NO AND CO VERTICAL PROFILES DERIVED FROM MIPAS/ENVISAT UNDER CONSIDERATION OF NON-LTE

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The Michelson Interferometer for Passive Atmosphere Sounding (MIPAS) is a mid-IR high-resolution limb sounder on board of the polar orbiter ENVISAT, successfully launched on March 1st, 2002. Operational data processing by ESA covers the retrieval of pressure, temperature, and the mixing ratios of the species O₃, H₂O, HNO₃, CH₄, NO₂, and N₂O below 68 km under assumption of local thermodynamic equilibrium (LTE). However, the analysis of two further important trace gases, NO and CO, requires the consideration of non-LTE in the retrieval scheme due to strong mesospheric and/or thermospheric non-LTE emissions contributing to the measurements. Such a non-LTE retrieval scheme which includes a generic population model for most atmospheric emitters has been developed at IAA/IMK. Preliminary volume mixing ratio profiles of NO and CO derived from MIPAS data with the IAA/IMK non-LTE retrieval processor will be presented. The performance of the retrievals will be discussed in terms of systematic and random errors and averaging kernels.