

Periodic bursts of non-Io Jovian decametric radiation: New aspects

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Abstract

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We present the analysis of the periodic radio bursts of the non-Io component of Jovian decametric radio emission (non-Io DAM) recently revealed in the dynamic radio spectra recorded by STEREO/WAVES, Wind/WAVES and Cassini/RPWS instruments in a frequency range from 5 MHz up to 16 MHz during the time interval between the years 2002-2010 [Panchenko *et al.*, 2010]. Periodic non-Io bursts of DAM typically recur during several Jovian days with a surprisingly new period of 10.07 hour. This period is 1.5% longer than the rotation period of the Jovian magnetosphere (System III, 9.925 hour) and 1.5% shorter than the averaged period of the Io torus rotation (System IV). All bursts were detected within the same sector of Jovian Central Meridian Longitude, between 300° and 60° (via 360°) of CML, close to the region of non-Io-C source. Most probably, the sources of the periodic bursts sub-corotate with Jupiter. In this study we report a new statistic of the periodic bursts based mainly on more than three years of STEREO/WAVES observations. Polarization characteristic of the bursts, evaluated from Cassini/RPWS measurements during Jupiter flyby, as well as the analysis of the relations between occurrence of the periodic burst and non-Io storms and solar wind activity will be presented.

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References

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