

## Multi-frequency observation of Jupiter's synchrotron radiation from 325 to 2300MHz

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Jupiter's synchrotron radiation (JSR) is generated by the relativistic electrons trapped in Jupiter's inner radiation belt. Variation of JSR is, therefore, an important probe to investigate generation and dissipation processes of the relativistic electrons and deformation of their global distribution in Jupiter's inner magnetosphere. Regular and systematic JSR observations have been made by several groups including us and revealed the existence of short term variations at a time scale of several days to months inferring some electro-magnetic activities in the inner magnetosphere (Klein et al., 1997; Galopeau et al., 1997; Miyoshi et al., 1999; Misawa and Morioka, 2000). Nowadays it's the time to investigate the details of variation characteristics and origin of the time variation.

A program of a multi-frequency observation for JSR has been started since 2001. The JSR spectrum measurements give us information of variations of pitch angle and/or characteristics of radial diffusion of the relativistic electrons. In this program three observation frequencies measured with different facilities are adopted; i.e., 325MHz at Tohoku Univ., Japan, 929MHz at EISCAT, and 2.3GHz at Comm. Res. Lab.(CRL), Japan. JSR at the frequency range is generated from the relativistic electrons at the energy from 6 to 20MeV in Jupiter's inner magnetosphere. After a preliminary observation held in 2001 and 2002, approximately a 2 week successive JSR observation has been made in 2003 at the three frequencies from the middle to end of October in 2003. A preliminary analysis for the spectrum observation shows a small variation of JSR flux density, however also shows some of the data include unexcludable flux fluctuations caused by solar radio emissions.

In the presentation, outline and objectives of the spectrum observation will be shown with the first result of the successive JSR observation below 1GHz.

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