



## Atmospheric waves from OMEGA/Mars Express data

**R.Melchiorri**(1), P.Drossart(1), T.Fouchet(1), S.Vinatier(1), F.Forget(2),  
G.Bellucci(3), F.Altieri(3), J.P.Bibring(4), Y.Langevin(4), N.Mannaud(5)

(1)LESIA/OBSPM Meudon France (riccardo.melchiorri@obspm.fr), (2)LMD/Jussieu Paris  
France, (3)IFSI Rome Italie, (4)IAS Orsay France

The OMEGA/Mars Express data have been studied in the 2.0 band of CO<sub>2</sub> for studying the fluctuations in the atmospheric pressure, possibly related to wave activity. Another explanation would be lee waves clouds, which are common in the polar hood at the observed latitude and season. From a line by line model coupled with the environmental parameters derived by the LMD-GCM we produce a dedicated database for each OMEGA observation. This database is used in order to accomplish different tasks as: atmospherical removing tool, for fine analysis of the surface composition; atmospheric composition variations, and finally a study of the atmospherical fluctuations. One of the most difficult tasks in the OMEGA/Mars Express data analysis is the separation of the contributions (atmosphere and ground). Indeed, many atmospherical bands, like the 2 $\mu$ m CO<sub>2</sub> band, are contaminated by mineralogical features, pyroxenes for example. A fully consistent approach requires to include both together in synthetic calculations. Nevertheless the number of the parameters needed to resolve the radiative transfer equation is too high to retrieve the exact solution without the "a priori" knowledge of some of these parameters. We present in this article an infrared spectral simulation of the martian atmosphere for the OMEGA data.