Supplement of Atmos. Chem. Phys., 15, 11477–11499, 2015
http://www.atmos-chem-phys.net/15/11477/2015/
doi:10.5194/acp-15-11477-2015-supplement

Atmospheric Chemistry and Physics Open Access

Supplement of

Transport pathways of peroxyacetyl nitrate in the upper troposphere and lower stratosphere from different monsoon systems during the summer monsoon season

S. Fadnavis et al.

Correspondence to: S. Fadnavis (suvarna@tropmet.res.in)

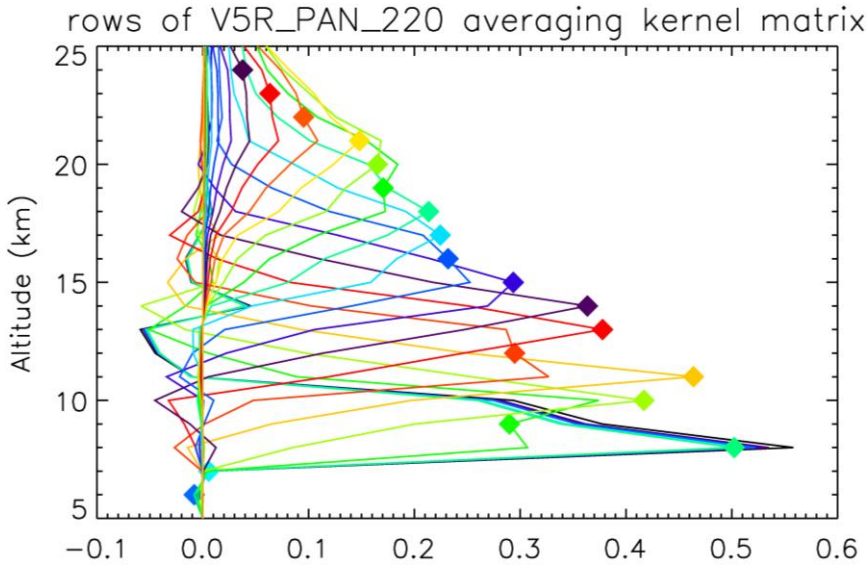

Figure S1: Averaging kernel rows of data version V5R_PAN_220 at the location 28 ^{O} N and 85 ^{O} E. Diamonds indicate the respective nominal altitudes of the retrieval grid.

