

# **Climatologies of Stratospheric Nitric Acid Derived from MIPAS/ENVISAT, MLS/UARS, and ATMOS Measurements**

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The climatological distributions of stratospheric nitric acid ( $\text{HNO}_3$ ) volume mixing ratio (VMR) in 2002-2003 are derived from the measurements of the Michelson Interferometer for Passive Atmospheric Sounding (MIPAS) on ENVISAT. The MIPAS data are retrieved from limb-viewing mid-infrared spectra by the science-oriented processor developed at the Institut für Meteorologie und Klimaforschung (IMK), Germany. The MIPAS-measured climatology is compared with those observed by the Microwave Limb Sounder (MLS) onboard the Upper Atmosphere Research Satellite (UARS) and by the Atmospheric Trace Molecule Spectroscopy Experiment (ATMOS) on a series of space shuttle flights in 1990s. In general, the temporal and spatial distributions of monthly means of the MIPAS  $\text{HNO}_3$  VMR agree well for the three data sets. However, significant differences are also observed for special episodes where different  $\text{HNO}_3$  abundances are explained by particular atmospheric processes.