

Review of Manuscript 3 of WAVETRISK-2.1: an adaptive dynamical core for ocean modelling

By N K-R Kevlahan and F Lemarie

The authors have given clear responses to nearly all my comments and modified their paper accordingly. I recommend that the paper is accepted subject to one revision and two minor suggestions that the authors can accept or reject as they see fit.

I note that I found it quite difficult to check the changes made in response to my comments because the authors did not give me the lines in the new version of the paper corresponding to the comments. Also I didn't see a list of the changes that have been made to the paper despite the fact that some of the changes (for example to the results in section 4.1) are quite substantial.

Requested revision

Lines 525-527. The first sentence summarising the results for the sea mount test case has not been revised in line with the changes to the results. This sentence should be revised. The "note of caution" that has been added in the following sentence is not a sufficient qualification. The earlier text is quite clear that the present hpg scheme needs to be improved (lines 419-420).

Suggestions for Minor revisions

1. Sentence following (7)-(9): The authors note in their responses that the along-layer diffusion would be zero for the case of a linear EOS. I had not realised this and think that it would be worth pointing it out explicitly. I think it relies on the layers being initialised with uniform potential temperatures and retaining those values.
2. Lines 264 and 271: The authors moved a sentence to line 264 following my comment. I actually meant to suggest that the sentence now on line 271 (starting "Since it uses ...") be moved to line 264 (after " $\tau \approx 1 \mu\text{s}$ ")!