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Sub-hour modulation of non-Io Jovian decametric emission

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The variability of Jovian decametric emission (DAM), which is not controlled by the Io satellite (non-Io), is studied at time scales from 1 minute to 1 hour with DAM records of 1991-2007 from the archive of Nancay Radio Observatory. We found that the internal structure of the non-Io radio storms has the dominating periodicity of 21 $\pm$ 2 min on average. This estimate practically coincides with the periodicity of Io-related emission and with fundamental eigenoscillations of transversal magnetic pulsations in the Io's plasma torus. Moreover, the average duration of an arc in non-Io DAM dynamic spectra is estimated to be 7.0 $\pm$ 0.3 min, although the most probable value is 5.3 $\pm$0.7 min, which corresponds to Io-related arcs and the 3rd & 4th harmonics of torus proper oscillations. Our results could be interpreted in terms of electron acceleration in field-aligned electric fields of standing Alfven waves generated by Io and trapped in the Io torus. This interpretation agrees with the previous arguments for the location of some sources of Non-Io emission on the magnetic shell of the Io plasma torus. However, the aurora component of non-Io DAM is not excluded, as the suggested DAM modulation by the fundamental mode of genoscillations inherent in aurora magnetic lines is undetectable in our analysis because of the short duration of non-Io radio storms.