



## **Generation of monochromatic waves close to fci by upgoing ions in the distant polar cusp**

**B. Grison** (1,2), O. Santolik (2), S. Grimald (3), J. M. Bosqued (4), N. Cornilleau-Wehrin (1), E. Lucek (5), A. Fazakerley (3)

(1) CETP, France, (2) IAP/CAS, Prague and Charles University, Prague, Czech Republic, (3) MSSL-UCL, UK, (4) CESR, France, (5) Imperial College, UK

The ultra low frequency electromagnetic wave activity is well known to be a recurrent feature of the polar cusps. This activity can be broadband meaning that no particular frequency is outlined or monochromatic. This is usually linked to the presence of earthward ion jets of recently injected plasma. Here we present a Cluster case study concerning generation of monochromatic wave by upgoing ions in the distant polar cusp region. The local generation is highlighted by the comparison of the experimental wave vector  $\mathbf{k}$  (measured with k-filtering technique) to the possible propagating modes in the local plasma properties (WHAMP results). An ion temperature anisotropy, detected during more than 10 minutes, is the free energy source for the wave amplification. The aim of the presentation is to explain why wave particle interaction generates a monochromatic structure that is seen only during 45s and not during all the time interval of ion temperature anisotropy.