

## Simultaneous observations of periodic non-Io decametric radio emission by ground radio telescope URAN-2 and STEREO/WAVES.

M. Panchenko(1), A.I. Brazhenko (2), H.O. Rucker (1), A. Frantuzenko (2), V.E. Shaposhnikov (3), A.A. Konovalenko (4) and STEREO/WAVES team.

(1) Space Research Institute, Austrian Academy of Sciences, Graz, Austria (mykhaylo.panchenko@oeaw.ac.at), (2) Institute of Geophysics, Gravimetric Observatory, Poltava, Ukraine, (3) Institute of Applied Physics, Nizhny Novgorod, Russia, (4) Institute of Radio Astronomy, Kharkiv, Ukraine

### Abstract

Periodic bursts of the non-Io component of Jovian decametric radio emission (non-Io DAM) is observed as (1) series of arc-like radio bursts with negative frequency drift which reoccur with 1.5% longer period than the Jovian magnetosphere rotation rate, (2) series of bursts with positive frequency drift which reoccur with Jupiter's rotation period and (3) periodic non-arc like radio features [1, 2]. These bursts are typically detected during several Jupiter rotations in decametric frequency range from 4 MHz to 12 – 16 MHz between  $300^\circ$  and  $60^\circ$  of CML. We present simultaneous observations of the periodic non-Io controlled DAM performed by the WAVES radio experiment onboard the two STEREO spacecraft and the ground-based radio telescope URAN-2 (Poltava, Ukraine) operated in the decametric frequency range. URAN-2 with an effective area of about  $30000\text{ m}^2$  consists of 512 broadband crossed dipoles and equipped with the high performance digital radio spectrometer with polarization measurement capability. During the observation campaign Sep., 2012 – Apr., 2013 URAN-2 recorded a large amount of Jovian DAM events with the high time-frequency resolution (4 kHz - 100 ms) in a frequency range 8-32 MHz. In the same time the two spatially separated STEREO spacecraft was able to observe DAM in the frequency range up to 16 MHz. The first analysis of the acquired stereoscopic observations is presented. In particular, we show one episode when the periodic non-arc DAM was recorded together with long lasting Jovian narrow band (NB) emissions. These NB emission was observed at the high frequency cutoff of DAM and can be interpreted as propagation of the decametric radiation in the Jovian ionosphere [3]. We discuss the possible relations between the observed NB events and the periodic non-

Io controlled Jovian decametric radio emission.

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