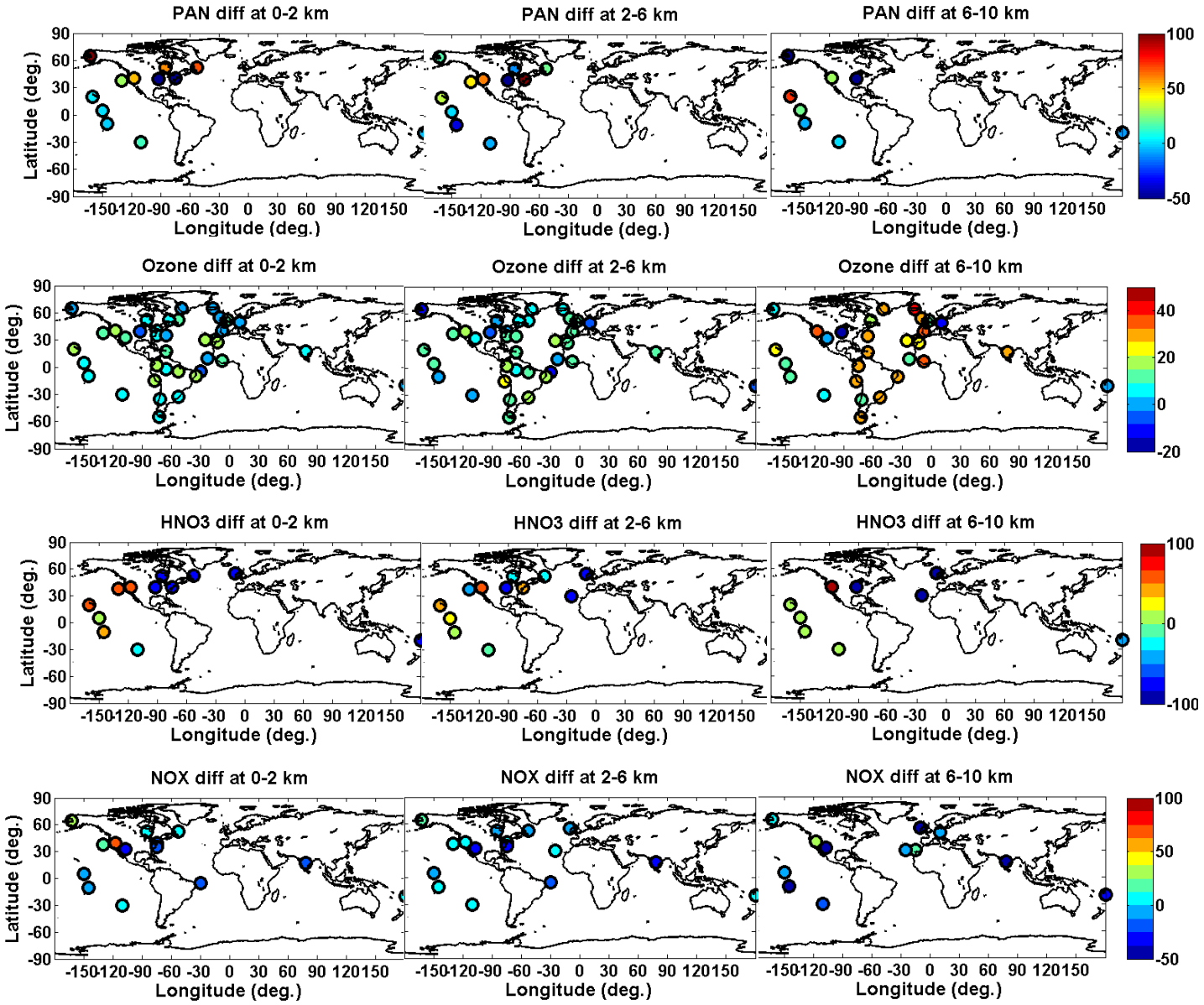

Figure S2: Global distribution of bias (ECHAM5-HAMMOZ – aircraft observations) in (PAN (ppt), ozone (ppb), HNO_3 (ppt), NO_x (ppt), for monsoon season and altitude ranges a 0-2 km. 2-6km, 6-10km.

