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Geoscientific Model Development Discussions

Interactive comment on "Normal-mode function representation of global 3-D datasets: an open-access software for atmospheric research community" *by* N. Žagar et al.

Anonymous Referee #1

Received and published: 17 January 2015

Review of 'Normal-mode function representation of global 3D datasets: an open-access software for atmospheric research community' by Zagar et al.

Recommendation: Minor revisions

This paper describes a new software package for the decomposition of 3D climate data sets into balanced and unbalanced components. Is does that via the normal-mode decomposition developed originally in the 1980s by Kasahara and co-workers. This is an important tool because the unbalanced motions are potentially very important but have been not that well studies so far. This software tool might be very beneficial for climate model evaluations especially in the tropics where all models still fail to have

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realistic representations of the MJO. I recommend to accept this manuscript after some minor revisions.

1) I think it would be useful to also discuss how the modes are separated into balanced and unbalanced motions.

2) Line 155: Here it is stated that IG energy is about 10% of total wave energy. But later is stated that unbalanced variability is about 33% of total variability. I don't understand this. This should be explained in more detail.

3) While the manuscript is easy to read there still a few grammatical mistakes. Especially the use of 'the' seems to be rather random. I suggest that the manuscript is carefully proof-read by a native speaker.

4) Line 776: I don't understand this sentence. Is there only one 'separation constant' or is there one for each equivalent depth? Also what exactly is meant by a separation constant?

5) 'more flat' should be 'flatter'

6) 'more steep' should be 'steeper'

7) 'in contrary' should be 'in contrast'

Interactive comment on Geosci. Model Dev. Discuss., 7, 8805, 2014.

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