



Four points observations of NTC in the vicinity of sources: two related cases events

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The Cluster mission, which has been launched during the summer 2000, is a constellation of four identical satellites. The tetrahedral disposition of the satellites allows a spatio-temporal study of the structures they cross. The polar orbit explores a range of key regions of the magnetosphere. The Whisper instrument measures the electric field intensity and frequency in the 2-80 kHz range thus giving access to the observation of Continuum emissions in each of those key regions: solar wind, magnetosheath, cusp, tail, inner magnetosphere (Décréau et al., Ann. Geophys., 2004).

In this paper, we present and discuss specific type of events, infrequent but not unique, of intriguing characteristics. The emissions of the 28 January and the 30 December 2003 take place at the plasmasphere vicinity. Differentiated and parallel Continuum bands are observed. The frequency of a given band decreases with the magnetic latitude and the radiation disappears at the plasmopause crossing. In the 30 December case event, the separation between the four satellites is small (200 km) and the same observations were made on the four frequency-time spectrograms obtained from Whisper data. Then it was also possible to determine the stability of the emission, the beams configuration and also to make hypothesis about the sources position. For the 28 January case event, the separation is large (5000 km) and each observation is different. A comparative study between these two events provides illuminative information guiding answers to the following questions:

- Why differentiated bands? Why a decreasing frequency?
- Where are the sources positions? Are they collocated with the $f = (n + \frac{1}{2}) f_{ce}$

equatorial emission?