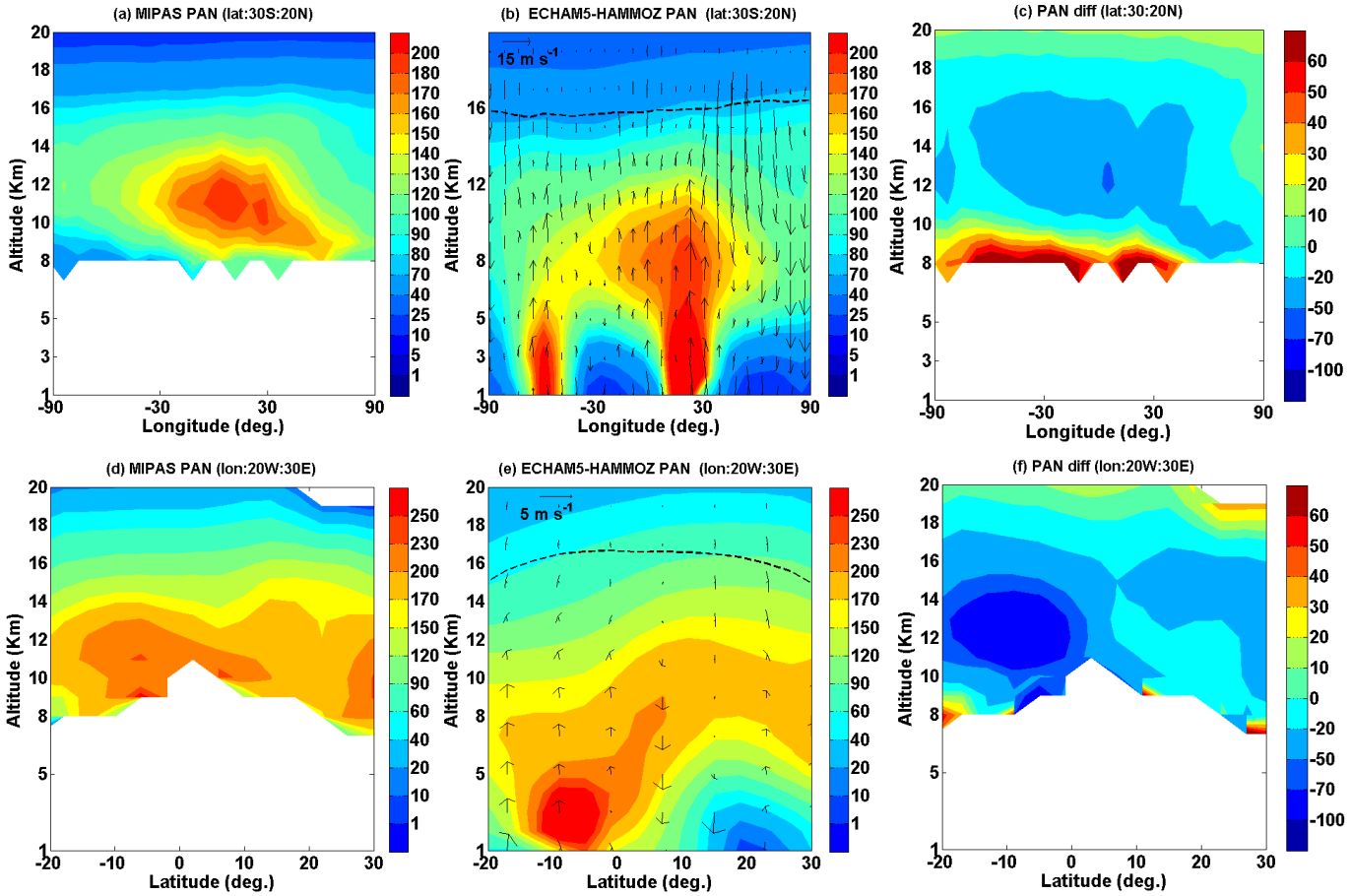

Figure S3. Longitude –altitude cross-section of PAN (ppt) averaged for monsoon season and over 30^{O} S - 20^{O} N (a) MIPAS-E climatology (b) ECHAM5-HAMMOZ CTRL simulations (c) difference in PAN (ppt) (ECHAM5-HAMMOZ-MIPAS). Latitude-altitude cross-section of PAN (ppt) averaged for monsoon season and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

