Geophysical Research Abstracts
Vol. 13, EGU2011-8022-2, 2011
EGU General Assembly 2011

Jovian decametric and hectometric events subject to the Io plasma torus effect

Mohammed Y. Boudjada (1), Patrick Galopeau (2), and Wolfgang Macher (1)

(1) Institut für Weltraumforschung, Extraterrestrial Physics, Graz, Austria (mohammed.boudjada@oeaw.ac.at, 0043-316-4120-690), (2) Université Versailles St-Quentin; CNRS/INSU, LATMOS-IPSL, Guyancourt, France

We analyze the spectral variation of Jovian decametric (DAM) and hectometric (HOM) emissions recorded by Cassini/RPWS experiment during its Jupiter flyby. It is well known that the HOM radiation is highly affected by refraction effects caused by the Io plasma torus, as reported for the first time by the Voyager mission. A statistical analysis covering a period of several weeks leads us to find that the attenuation effect of the Io plasma torus reaches frequencies higher than 4 MHz and up to 8 MHz. In this bandwidth of about 4 MHz, the HOM and DAM overlap each other which make more difficult the separation between those radio components. We discuss in this contribution, the particularity of such DAM/HOM events with regards to the Jovian magnetic field and the source locations, and the origin of the electronic density enhancement in the Io torus which may be related to the Io volcanic activity.