



## **Study of martian aerosol with the 2.7 microns co2 band**

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In this work we present an extensive analysis of the atmosphere quantities able to modify the radiance observed in 2.7  $\mu\text{m}$  CO<sub>2</sub> band. Since today in the literature the work of Titov et al. (2000) indicate a direct relation between radiance level and aerosols dust opacity. If this would be true, PFS data would indicate that an extremely high dust opacity is observed in the northern summer season. Our conclusions are however that a straightforward application of these method may result misleading. We present the synthetic spectra computed for different conditions. They demonstrate that high altitudes water ice clouds can significantly contribute to the observed radiation level. Also the vertical distribution of dust can dramatically change the observed radiance level. The results from our calculation, and their comparison with PFS data, indicate that in the northern summer we have to consider water ice particles of size close to 3-4  $\mu\text{m}$ , but the radiance slope inside the 2.7  $\mu\text{m}$  CO<sub>2</sub> band indicates the need to change dust composition.