

Interactive
Comment

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/C7248/2015/acpd-15-C7248-2015-supplement.pdf>

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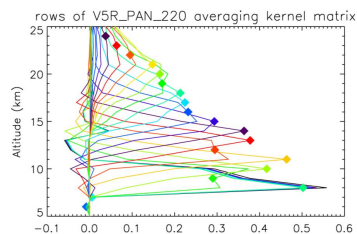
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Figure S1: Averaging kernel rows of data version V5R_PAN_220 at the location 28° N and 85° E. Diamonds indicate the respective nominal altitudes of the retrieval grid.

Fig. 1.

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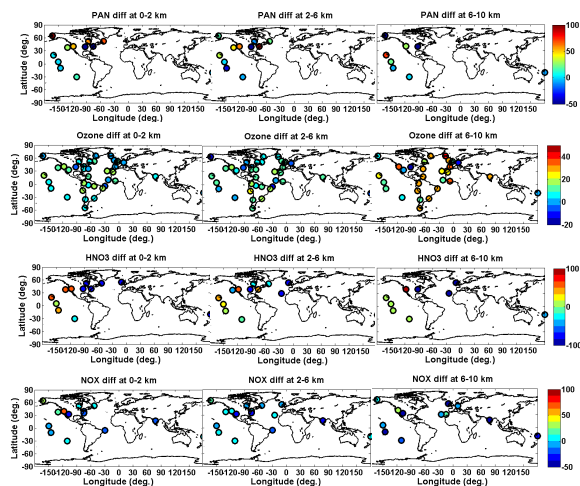


Figure S2: Global distribution of bias (ECHAM5-HAMMOZ – aircraft observations) in (PAN (ppt), ozone (ppb), HNO₃ (ppt), NO_x (ppt), for monsoon season and altitude ranges a 0-2 km, 2-6km, 6-10km.

Fig. 2.

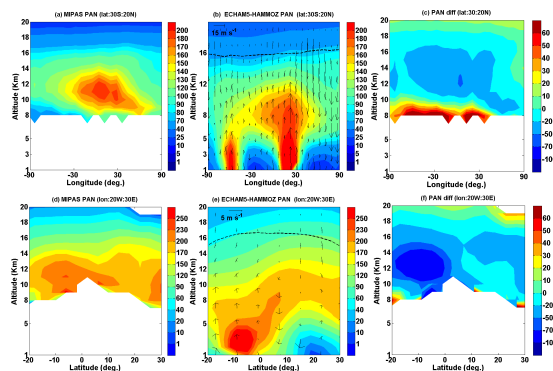


Figure S3. Longitude–altitude cross-section of PAN (ppt) averaged for monsoon season and over $30^{\circ}\text{S} - 20^{\circ}\text{N}$ (a) MIPAS-E climatology (b) ECHAM5-HAMMOZ CTRL simulations (c) difference in PAN (ppt) (ECHAM5-HAMMOZ-MIPAS). Latitude–altitude cross-section of PAN (ppt) averaged for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

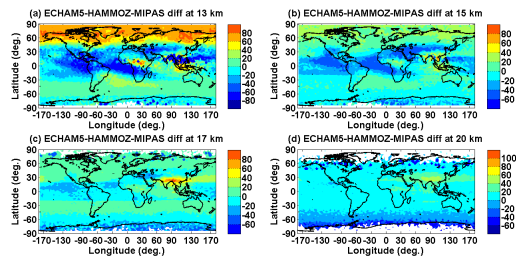


Figure S4: Differences between MIAPS observations (climatology 2002-2011) and ECHAM5-HAMMOZ reference simulation in PAN (ppt) averaged for the monsoon season (a) at 13 km (b) 15 km (c) 17 km and (d) 19 km.

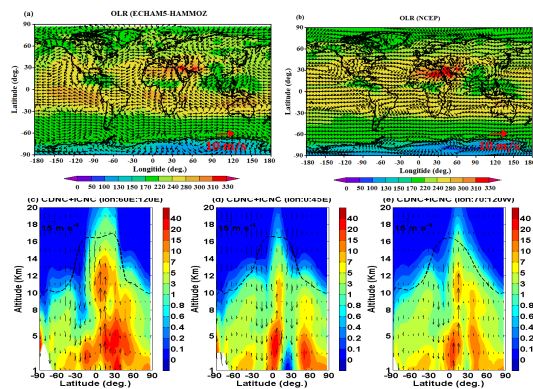


Figure S5. Distribution of simulated (a) Outgoing long wave radiations (OLR) and 850 hpa winds averaged for June–September of years 200–2010, (a) ECHAM5-HAMMOZ (b) NCEP-Reanalysis data, ECHAM5-HAMMOZ simulated cloud droplet number concentration (CDNC) and ice crystal number concentration (ICNC) (1 mg^{-1}) 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.

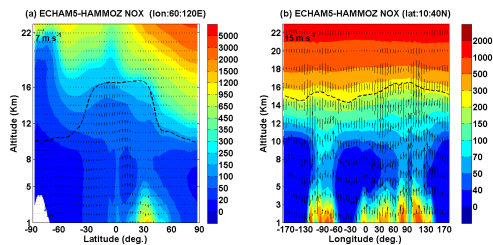


Figure S6. Seasonal mean ECHAM5-HAMMOZ NO_x (ppt) obtained from reference simulation (a) Latitude -pressure cross section averaged over 60°E - 120°E (b) Longitude-pressure cross section averaged over 10°N - 40°N. The black arrows indicate wind vectors. The vertical velocity field has been scaled by 300.

Fig. 6.