

Comments on “**Characteristics of layered polar mesosphere summer echoes occurrence ratio observed by EISCAT VHF 224MHz Radar**” by Ge et al.,

The revised manuscript has improved a lot from the previous version of the manuscript. I acknowledge the authors hard work. However, still I am not convinced with some of the responses. For example, in figure2 the multiple PMSE occurrence show maximum during solar maximum and minimum during solar minimum (positive variation kind of structure) but the correlation is negative why? After the clarification this manuscript may accept for the publication in AnGeo Physicae. So, I recommend for a minor revision.

Comments:

Page 9 line 18-21, Table 3 indicates a difference in total observation time for the individual years. How has this been taken into account for the determination of occurrence ratios?, whatever the time is different, it is clear (from the percentage) that the multiple PMSE-OR rate is less during the solar minimum years (2006-09)! Comment on it?

Reply to Question no:2. **If it can be confirmed that layered PMSE OR is closely linearly related to solar activity, then the trends of PMSE OR should be periodical, so we did the following correlation analysis. Smirnova et al. (2010) shows the correlation of the year-by-year variations of PMSE occurrence rate and length of season with solar activity, represented by the solar 10.7 cm radio flux, is negative but not significant. This is consistent with our results!**

But in the manuscript the correlation coefficient as follows: page 8 line: 7-8, the correlation coefficients (r_s) of mono-layer with double-layer OR, tri-layer OR and total OR are 0.7922, 0.7718 and 1, respectively. The correlation coefficient is very high! It simply means that it have positive correlation with solar cycle variation. However, the authors claimed that it is a negative correlation, why? Please either modify the text or give the appropriate evidence that the multiple PMSE OR have negative correlation with solar cycle variation.

Page 5 line 21, PMSE occur in thin layers having thickness up to 3-4 km. what is the average thickness of the single, double and triple layer? I feel during the multiple PMSE occurrence time the thickness will decrease. Is it so?

Reply 26, please check the greater than symbol, I think it would be less than ($<$) is the second range. For example, $Ne > 1 \times 10^{-11} \text{ m}^{-3}$ and less than $Ne < 1.5 \times 10^{-11} \text{ m}^{-3}$. Please check it.