



## **Stratospheric composition of Titan from Cassini/CIRS observations**

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We have analyzed data recorded by the Composite Infrared Spectrometer (CIRS) aboard Cassini mission during the past Titan fly-bys (July -April 2004). The spectra characterize various regions on Titan from south to north pole and with various emission angles. We study the emission observed in the 3 CIRS detectors (covering roughly the 10-1500  $\text{cm}^{-1}$  spectral range with a 0.53  $\text{cm}^{-1}$  apodized resolution at best). The composite spectrum shows a large variety of molecular signatures : hydrocarbons, nitriles and 2 (possibly 3) oxygen components. We have used a temperature profile retrieved by inversion of the emission observed in the methane  $\nu_4$  band at 1304  $\text{cm}^{-1}$  and a line-by-line radiative transfer code to infer the abundances of the trace constituents and their isotopes in Titan's stratosphere. We will compare these mixing ratios with values retrieved two Titan seasons ago by V1 and V2 IRIS observations, with more recent disk-averaged Infrared Space Observatory (ISO) results and with the latest Cassini-Huygens inferences from other instruments.