

***Interactive comment on* “Stationary planetary wave propagation in Northern Hemisphere winter – climatological analysis of the refractive index” by Q. Li et al.**

Q. Li et al.

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We appreciate the referee’s comments.

Response with each comment listed beneath, respectively:

1. Many of the figures are far too small to read.

This can be improved when the format of figure files changes to .eps since the figures in the print version and the online version are in .jpg format with relatively lower resolution (higher resolution can greatly increase the size of the files). While in final version of the publication, the figures will be published in .eps format which can improve much the clearance of the figures. On the other hand, the authors will also require to make

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bigger figures.

2. Are weak/strong vortex regimes not self reinforcing?

In our opinion, this is true in Northern Hemisphere winter. The stratospheric polar vortex will stay strong and cold when the disturbing of waves becomes negligible such as Southern Hemisphere polar vortex. The wave forcing induced by planetary waves plays a key role to contribute to the construction and maintenance of the strong and weak polar vortex regimes in Northern Hemisphere winter.

3. Is Fig.10 a scatter plot or a correlation? How is each cross defined (time interval)?

Fig.10 shows the correlation between the vertical component of E-P flux and the frequency of negative refractive index squared (FNRIS) on 70hPa by drawing the distribution of scatters. Therefore we applied the “correlations” in the title of this section since it represent more preciously the main point discussed here. But we think it is more precise to illustrate the figure as a scatter plot. On the other hand, we agree that a few sentences of explanation of the time interval can be helpful here. P9050, line 13, after stop, added sentences “ This analysis was performed for each DJF for all 44 winters. For single DJF, was taken average and FNRIS was computed for this DJF.”

4. P9051, line 13. It is hardly surprising that there is “a strong correlation between wave activities indicated by extratropic upward E-P flux at 70hPa and probability of stationary wave propagation.”

The scatters in Fig.10, 11 show assemblies for ZWN1, 2 and 3 waves. Therefore these figures indicate the strong correlation between vertical component of E-P flux and FNRIS.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 9033, 2006.

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