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Preliminary analysis of the extremely low frequency signals measured with the PWA-HASI instrument on Titan

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The Permittivity, Waves, and Altimetry analyzer, a subunit of the Huygens Atmospheric Structure Instrument onboard of the Huygens Probe, is dedicated to the study of electric phenomena and measured the electric field in the bandwidth 0-10 kHz during the descent of the Probe through the atmosphere of Titan. A characteristic feature is observed at around 36 Hz, which may provide information about wave activity in the atmosphere. We present several hypotheses about the nature of this signal that can be related to natural phenomena taking place in the atmosphere of Titan. We tentatively assume the signal is similar to the Schumann resonance observed on Earth and compare the results with a numerical model that describes the resonance in the surface-ionosphere cavity of Titan.