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Ground-based study of Saturn lightning

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Lightning-generated radio emission from Saturn has been observed by satellite missions (1980, 1981, and since 2004) and from the ground (since 2006). The detection of SED allows to study electrification processes, atmospheric dynamics, geographical and seasonal variations. Using a new broadband receiver at UTR-2 (Ukraine), Saturn lightning was detected over the whole spectral range of the instrument (10-30 MHz) in December 2007. For the first time, this allowed to study the instantaneous spectrum of the discharge, and the temporal fine structure of the emission could be studied with a temporal resolution surpassing that of regular satellite observations. The complementarity of ground-based and space-borne observations is discussed, and future observation plans are presented.