



Cluster-Whisper observations of small scale electrostatic structures close to the magnetopause

P. Canu (1), P. Décréau (2), N. Cornilleau-Wehrin (1), D. Fontaine (1), A. Fazarkaley (3), M. Dunlop (4), J. G. Trotignon (2), J. L. Rauch (2), Y. Khotyaintsev(5)

(1) CETP/CNRS/IPSL, Vélizy, France, (2) LPCE/CNRS and Université d'Orléans, France, (3) MSSL, UK, (4) RAL UK, (5) IRFU, Sweden

Intense and localized bursts of electrostatic emissions at frequencies close to the local electron plasma frequency are observed close to the magnetopause, presumably in the boundary layer, by the Whisper instruments on board the Cluster spacecraft. The data combined from the four points measurements have shown that the size of these structure can be of a few tens of kilometers. Although electrostatic emissions in this frequency range are usually attributed to free energy in the electrons distribution function, no correlations have yet been observed between these emissions and the electrons fluxes. We present here the main characteristics of these structures derived so far from the four Cluster spacecraft at close separations (100-200 km).