Multipoint observations of the low frequency plasma waves in the polar cusp associated with strong fluxes of the energetic particles

J. Blecki (1), N. Cornilleau-Wehrlin (2), M. Parrot (4), S. Savin (3), S. Woźniak (1), R. Wronowski (1).

(1) Space Research Centre PAS 00-716 Warsaw, Bartycka 18A, Poland,

(2) CETP/Velizy, France

(3) Space Research Institute RAS, Moscow, Russia,

(4) LPCE/CNRS, Orléans, France

(jblecki@cbk.waw.pl / Fax +48 22 8403131)

The emissions with extremely high intensity around electron cyclotron frequency have been sometimes registered by satellite Magion 4 - companion of Interball 1. These waves correlate with strong fluxes of high energetic electrons often observed within the polar cusp by Interball 1 and Magion 4 as well as by Polar satellites. Multipoint measurements done by Cluster satellites give new insight of these emissions. The observations of the waves at the frequencies close to electron cyclotron frequency done by Magion 4 and Cluster satellites associated with strong fluxes of energetic electrons will be presented. The study of the spatial scales of the events will be presented using 4 Cluster satellites. Taking into account the plasma and magnetic field parameters in the polar cusp as well as geometry of the waves propagation, one has found that these emissions can be generated by so called “fan instability”, but other beam instabilities in relation to given observations will be also discussed in this presentation.