



A statistical study of the NTC patches: plasmapause position and magnetic activity

Sandrine Rochel Grimald (1), Farida El-Lemdani Mazouz (2), and Florian Paquot (3)

(1) Onera, Toulouse, France (sandrine.rochel@onera.fr), (2) LATMOS, Paris, France (farida.mazouz@latmos.ipsl.fr), (3) IRAP, Toulouse, France (Florian.PAQUOT@supaero.isae.fr)

Variations in the solar wind are responsible of reconfiguration of the whole magnetosphere. The plasmapause is located in the inner magnetosphere and it has been shown a direct link between its extension and shape and the magnetic activity. Non-thermal continuum (NTC) radiation is believed to be emitted at the plasmapause and near the magnetic equator. The changes of the plasmapause due to solar wind variations may be reflected in the wave signature.

In a recent study, a particular type of NTC radiation, referred to as NTC plasmaspheric patch has been identified. It has been shown that this spectral signature only exists close to its source region. The Cluster perigee is located at 4 RE, in the plasmapause region. Using three years of Cluster data, we perform a statistical study about the NTC plasmaspheric patches, and the plasmapause position and the evolution of the magnetic activity. Our results show that NTC plasmaspheric patches observation is the signature of an increasing of the magnetic activity. It is linked with a compression of the plasmapause, and an increasing of the magnetic indices.