

## ***Interactive comment on “Planetary wave activity in the Arctic and Antarctic lower stratospheres during 2007 and 2008” by S. P. Alexander and M. G. Shepherd***

### **Anonymous Referee #3**

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This paper reports planetary wave activity in the polar stratosphere by using temperature data from the GPS-RO satellites. I found it is a very detailed paper describing several aspects of the large scale temperature field, but critically speaking I think it is too much descriptive as being a kind of the data book without any scientific consideration. Moreover almost all futures the authors described have already been pointed out by the previous works. Somewhat new approach was conducted based on the wavelet analysis, but the result is rather trivial. The most disappointing point which I am not fully satisfied with is the way of using the GPS-RO temperature data for such large scale phenomena. It seems that the authors did not make use of the advantage with its high vertical resolution. As they mentioned in the manuscript the results should be almost

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the same as those analyzed with use of the UKMO data. One interesting view is the relation between the stratospheric sudden warming and wave activity as a precursor. For this purpose the longer data record such as the UKMO data would be preferable. Anyway I appreciate that the manuscript is well written, so it may be accepted as an additional description of the stratosphere for 2007 and 2008. However, from the view point of the scientific originality I do not recommend its publication to ACP.

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