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Local time dependence of Io plasma torus

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We study the frequency and time variations of the Jovian decametric (DAM) and hectometric (HOM) emissions recorded by the RPWS experiment onboard Cassini spacecraft during its Jupiter flyby. It is shown that the HOM radiations are principally subject to refraction effects caused by the Io plasma torus. We analyze the Jovian radio dynamic spectra recorded from the end of November 2000 to the second week of January 2001. During this period, the spacecraft approached Jupiter from a distance of more than 500 RJ to 137 RJ (closest approach on December 30, 2010) and back to about 250 RJ. We attempt in this study to investigate the local time (LT) dependence of the attenuation band due to refraction effects caused by the presence of the Io plasma torus. We analyze the spectral features of the attenuation band taking into consideration three local time intervals [10.0 LT, 13.2 LT], [13.6 LT, 16.5 LT], and [16.7 LT, 20 LT]. A statistical study leads us to characterize the spectral features of the attenuation band principally on the dayside and the late afternoon sector of the planet. This will allow us to discuss the LT variation of the electronic density of the Io plasma torus versus the central meridian longitude (CML) and the Jovian magnetic latitude.