

Interactive comment on “Transport pathways of peroxyacetyl nitrate in the upper troposphere and lower stratosphere from different monsoon systems during the summer monsoon season” by S. Fadnavis et al.

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The revised manuscript and supplementary figures are attached as a supplement.

Please also note the supplement to this comment:

<http://www.atmos-chem-phys-discuss.net/15/C7240/2015/acpd-15-C7240-2015-supplement.pdf>

C7240

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 15087, 2015.

C7241

“Supplementary figures”

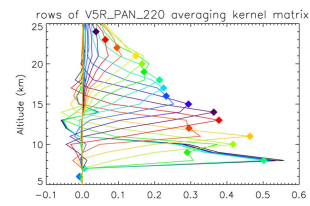


Figure S1: Averaging kernel rows of data version V5R_PAN_220 at the location 28° N and 85° E. Diamonds indicate the respective nominal altitudes of the retrieval grid.

Fig. 1.

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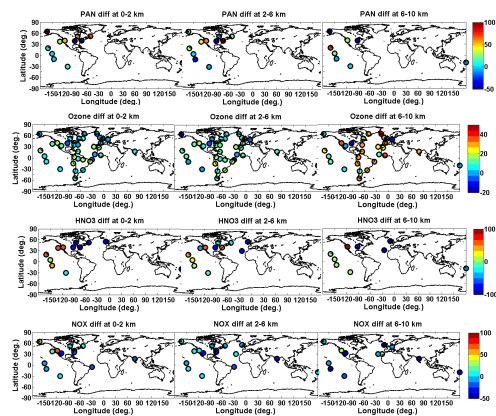


Figure S2: Global distribution of bias (ECHAM5-HAMMOZ - aircraft observations) in (PAN (ppt), ozone (ppb), HNO₃ (ppt), NO_x (ppt), for monsoon season and altitude ranges a 0-2 km, 2-6km, 6-10km.

Fig. 2.

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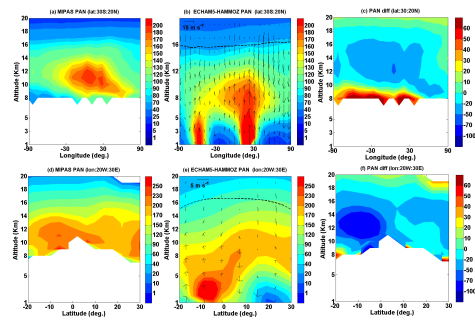


Figure S3. Longitude-altitude cross-section of PAN (ppt) averaged for monsoon season and over $30^{\circ}\text{S} - 20^{\circ}\text{N}$ (a) MIPAS-E climatology (b) ECHAM5-HAMMOZ CTRL simulations (c) difference in PAN (ppt) (ECHAM5-HAMMOZ-MIPAS). Latitude-altitude cross-section of PAN (ppt) averaged for monsoon season and over $20^{\circ}\text{W} - 30^{\circ}\text{E}$ (d) MIPAS-E climatology (e) ECHAM5-HAMMOZ CTRL simulations (f) difference in PAN (ppt) (MIPAS-ECHAM5-HAMMOZ).

Fig. 3.

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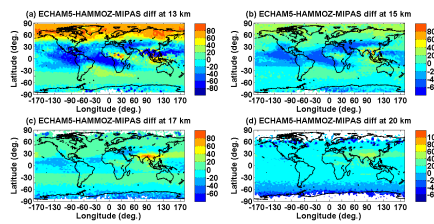


Figure S4: Differences between MIPAS observations (climatology 2002-2011) and ECHAM5-HAMMOZ reference simulation in PAN (ppt) averaged for the monsoon season (a) at 13 km (b) 15 km (c) 17 km and (d) 19 km.

Fig. 4.

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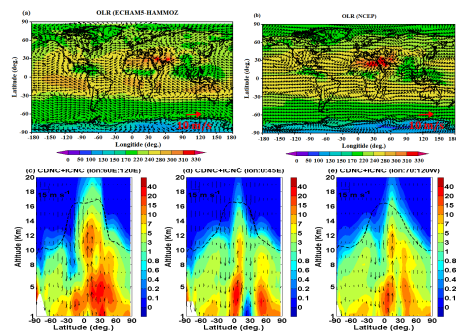


Figure S5. Distribution of simulated (a) Outgoing long wave radiations (OLR) and 850 hpa winds averaged for June-September of years 200-2010, (a) ECHAM5-HAMMOZ (b) NCEP-Reanalysis data, ECHAM5-HAMMOZ simulated cloud droplet number concentration (CDNC) and ice crystal number concentration (ICNC) (1 mg^{-1}) averaged for June-September of years 200-2010 (c) zonal average between $60\text{--}120^\circ\text{E}$ and (d) zonal average between 70°W and 120°E (e) zonal average between $0\text{--}45^\circ\text{E}$. The black arrows indicate wind vectors. In figures (c)-(e) the vertical velocity field has been scaled by 300.

Fig. 5.

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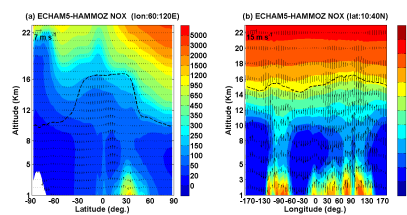


Figure S6. Seasonal mean ECHAM5-HAMMOZ NO_x (ppt) obtained from reference simulation (a) Latitude -pressure cross section averaged over 60°E - 120°E (b) Longitude-pressure cross section averaged over 10°N - 40°N . The black arrows indicate wind vectors. The vertical velocity field has been scaled by 300.

Fig. 6.

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