Geophysical Research Abstracts
Vol. 13, EGU2011-10584, 2011
EGU General Assembly 2011

Line-mixing effects on spectral shape and consequences for laboratory and atmospheric spectra analyses

Ha Tran (1), Jean-Michel Hartmann (1), and Geoffrey Toon (2)

(1) LISA, Universite Paris Est et Universite Paris Diderot, 94010 Creteil Cedex, France (ha.tran@lisa.u-pec.fr), (2) JPL, California Institute of Technology, 4800 Oak Grove Drive, Pasadena, CA 91109, USA

Collisional line-mixing is a process which is known to affect the treatment of atmospheric spectra for several species. Recent works on the modelling of line-mixing effects will be presented for CO_2, CH_4 and O_3. It will be shown that the widely used Voigt profile leads to large discrepancies with respect to measured spectra and accounting for line-mixing effects is unavoidable to correctly model measurements. Comparisons between laboratory, atmospheric spectra and simulations using our models show good agreements. However, small but systematic errors on the residuals still remain indicating that more refined works on spectral shape are needed.