



Titan's temperature profile from the ground to the mesosphere from Cassini-Huygens CIRS and HASI measurements

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During the Titan's flybys operated by the Cassini orbiter, data were recorded in its FP1 and FP4 detectors by the Composite Infrared Spectrometer (CIRS) allowing for the retrieval of a thermal profile from roughly 80 up to 450 km in altitude. During the Huygens descent through Titan's atmosphere in January 2005, the Huygens Atmospheric Structure Instrument (HASI) obtained measurements from the ground and up to 1200 km (combining the temperature sensor and the accelerometer data).

In this paper we concentrate in the part of the atmosphere between the ground and the stratopause (second temperature inversion) and compare CIRS findings from latitudes associated with the Huygens landing site and the HASI-retrieved temperature profile. The combination of the two datasets should provide a very reliable insight on the thermal structure of Titan in its neutral atmosphere.