



The response of magnetospheric substorm activity in the characteristics of burst regime of long-period irregular pulsations in a frequency band 2.1-5.5 mHz

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The results of investigation of the characteristics series of pulsations ipcl (irregular pulsations, continuous, long) bursts are given at different substorm activity (characterized quantity of the AE-index) in a night magnetosphere of the Earth. Using the data of an Antarctic observatory Mirny (corrected geomagnetic coordinates -76.93, 122.92), 170 series of ipcl bursts are explored. It was found, that 45 series of ipcl bursts events (I group) were observed against a background of substorms development ($AE > 100$ nT) and in 125 cases of series of ipcl bursts (II group) substorms were absented ($AE < 50$ nT) in night sector of a magnetosphere. The difference in some characteristics of series of pulsations ipcl bursts (amplitudes of bursts, duration of bursts series, and diurnal variation of the occurrence frequency of bursts) of the first and second groups was found. However of difference in the duration and the filling frequency of separate bursts of both groups was not detected. It was shown, that experimental distributions functions of bursts ipcl duration in case of the first and second groups are approximated by exponential function with identical exponents. The experimental distributions of the ipcl bursts duration is in a rather good agreement with distribution inherent to the type III intermittence. It was found, that series of bursts ipcl of both groups have properties of transition to chaos through the intermittence. It is possible to suppose, that the generation of series of pulsations ipcl bursts is interior process of a magnetosphere, the excitation which does not depend on the exterior factors. The work was supported by the Russian Foundation of Basic Researches (project 03-05-64545).