High energy electron precipitation measured in polar cap by Coronas-I satellite

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Several events of high-energy electron (>500 keV) precipitation (HEP) have been observed by satellite Coronas-I particle detector on polar cap parts of the orbit. Investigation of the ground-based magnetometer and riometer data shows, that HEP do not belong during of the magnetic storms, but more exactly to the moderate magnetic disturbances of several day duration. The HEP events were observed on polar cap latitude (>80 degree) usually associated with open magnetotail field lines. Signatures of the magnetic activity reveal clear similarity with auroral oval substorm intensifications. Detail analysis shows that electron fluxes appear in a polar cap after auroral zone substorms. Several possible explanations of the high energy electron arrival over polar cap are discussed.