

Abstract Submitted
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The Effects of Solar Wind Dynamic Pressure on the Coupling of Energy between the Solar Wind and Magnetosphere ELIZABETH MITCHELL, RAMON LOPEZ, University of Texas at Arlington — Space physics seeks to understand the solar wind conditions which determine the interactions between the magnetosphere to the solar wind. In this pursuit, we are considering the effects of the changes in the solar wind dynamic pressure on the coupling between the solar wind electric field and the ring current injection rate (RCIR). The RCIR indicates the scale of the magnetosphere's response to the solar wind, with large values indicating greater changes and energy flow. The solar wind electric field provides a proxy for the amount of energy transferred into the magnetosphere. The boundary between the solar wind and the magnetosphere is created through a balance of the solar wind dynamic pressure with the magnetic pressure of the Earth. It is expected that modifications of this boundary through changes in the solar wind dynamic pressure will result in modifications in the RCIR response to the solar wind electric field. Through statistical analysis of satellite and ground-based data from 1995 to 2004, we examine the effects of dynamic pressure changes on the coupling of the solar wind electric field and RCIR.

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