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Effect of Interplanetary Shocks on AL and Dst Indices and Real-Time WINDMI MONA MAYS, EDMUND SPENCER, WENDELL HORTON, Institute for Fusion Studies, The University of Texas at Austin — Analytic solar wind signals are constructed using data from the ACE satellite for the 3-6 October 2000 and 15-24 April 2002 geomagnetic storm events, which included interplanetary shocks and magnetic clouds. The response of the WINDMI model, an eight dimensional model of the solar wind driven magnetosphere-ionosphere system, to the analytic signals was examined for these events. The role of the shocks are examined by using analytic signals in which the shock feature in the density, solar wind velocity, and magnetic field magnitude are tested individually. WINDMI results from the analytic inputs show that the shock events strongly impacted the *AL* index values but changed the *Dst* very little. Analysis of both the October 2000 and April 2002 storms showed that *AL* peaks associated with the shocks during these storms significantly depend on the jump in B_{\perp} . Real-time WINDMI downloads real-time data from ACE to predict the *AL* and *Dst* about 1-2 hours before the data is available for these indices from the Quicklook WDC-Kyoto website. Every ten minutes real-time *AL* and *Dst* data and WINDMI predictions are shown on this website: <http://orion.ph.utexas.edu/~windmi/realtime/>. We show WINDMI real-time predictions that were captured for a recent storm on 14-15 April 2006. The work is supported by NSF-ATM grant 0539099.

Mona Mays
Institute for Fusion Studies, The University of Texas at Austin

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