



Stratospheric distribution of CO₂ from MIPAS measurements

M. Carlotti (1), B.M. Dinelli (2), F.C. Niro (3), E. Papandrea (1)

(1) Dip. Chimica Fisica e Inorganica, Universita' di Bologna, Bologna - Italy, (2) ISAC-CNR, Bologna - Italy, (3) SERCO -Italia, Frascati - Italy

A part of the measurements of MIPAS/ENVISAT in the year 2003, at nominal spatial and spectral resolution, have been analysed with the 2-D GMTR algorithm [1] in order to obtain the vertical distribution of CO₂ in the stratosphere. The open source GMTR analysis system was operated for the simultaneous retrieval of 2-D fields of pressure, temperature and CO₂ VMR. The analysis of the MIPAS infrared spectra was performed on micro-windows specifically selected for these three targets (p-T and CO₂) by means of the "MW-Make" program [2]. For the purpose of this study the GMTR analysis system has been upgraded in order to take into account the CO₂ line mixing, by using the model and software routines presented in a recent paper [3,] and to perform retrievals on a target-dependent vertical retrieval grid. The results of this analysis will be presented and discussed.

[1] Carlotti, M. et al. , Appl Opt. (to be published in Feb. 2006)

[2] Dudhia, A., V. L. Jay and C. D. Rodgers, App. Optics, 41, 3665, (2002)

[3] F. Niro, K. Jucks and J.-M. Hartmann, JQSRT 95, (2005) 469-481.