



Sub-hour modulation of L-component of Io-related Jovian decametric emission

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The variability of Jovian decametric emission (DAM) is studied at time scales from 1 minute to 1 hour with the DAM records of 1991-2007 from the archive of Nancy Radio Observatory. It is found that the internal structure of the Io related radio storms has the dominating periodicity of 23 min on average. This estimation practically coincides with the fundamental eigenoscillations of transversal magnetic pulsations in the Io plasma torus. Our autocorrelation analysis confirms the excess of DAM variations with the time scale about the fundamental and first harmonic periods of the Io's torus. Moreover, the time scale of arc pattern in DAM dynamic spectra is estimated of 5.4 min that corresponds to the Io's Alfvén wing diameter or to the 3th & 4th harmonics of torus proper oscillations.

These results could be interpreted in terms of electron acceleration in field-aligned electric fields of standing Alfvén waves which are trapped in the Io torus. There is an analogous modulation of auroral kilometric radiation of the Earth by magnetic pulsations at field line resonances in the terrestrial magnetosphere (Hanasz et al. 2006).

Hanasz, J., de Feraudy, H., Schreiber, R., Panchenko M. 2006, *J. Geophys. Res.*, 2006, 111, A03209, doi: 10.1029/2005JA011302