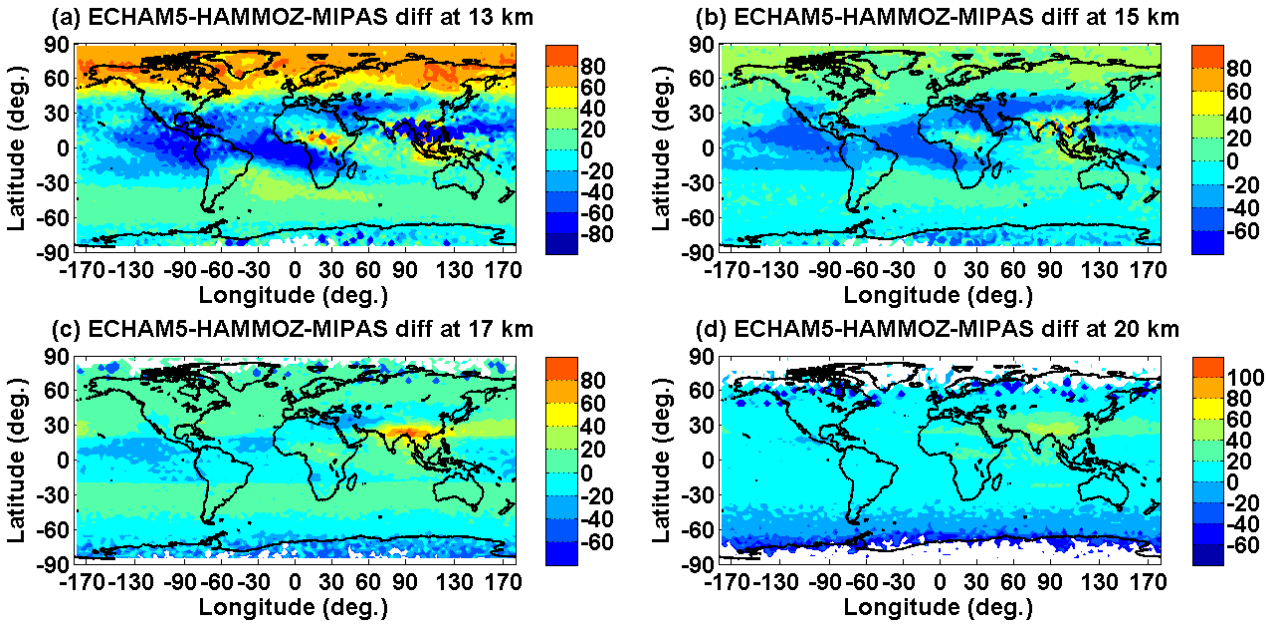

Figure S4: Differences between MIAPS observations (climatology 2002-2011) and ECHAM5-HAMMOZ reference simulation in PAN (ppt) averaged for the monsoon season (a) at 13 km (b) 15 km (c) 17 km and (d) 20 km.

