VALIDATION OF A NEW HNO_3 LINE PARAMETERS AT 7.6 μm USING LABORATORY INTENSITY MEASUREMENTS AND MIPAS SATELLITE SPECTRA

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A new set of line parameters (positions, intensities and line widths) for nitric acid has been generated in the 7.6 μm region using the results of recent high quality experimental laboratory studies and of theoretical calculations. The validation of this new database was performed thanks to limb emission radiances measured in 2002-2012 by the "Michelson Interferometer for Passive Atmospheric Sounding" (MIPAS) instrument on board the ENVISAT satellite. This study will help to improve HNO_3 satellite retrievals by allowing measurements to be performed using simultaneously 11 μm and 7.6 μm microwindows. Hopefully this will be the case for the forthcoming Infrared Atmospheric Sounding Interferometer New Generation (IASI-NG) instrument developed by CNES. IASI-NG will be the key payload element of the future METOP Second Generation (METOP-SG) series of EUMETSAT meteorological polar-orbit satellites.