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Response to the Editor comments of 14.12.20

We thank the Editor for his suggestions and have modified the manuscript accordingly. Again, changes of the manuscript are marked in red. Replies th the Editor's comments are given below in italics.

Editor Comment:

Many thanks for your further revisions. I think there is one important issue remaining, it is the use of the term "self-induced" or "self-excited". As we briefly exchanged in German via Email, my main problem here is that your interesting oscillations are either spontaneously self-excited in (or by) the atmosphere or they are the result of some interaction and/or feedback with external forcing (e.g., land-surface processes). Since you cannot make a clear conclusion about the origin - as you mention - both options are possible, I strongly suggest that you omit the question of the origin from most parts of the paper and therefore also the term "self-excited". This does not weaken your study (in fact, I think it will make it much clearer), if you limit most parts of your paper to the presentation of the oscillations and their properties, and then only in the final part briefly discuss the different options of where these oscillations may come from. This will lead to a clearer and more elegant paper.

Please take your time to properly polish the text of your paper to achieve maximum clarity about presenting the solid results about the properties of these oscillations, and in the end, briefly discuss the more hypothetical part about their potential origin.

Thank you for the suggestions! *We have now modified the text accordingly, i.e have omitted all speculations about "self-excitation". Instead, we have added a short paragraph in Section 4.1 as follows*:

> 4.1 The oscillations exist in computer models even if the model boundaries for the influences of the sun, the ocean, the green house gases are kept constant. Therefore one might suspect that they are self-generated. The oscillation periods are robust, which is typical of self-excited oscillations. However, external excitation by land surface processes is a possibility.

I hope that you will find these changes satisfactory.