Geophysical Research Abstracts, Vol. 8, 01154, 2006
SRef-ID: 1607-7962/gra/EGU06-A-01154

Conformities of simultaneous observations of high-latitude magnetic impulses (MIEs) and impulsive bursts in a band Pc1-2

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The analysis of simultaneous observations of a magnetic field in two frequency bands 1.0-4.0 mHz and 0.1-1.0 Hz on magnetograms at the Antarctic magnetic observatory Mirny (corrected geomagnetic coordinates -76.93, 122.92) was carried out. As a result of investigation 128 cases of simultaneous observations of high-latitude magnetic impulse events (MIEs) and impulsive bursts in a band Pc1-2 in the area of polar cusp was found, that there are three groups MIEs. It was revealed, that 16 % MIEs (I group) were accompanied by bursts of geomagnetic pulsations with rising periods (type IPRP), 48 % MIEs (II group) were accompanied impulsive bursts with a broad and non-stationary frequency spectrum (type Pi1B) and 36 % MIEs (III group) were not accompanied by geomagnetic pulsations of a high-frequency band. In dominant number of cases the occurrence of impulsive bursts coincides with MIEs a leading front. The impulses, accompanied by the bursts IPRP and Pi1B, were observed predominantly in postnoon sector (12-14 MLT) at Bz $>$ 0. The impulses, which are not accompanied by impulsive bursts, were recorded in prenoon sector (10-11 MLT) at Bz $<$ 0. By the first two groups source can be a turbulence of field-aligned currents system of the dayside cusp, flow into the ionosphere of a southern hemisphere in postnoon sector and being a consequence reconnection in area disposed near dayside cusp. The source of the MIEs third group can be stipulated by reconnection processes on a dayside magnetopause and is connected with a turbulence of field-aligned currents flow away from the ionosphere in prenoon time. The work was supported by the Russian Foundation of Basic Researches (project 03-05-64545).