

Localized high-latitude Pc1 events observed on the ground under the large negative IMF Bz conditions

Safargaleev V.V., Serebryanskaya A.V., Pchelkina E.V., Vasilyev A.N. (*Polar Geophysical Institute, Apatity, 184200, Russia*)

The data of induction magnetometer installed at Barentsburg observatory in Spitsbergen archipelago are analyzed in combination with the data of two other magnetometers located on Scandinavian and Kola Peninsulas. We considered the intervals of very large negative IMF Bz when the cusp is assumed to be shifted at large distance south of its statistical position and Spitsbergen turns out in the polar cap. Altogether, eight intervals were considered. In all cases the DMSP data indicated that Barentsburg observatory was in the polar cap, whereas the location of two others might be associated with either cusp or llbl or bps projections. The magnetic pulsations of Pc1 frequency range were observed around the local noon and in the polar cap only. They had a form of several short-living bursts and lasted for 5 – 15 minutes. In the cases when the CUTLAS data were available, the interval of Pc1 activity coincided well with the appearance and decay of fast ionospheric convection flow channel. We think that these pulsations are originated from the magnetosheath (namely, from the plasma depletion layer) where the plasma is anisotropic and undergoes the IC-instability. Due to impulsive reconnection, the unstable plasma turns out on the magnetic field lines connected with the Earth's ionosphere and IC-waves may be seen on the ground as the bursts of Pc1.