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Atmospheric Chemistry and Physics Discussions



# *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 are grateful for the referee's comments and effort to clarify the errors.

Response to the comments listed beneath:

1. P9038, line 17. Formula (3), after carefully checking, we didn't find any type error in the formula.

2. P9045, line 24-25. "The ZWN 1 wave contributes most, compared with ZWN 2 and 3 waves." Comparing the E-P flux and divergence for ZWN 1 (Fig.5a), ZWN 2 (Fig.5b) and ZWN 3 (Fig.5c) waves, from the troposphere to the stratosphere, the amplitudes of vectors of E-P flux and contours of convergence for ZWN 1 wave, are the biggest



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compared with ZWN 2 and ZWN 3 waves. Therefore, we concluded here that “the ZWN 1 wave contributes most”, while “ for wave propagation from the troposphere to the stratosphere”.

3. P9047, lines 7-8. “in order to Ĕ avoid unimodal problemĔ”. In Gillet et al. (2002), the daily average data of temperature on 50hPa were analyzed. We also analyzed the difference of temperature between SVR and WVR. However, unlike the zonal wind, the temperature difference between SVR and WVR (figure not shown in this paper) in the polar stratosphere does not show significance. Therefore, the daily data of temperature probably can not capture the polar vortex regimes. On the other hand, the authors would like to add a short statement in p9046, line 25, “Ĕfor daily values” will be changed to “for daily values of temperature, which probably lost the ability to capture the biomodal circulation regimes”.

4. P9050, line 26. “Ĕ to propagate from troposphere and stratosphere.” It will be modified to “Ĕ to propagate from the troposphere to the stratosphere”.

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