

New constraints on Titan's atmospheric methane variability from Cassini/CIRS and its influence on laboratory tholins composition



link to abstract

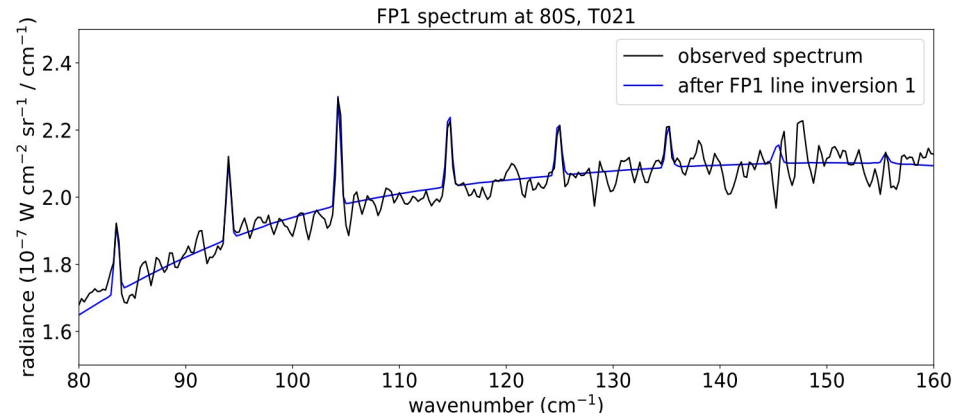
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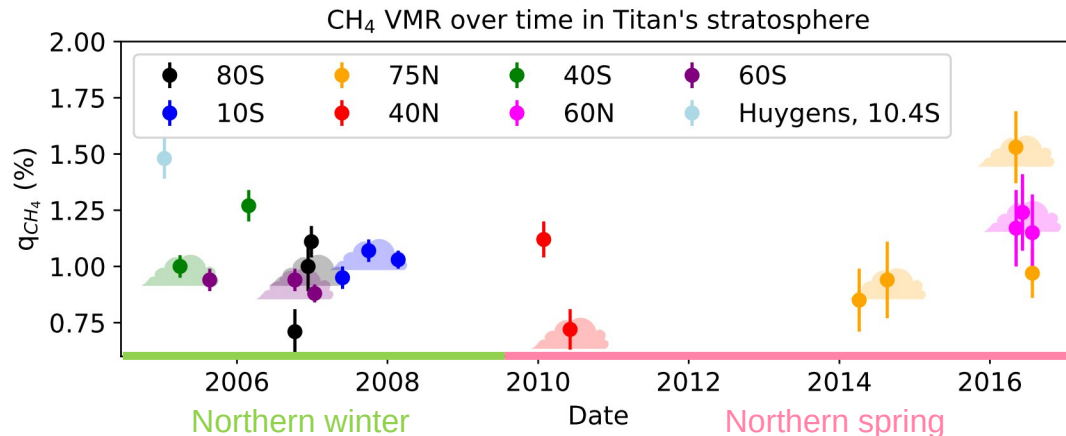
2 : LATMOS/IPSL, UVSQ Université Paris-Saclay, Sorbonne Université, CNRS, Guyancourt, France

I : CH₄ variations in the **stratosphere** : are they linked to tropospheric CH₄ clouds ?

Method : inversion of thermal emission Cassini/CIRS spectra captured around cloud events

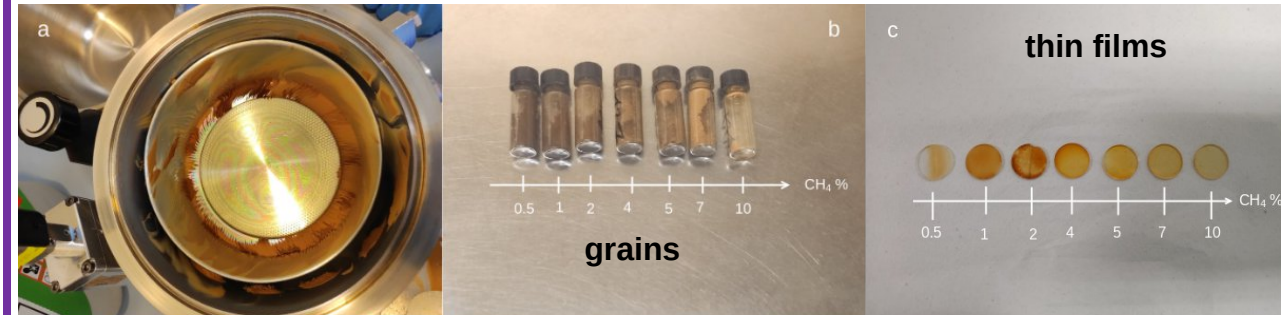


Results : stratospheric CH₄ abundance variations between 0.7 and 1.5 ± 0.1%, faster than seasonal changes of global dynamics



II : CH₄ variations in the **ionosphere** : impact on composition and absorption of haze particles ?

Method : production of PAMPRE tholins (Titan haze analogs) with 0.5-10% of injected CH₄



Results : Intensity of absorption bands varies with injected CH₄ for tholins, same variations are observed seasonally on Titan haze spectra (cf Colombe Maurice's poster)

