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Response Time of the Ionosphere to Sign Changes in the Interplanetary Magnetic Field Y-Component CHRISTOPHER SHERRILL, MIKAYLA STREETMAN, KEVIN PHAM, RAMON LOPEZ, University of Texas at Arlington — The solar wind travels from the Sun to the Earth carrying the interplanetary magnetic field (IMF) with it. When the solar wind reaches Earth, the interaction between the IMF and the Earth's magnetic field produces a current system throughout the magnetosphere, which connects to the ionosphere. We have identified events when the y-component of the IMF reverses direction in a short amount of time. We will take these events and use AMPERE to measure how long it takes for the ionosphere to reconfigure. AMPERE processes data from the iridium satellites to create a map of the field-aligned currents in the ionosphere. We will also measure the time of this transition in the ionosphere using Super Dual Auroral Radar Network (SuperDARN). SuperDARN is a network of ground radar that measures charged particle movement in the ionosphere. We will present a comparison of the transition times found using AMPERE with those from SuperDARN.

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