

## ***Interactive comment on “An evaluation of the performance of chemistry transport models, Part 2: detailed comparison with two selected campaigns” by D. Brunner et al.***

**D. Brunner et al.**

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We would like to thank the referee for having provided valuable input for this manuscript, in particular for making us aware of a publication by Fenn et al. (of Edward Browell's lidar group) on an investigation of the contribution of stratospheric air masses to the PEM-Tropics observations over the Pacific.

1. “Add reference to Vay et al. (2003) on air mass classification.”

We have not been able to find such a publication. However, we believe that the paper by Fenn et al. (1999) (who also was a co-worker of Edward Browell) is exactly what the referee had in mind and we have added a corresponding reference in Sect. 3.1.3.

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2. Page 8, change “providing clear evidence” to “some evidence”

Done

3. Sect. 3.2.5. Discuss H<sub>2</sub>O<sub>2</sub> as potential OH source and the CO - OH hen and egg problem.

We have added the following sentences at the end of section 3.25: Photolysis of peroxides provides an important source of HO<sub>x</sub> in the upper troposphere (Jaeglé et al., 2001) and hence the enhanced H<sub>2</sub>O<sub>2</sub> levels in the LMDz-INCA model may be rather the origin than the consequence of the elevated HO<sub>x</sub> concentrations. A similar hen and egg problem concerns the CO observations of the TM3 model. Without a more thorough investigation it is not clear whether an underestimation of OH causes too high CO or whether an overestimation of CO causes too low OH in this model.

4. Page 16, change “reduced performance in terms of ozone” to “.. in terms of ozone variability”.

Done

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Interactive comment on Atmos. Chem. Phys. Discuss., 4, 7355, 2004.

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