



Evidence for NTC emitted from plasmaspheric sources at medium latitudes

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Non-thermal continuum (NTC) radiation is, with auroral kilometric radiation (AKR), one of the two electromagnetic emissions generated within the Earth's magnetosphere and radiated into space. It is generally believed that NTC is emitted by the conversion of an electrostatic wave into an electromagnetic one. This conversion takes place at the magnetic equator and in a density gradient. Furthermore, it has been argued that the electrostatic wave at the source satisfies the relation $f = (n + 1/2) f_{ce}$. Cluster orbit is well adapted to study the NTC radiations near their sources. The two main purposes of the WHISPER experiment are to record the natural waves in the bandwidth 2-83 kHz and to make a diagnostic of the electron density using the sounding technique. The various working modes and the Fourier transforms calculated on board provide a good time and frequency resolution and allow us to detect the fine structure of NTC emissions as well as their spectral characteristics in relation to the local plasma regime (gyro-frequency f_{ce} and plasma frequency f_{pe}).

In this presentation, we present and analyse a very particular event observed with the CLUSTER constellation near the plasmapause. Contrary to the common narrow-band spectral signature of NTC, this event presents a wide band spectral signature. Moreover, the frequency range of the emission is splintered in several harmonic bands. This kind of event was first observed in the WHISPER data, it's infrequent but not alone. The study of the stability with time of the emission and of the evolution of the frequency of the bands will give some information about the position of the sources and about the frequency of the electrostatic wave which convert into NTC.