

# HIGH-LATITUDE GEOMAGNETIC SUBSTORMS AND PULSATIONS BASED ON ARCTIC OBSERVATIONS

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It is well known that typical geomagnetic disturbances in auroral and polar latitudes are substorms and substorm-associated Pi2 ( $f \sim 8-20$  мГц, i.e.  $T \sim 50-120$  s) and Pi3 ( $f \sim 1-5$  мГц, i.e.  $T \sim 3-15$  min) geomagnetic pulsations. The main properties of these classical phenomena are discussed. A new type of high-latitude geomagnetic bay-like disturbances, accompanied by long-lasting Pi2-3 pulsations, has been found based on the analysis of ground high-latitude observations in Arctic region. We called these disturbances “polar substorm”, because they are recorded at the geomagnetic latitudes higher than  $70^\circ$  (i.e., in the vicinity of the polar border of the auroral oval) under the absence of the magnetic activity at the lower, auroral latitudes. The comparison some magnetic data, obtained from Scandinavian IMAGE profile, with the observations at several Russian Arctic stations (Cheluskin, Amderma and Norilsk, belonged to Arctic and Antarctic Research Institute) showed that the strongest polar substorm-associated Pi2-3 pulsations as well as polar substorms are recorded in the evening sector, not near midnight, as it was expected. The pulsation bursts were accompanied by visible auroras intensifications. The possible sources of a polar substorm are discussed. For future investigation, there is very important to establish regular observations at new INTERMAGNET stations in the Russian Arctic region.