



Generation of electrostatic waves in the vicinity of NTC sources: an event study

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Non-thermal continuum (NTC) radiation is, together with auroral kilometric radiation (AKR), one of the two electromagnetic emissions which are 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 a density gradient, particularly at the plasmopause. The Cluster orbit is well adapted to study the NTC radiation near its source. In this presentation, we analyse a very particular event observed with the CLUSTER constellation near the plasmopause. Contrary to the common narrow-band spectral signature of NTC, this event shows a wide band spectral signature. Similar events were infrequently observed by the WHISPER wave instrument. These wide-band NTC events have some clear differences to other NTC events, and may have a different generation. We use the data of the PEACE electron instrument to measure the electron distribution function and to determine characteristics of different populations of electrons. This allows us to study the stability of electrostatic waves which can be generated in the source region and which can be at the origin of the wide-band NTC events.