Reviewers 2 and 3 make some critical comments, suggesting some more stringent testing, which I would like the authors to address in some major revisions to the paper.

I would also like the authors to revise the article in line with the final version of the article: gmd-2014-91 "Verification of a non-hydrostatic dynamical core using horizontally spectral element vertically finite difference method: 2D Aspects" which illuminated some of the accuracy constraints associated with the CG/FD combination. The review-

C1926

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ers of gmd-2014-90 were interested to see how small the differences between the DG and CG formulations were. Could this be because the errors are swamped by the FD errors in the vertical?

gmd-2014-91 motivated the CG/FD combinations and then showed some serious problems with the formulation. Based on gmd-2014-91, I expect the authors of gmd-2014-90 to motivate the use of FD in the vertical much more carefully, bearing in mind the results of gmd-2014-91.

Interactive comment on *Geosci. Model Dev. Discuss.*, 7, 4119, 2014.

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