



## **Non-LTE emission in atmospheric observations by OMEGA/Mars Express**

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Atmospheric observations of Mars in limb geometry have been performed for many orbits of Mars Express, in 3-axis stabilized mode. Prominent off-limb emission in CO<sub>2</sub> at 4.3  $\mu\text{m}$  correspond to fluorescent emission of solar light in non-LTE regime. Spatial/spectral scans allow us to observe the vertical structure of the atmosphere at a kilometric vertical scale. CO fluorescence is also observed, and vertically resolved, with peak altitude at  $\approx 50$  km. Variation in intensity and in altitude of the peak emission is observed from orbit to orbit, which seem to indicate atmospheric variability in the upper atmosphere, possibly related to atmospheric structure. Observations in limb geometry will continue with Mars Express to cover other latitude and longitude during the nominal mission. In addition to CO and CO<sub>2</sub> emission, O<sub>2</sub> dayglow emission is also detected in the Northern regions, with a strong latitudinal variation.