

Project Details

ROSES ID: NNH06ZDA001N

Selection Year: 2007

Program Element: Focused Science Topic

Topic: Effects of Ionospheric-Magnetospheric Plasma Redistribution on Storms

Project Title:

Solar Wind Drivers of Plasma Sheet Composition

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Summary:

The goal of this work is to use CLUSTER/CODIF data combined with solar wind and IMF information from ACE to identify the main solar wind drivers that bring ionospheric plasma into the plasma sheet. In the first 4 years of the CLUSTER mission, we have identified 38 storm-time periods when CLUSTER/CODIF was making measurements in the magnetotail region. We have clearly observed that the O⁺ is higher during storm-times than non-storm times, but the amount of O⁺ varies considerably from storm to storm. Using solar wind and IMF data, we will identify the solar inputs that result in the most significant ionospheric contribution to the plasma sheet. This project fits directly into the focused topic of determining the effects of ionospheric-magnetospheric plasma redistribution on storms. In particular it will help in the specification and forecasting of the plasma sheet composition, as well as in understanding the energization, transport and loss of ionospheric ions.

Publication References:

no references