Total flux measurement of Jupiter's synchrotron radiation at 325MHz during the HISAKI-JUNO campaign period

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Ground-based radio monitoring of Jupiter's synchrotron radiation is a useful probe to investigate time variability of Jupiter's electron radiation belt. Previous studies showed correlation between short-term variation in intensity of the synchrotron radiation and the solar EUV flux, suggesting enhancement of radial diffusion in the radiation belt driven by electric field fluctuations generated in Jupiter's upper atmosphere. In addition, some reports reported a possible relationship between the synchrotron radiation and the solar wind. But more observations are needed to obtain a definitive conclusion. Here, we will report a preliminary result of the total flux measurement of Jupiter's synchrotron radiation with Iitate planetary radio telescope (IPRT) from May to July in 2016. During this period, the JUNO spacecraft was approaching to Jupiter and monitored the solar wind parameters upstream of Jupiter. HISAKI observed the brightness of both Io plasma torus and Jupiter's aurora, and monitored magnetosphere activity in the Jovian magnetosphere. For the total flux measurement of the synchrotron radiation, a backend receiver of IPRT was replaced to improve sensitivity of the measurement. The new receiver consists of a base-band down-converter and a digital waveform receiver developed by NICT (VSSP32). We will report overview of the new receiving system and preliminary results of the total flux measurement of Jupiter's synchrotron radiation during the HISAKI-JUNO campaign period.