

# Characteristics of long and short term variations of the Jovian synchrotron radiation at a frequency of 327MHz

# Shiho Nomura[1]; Hiroaki Misawa[2]; Fuminori Tsuchiya[3]; Akira Morioka[4]

[1] Planet. Plasma Atmos. Res. Cent., Tohoku Univ.; [2] PPARC, Tohoku Univ.; [3] Planet. Plasma Atmos. Res. Cent., Tohoku Univ.; [4] Planet. Plasma and Atmos. Res. Cent., Tohoku Univ.

The Jovian synchrotron radiation (JSR) is a radio wave emitted from the relativistic electrons in the Jovian radiation belt, which has information of dynamics of high-energy particles and electromagnetic disturbances in the Jovian inner magnetosphere. The intensity variation of JSR, however, has been little understood in its timescales and origin. We have observed JSR for several months a year since 1994 to reveal characteristics of the flux variations especially at the time scales of days to months (short-term) and years (long-term). The regular observations have been made at a frequency of 327MHz by using parabolic cylinder antennas of the Solar Terrestrial Environment Laboratory, Nagoya University. The observed JSR flux includes apparent variation due to inevitable system gain variation of the radio receiving system. In order to compensate the system gain variation, we have evaluated system gain using a flux reference radio source that was observed quasi-simultaneously with JSR, and made observations of 'actual' galactic back-ground radiation with a highly stable radio receiving system of Tohoku University.

As the result, we derived the JSR flux densities for 1994 - 2003 successfully and confirmed significant flux variations in both short and long time scales. In the presentation, we will introduce characteristics of the JSR flux variations and infer causalities of the variations based on correlation analyses between the flux variations and parameters of solar activity and solar wind.