Abstract Submitted for the TSS13 Meeting of The American Physical Society

Analyzing solar wind magnetic field reversals for a variety conditions in an MHD simulation SPENCER DURRENBERGER, BRETT SHOCK, ROBERT BRUNTZ, RAMON LOPEZ, University of Texas at Arlington — The solar wind flows out from the Sun, made up of charged particles and a magnetic field that interacts with Earth's magnetic field. We are simulating periods of steady magnetic field that also contain a reversal of the direction of that magnetic field. The solar wind produces motion in the plasma in the ionosphere, which is a layer of the uppermost part of the Earth's atmosphere that contains charged particles. We are looking at changes between modes of ionospheric circulation due to reversal events. We are simulating these events to analyze the changes in the magnetosphere and ionosphere, then changing the input values of these events to better understand the timing of changes in ionospheric modes, and under what conditions different modes occur. We will also be comparing some simulation results to actual observations.

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Date submitted: 01 Mar 2013

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