

## ***Interactive comment on “Impact of convectively lofted ice on the seasonal cycle of tropical lower stratospheric water vapor” by Xun Wang et al.***

**Xun Wang et al.**

xunwang1009@tamu.edu

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1. "Since this is mostly diagnosing an output result from the GEOSCCM I don't see what the pupose of the model runs done with ERAi and MERRA-2 add to this. I think figures 1 and 2 could have been made from just using trajectories driven from GEOSCCM thus simplifying the analysis and figures. I assume that driving the trajec-tory model with any of these wind and temperature fields will produce similar results. le compare figure 5 to 1 and 2. Maybe I just missed something here."

We disagree with this comment. Without the plots showing ERAi- and MERRA2-based trajectory simulations, our paper would be a model-only analysis. We would not be able to connect the GEOSCCM results with observations. The fact that the results

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produced by ERAi and MERRA2 trajectory without convection look similar to those from the GEOSCCM trajectory without convection is a key link in the chain of logic of our paper. Thus, we will leave the figures in.

2. "On page 11 line 325 it → in."

We'll update the text.

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