

## ***Interactive comment on “Intraseasonal variations of upper tropospheric water vapor in Asian monsoon region” by R. Zhan et al.***

### **Anonymous Referee #2**

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This paper presents some interesting patterns related to upper tropospheric water vapor in the Asian monsoon region. While some of the correlations shown are quite interesting (for instance the similarity of the OLR and water vapor lag correlations shown in Figures 5 and 6), the paper very much gives the impression of forcing certain results. Beginning with Figure 3, it is very difficult to see why the authors would pick 10-20 and 30-60 day modes from this data. The power spectra is above the level of white noise almost everywhere from 10-60+ days in both plots.

Before discussing Figure 2 the authors need to explicitly define what they mean by East Asia and South Asia. Having done so, they should stick to this geographic description unless they explicitly state a good reason for changing them. The continually changing geographic regions chosen for the plots give the impression that the authors are trying

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to force a publishable result out of the data.

The authors need to give an explicit description of whether there is any a priori dependence in the AIRS retrievals that could be affecting the results. Presumably there is some climatology used in the retrievals. Could this in any way be affecting the results observed here? Also, I assume that AIRS water vapor is not being assimilated by ECMWF, but an explicit statement of this is required. Altogether, the difference between Figures 7 and 11 is surprising. I certainly would expect that the ECMWF results would be smoother, but I would have expected that the higher horizontal resolution of the AIRS data would lead to smaller variations, not larger variations as the authors find. The authors need to search further to find a more plausible explanation for this.

A last very minor point related to Figure 4 and 10. Presumably the negative contours in the 10-20 day mode have been dropped, but if so then this should be explicitly stated since they are shown in the 30-60 day mode plots. If there are no negative contours then I have really misunderstood this plot, and they definitely need further explanation.

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Interactive comment on Atmos. Chem. Phys. Discuss., 6, 8069, 2006.

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