

# Intercomparison of simultaneously-obtained infrared and visible spectra of ozone and nitrogen dioxide using ACE-FTS and MAESTRO

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Laboratory gas absorption spectra were measured in the visible and infrared spectral regions using SCISAT-1's MAESTRO (Measurement of Aerosol Extinction in the Stratosphere and Troposphere Retrieved by Occultation) and ACE-FTS (Atmospheric Chemistry Experiment – Fourier Transform Spectrometer) spectrometers, respectively. These measurements were obtained by using a specially-designed solar simulator source which supplies stable, high-intensity illumination across a very wide spectral region. Spectra resulting from the absorption of solar simulator light by ozone and nitrogen dioxide in a gas cell were recorded by the two instruments simultaneously. An intercomparison of these measurements was used to assess the relative accuracy of the HITRAN ozone infrared band strengths, for which there was a 4 % change between the 2000 and 2004 versions. Results reported here show that Chapuis band cross section strengths are more consistent with the HITRAN 2004 4.8  $\mu\text{m}$  band line strengths than with the 2000 compilation. A similar intercomparison of the nitrogen dioxide 3.4  $\mu\text{m}$  band line strengths with the visible cross-sections indicates a very good agreement between the Vandaele et al. (2002) temperature-corrected cross-sections and the HITRAN 2004 infrared line strengths.