

The characteristics of Titan's atmosphere by the Huygens Atmospheric Structure Instrument (HASI) measurements.

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The Huygens Atmospheric Structure Instrument (HASI) measured the main physical characteristics of the Titan atmosphere in all the phases of the Huygens probe mission at Titan: entry, descent and impact.

The accelerometers (ACC sensors) provided data from the very beginning of the entry phase (1500 km altitude) allowing us to obtain in the upper atmosphere the density profile from which we derived pressure and temperature profiles under the assumption of hydrostatic equilibrium.

Temperature and pressure profile were obtained by direct measurements of T (TEM sensors) and P (PPI package) during descent and impact, providing us with hints on the vertical structure of Titan's lower atmosphere.

The electrical properties, as the permittivity at 45 Hz and the conductivity, of the atmosphere have been measured during the whole descent phase and at the surface of Titan by the Permittivity and Wave Analysis (PWA) sensors.

The radar altimeter data collected in the range of elevation 0-30 km have been processed by the FFT device of the HASI data processing unit, providing us with both information on the elevation of the probe in the last part of the descent and on some physical properties of Titan's surface.

Furthermore the ACC recorded the signature of the impact of the probe at the surface of Titan.

An overview of the obtained results concerning the atmospheric structure and electrical properties will be presented and discussed