

The composition of the Asian monsoon UTLS as observed by GLORIA during StratoClim

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The GLORIA (Gimballed Limb Observer for Radiance Imaging of the Atmosphere) infrared limb-imaging spectrometer has been operated on board the Geophysica high-altitude aircraft during the StratoClim field campaign from Kathmandu, Nepal in July/August 2017. During several flights over Nepal and India two dimensional cross-sections of various trace gases (e.g. ozone, water vapour, nitric acid, ethane, HCFC-22, ammonia) and aerosol/cloud cover along the flight path have been retrieved from the limb spectra covering an altitude range between about 10 and 20 km with a vertical resolution of 0.5-1 km. In this contribution we will present the detailed observational data together with a discussion supported by trajectory analyses. Further, the GLORIA measurements will be studied by comparison to simulations performed with the atmospheric model systems CLaMS and ICON-ART (ICOsapherical Nonhydrostatic model - Aerosols and Reactive Trace gases).