Interpretation of the observations

HCl [5] as stratospheric tracer turned out to be good for tracing back the observed signature. It was drafted from the stratosphere at two synoptic disturbances interacting with the monsoon anticyclone. Finally both low-CO - trajectories that show a recent contact to the stratosphere. Air from the lower troposphere must have been contained in the monsoon anticyclone for longer. NOy seems to be mostly from inside the Indian monsoon anticyclone.

Comparisons of the monsoon flight to simulation results

Upper tropospheric air originating in the monsoon anticyclone is climatologically impacted by specific dynamical and chemical processes. During a flight on 18 Sept. 2012 from the Maldives to Cyprus the outflow of the Asian summer monsoon anticyclone in the upper troposphere was successfully sampled. The origin of the air masses probed is polluted boundary layer air from northern India and the Gulf of Bengal, convectively uplifted to the measurement altitudes. In addition, these air masses partly mixed with air of stratospheric origin in the monsoon anticyclone. We present the HALO observations and accompanying EMAC simulations.

References

[2] Deutsches Zentrum für Luft- und Raumfahrt e.V. Institut für Physik der Atmosphäre

Deutsches Zentrum für Luft- und Raumfahrt e.V. Institut für Physik der Atmosphäre

Klaus-Dirk.Gottschaldt@dlr.de

http://www.dlr.de/ipa