

Ices on Titan after the Cassini-Huygens mission

ATHENA COUSTENIS¹, BERNARD SCHMITT², SYLVAIN DOUTÉ² ¹LESIA, Paris-Meudon Obs., France ²Laboratoire de Planétologie, Grenoble, France

We will discuss the findings of recent measurements on Titan by the Cassini spacecraft and also by the instruments on board the Huygens probe (DISR in particular) and their implications on the nature of Titan's surface. Also, groundbased observations in spectroscopy and imaging (from the VLT, CFHT and WHT telescopes with adaptive optics allowing to resolve the disk) have brought insights on the possible ices present on the surface of the satellite. Thus, we have considered possible candidates such as water ice, hydrocarbon ice (methane or ethane in particular), CO₂ and NH₃ ices, as pure constituents or mixtures.

We will aim to give a comprehensive updated view of our knowledge on the possible surface constituents on Titan.

References

- [1] Coustenis, A., B. Schmitt, R. Khanna, F. Trotta 1999. Plausible condensates in Titan's stratosphere from Voyager IR spectra. *Plan. Space Sci*, **47**, 1305-1329.
- [2] Schmitt, B., Quirico, E., Trotta, F., Grundy, W. M., 1998. Optical properties of ices from UV to infrared. In "Solar System Ices", Schmitt, B., de Bergh, C., Festou, M. (Eds.), Kluwer Academic Publ., Astroph. Space Sci. Library, 227, 199-240.