



## **Energy Coupling Between the Solar Wind and Ionosphere-Thermosphere System in HSS Events of the Ascending Phase of the Solar Cycle**

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We analyze two CIR-HSS events during the ascending phase of the current solar cycle. The first event occurred on 29 April – 4 May 2011 and the second event occurred on 8-12 May 2012. We focus on understanding solar-wind coupling with the ionosphere-thermosphere (IT) system throughout the HSS events through estimating energy transfer (the coupling functions) and corresponding energy partitioning in the IT response. Heliospheric power dynamics and energy deposition by precipitating particles in different energy ranges are analyzed based on DMSP/SSJ and POES/MEPED. Joule heating is estimated. With the focus on high- to middle-latitudes, we analyze the TIMED/SABER zonal flux of nitric oxide (NO) infrared cooling radiation and the global total infrared emission energy.

Co-located study of increased NO emission, lower thermospheric heating and nighttime E-layer enhancements measured with the COSMIC satellite will be presented. We discuss differences and similarities of the magnetosphere-ionosphere-thermosphere coupling during these two events.