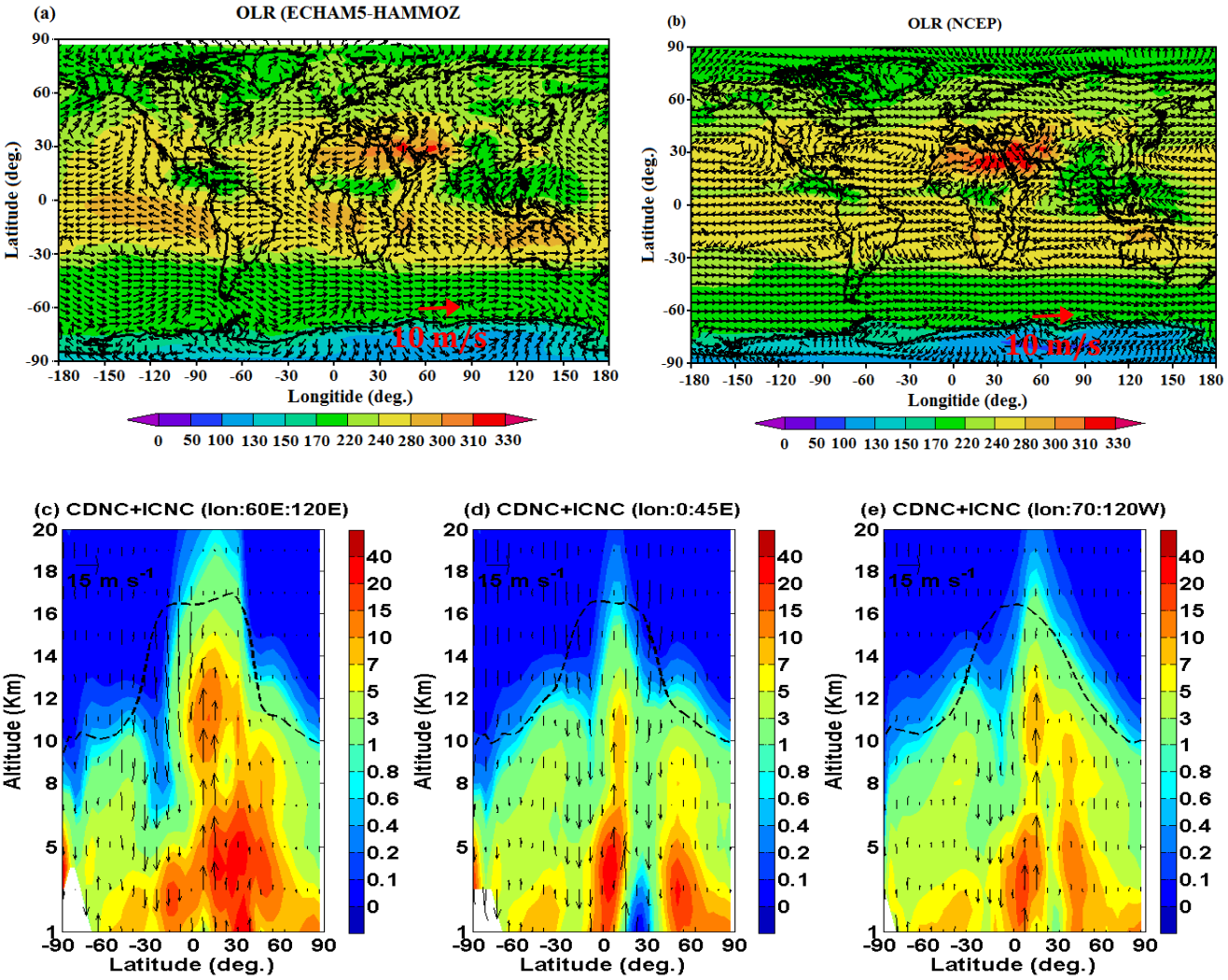

Figure S5. Distribution of simulated (a) Outgoing long wave radiations (OLR) and 850 hpa winds averaged for June–September (2000-2010), (a) ECHAM5-HAMMOZ (b) NCEP-Reanalysis data, ECHAM5-HAMMOZ simulated cloud droplet number concentration (CDNC) and ice crystal number concentration (ICNC) (1 mg−1) averaged for June–September (2000-2010) (c) zonal average between 60-120^{O}E and (d) zonal average between 70W and 120^{O} E (e) zonal average between 0-45^{O} E. The black arrows indicate wind vectors. In figures (c)-(e) the vertical velocity field has been scaled by 300.

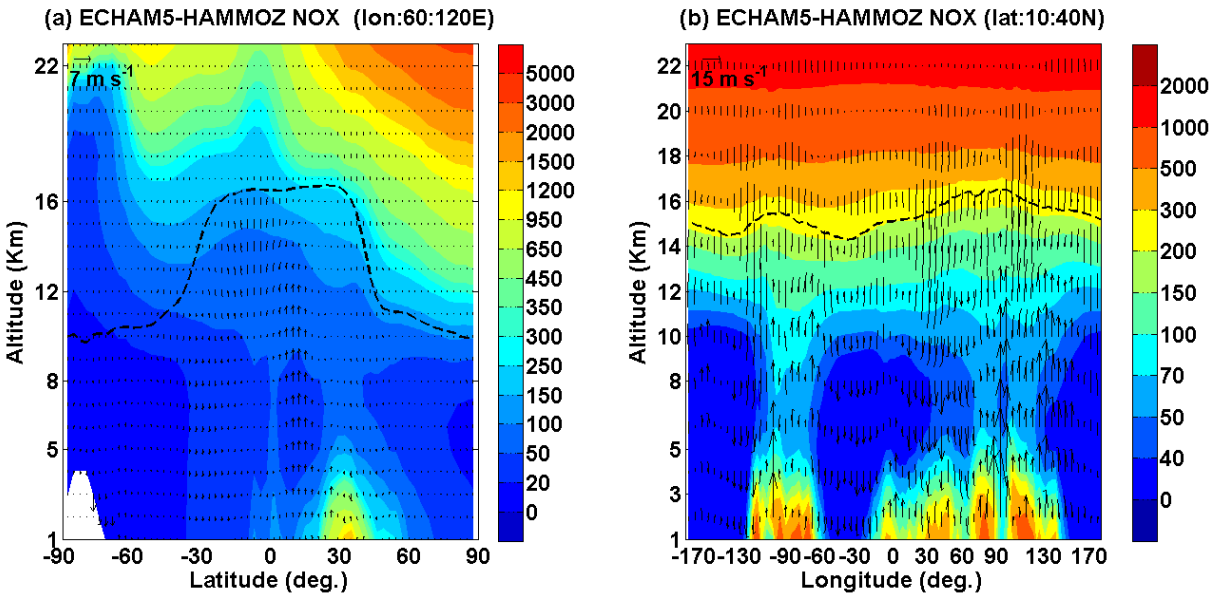

Figure S6. Seasonal mean ECHAM5-HAMMOZ NO_x (ppt) obtained from reference simulation (a) Latitude -pressure cross section averaged over 60^O E - 120^O E (b) Longitude-pressure cross section averaged over 10^O N - 40^O N. The black arrows indicate wind vectors. The vertical velocity field has been scaled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