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Electric Fields, acoustic Waves and Permittivity Measurements performed by HUYGENS during its Descent through the Atmosphere and after its Impact on the Surface of Titan

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We present some preliminary results obtained by the HASI-PWA instrument on the ESA probe HUYGENS. The electrical properties of the lower ionosphere and atmosphere of Titan are measured with the mutual impedance and relaxation probes. They yield information about the complex permittivity of the atmosphere from which electrical conductivity and electron density can be derived. The real and imaginary parts of the dielectric constant of the ground are measured after impact. The dynamic spectra of the AC electric field and acoustic waves are recorded in a bandwidth of 10 kHz and 6 kHz, respectively. They will reveal the possible occurrences of lightning during the descent of HUYGENS on Titan.