

## ***Interactive comment on* “The Dynamical Core of the Aeolus Statistical-Dynamical Atmosphere Model: Validation and Parameter Optimization” by Sonja Molnos et al.**

### **Anonymous Referee #2**

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While reviewing this article I have looked through both the comments of the other reviewer and the authors' response. I agree with almost all of the other reviewer's comments and I am pleased to see that the authors have responded with changes to their manuscript. For this reason I will try to not repeat comments made in the other review that have already been addressed.

I think that the material within this article is good, however I found it difficult to read and some parts hard to understand. As a general point, I think the authors should take time to try and make the article more accessible. Below are a few more specific comments:

1) I think that the introduction needs more information about statistical dynamical atmo-

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sphere models. For readers from a dynamical core background it would be very useful to give a brief paragraph about how they work and the key differences to dynamical cores.

2) The introduction should also better explain the aims of the paper. This is covered briefly in the abstract, but it would be worth including this in the introduction.

3) The way the article is worded it is not clear if the work presented is a completely new model, or something coupled to an existing model (which is what I think is the case). This needs to be clarified.

4) Page 8, line 7, you exclude the polar regions. I am curious why it is poleward of 60 degrees for SH but 70 degrees for NH. Why the difference?

5) In the abstract, page 1 line 18, change "enables us to do climate simulations" to "enables us to perform climate simulations"

6) Typo, page 7 line 29. Full stop needed after the reference.

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Interactive comment on Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2016-263>, 2016.

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