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Ground-based Decameter Wavelength Observations of Saturn Electrostatic Discharges

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We report the detection of Saturn atmospheric lightnings by the using of the largest decameter UTR-2 radio telescope at frequencies 20 – 25 MHz during the observations on 29 Jan.-2 Feb., 2006. The reached sensitivity (ΔS_{min}= 30 Jy and 4 Jy for the effective area of 100,000 sq. m, time constant of 20 ms and frequency band of 60 kHz and 3 MHz), implemented methods and criteria of detection (ON – OFF multi-comparing approach) allowed to registrate of about 70 events. Flux densities are within 50 – 800 Jy, the duration of the pulses is 50-200 ms. These experiments were started according to Cassini RPWS data about of the new SED activity period (E-storm) at the end of the January 2006. Our results confirmed previous estimations concerning SED max. flux densities on the ground at the level of 100 – 1000 Jy. So, the possibilities of the ground-based observations of weak sporadic radio emission phenomena at the decameter wavelength with the using of the largest existing radio telescopes as well as by future giant low frequency instruments (LOFAR, LWA) are proved.