



ULF waves properties in the cusp and in the magnetosheath during a Cluster inbound magnetopause crossing

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On January 5th 2002, the Cluster fleet entered the dusk side of the distant polar cusp (inbound). Spacecraft 1, 2 and 4 encountered the magnetopause at the same time, 20 minutes before sc3. In the cusp region, spacecraft record strong ion jets and successive ion energy dispersions. When the ion fluxes are intense the STAFF instrument records a strong electromagnetic wave activity in the ultra low frequency (ULF) part of the spectrum which contains the local ion gyrofrequency f_{ci} . Generally, ULF magnetic spectra are characterized by a broadband activity or by a monochromatic peak close to f_{ci} . These two kinds of spectra can be here observed together within short time interval duration. We focus our attention on the monochromatic waves that are detected on each spacecraft in the cusp and that can also be seen in the nearby magnetosheath. Using the Poynting vector and the polarization properties estimated in the cusp and in the magnetosheath with PRASSADCO software applied to EFW and STAFF-SC data. We will address the question of the origin of the waves considering a possible generation process at the magnetopause due to a strong velocity shear.