Geophysical Research Abstracts, Vol. 8, 05131, 2006
SRef-ID: 1607-7962/gra/EGU06-A-05131

Validating the CISM solar wind models

M.J. Owens (1), H.E. Spence (1), T. Case (1), C.N. Arge (2), P. Riley (3), J. Linker (3), Z. Mikic (3), D. Odstrcil (4)

(1) Center for Space Physics, Boston University, Boston, MA, USA, (2) Air Force Research Laboratory/Space Vehicles Directorate, Hanscom Airforce Base, MA, USA, (3) Science Applications International Corporation, San Diego, CA, USA, (4) National Oceanic and Atmospheric Administration, Boulder, CO, USA

One of the primary goals of the Center for Integrated Space-weather Modelling (CISM) effort is to assess and improve prediction of the solar wind conditions in near-Earth space, arising from both quasi-steady and transient structures. We compare 8 years of L1 in-situ spacecraft data with predictions of the solar wind speed made by both the empirical Wang-Sheeley-Arge (WSA) model and the CORHEL MHD model, which comprises of the SAIC coronal code (MAS) coupled with the NOAA heliospheric code (ENLIL). We focus primarily on the ambient solar wind predictions derived from steady state solutions. However, coronagraph observations of halo CMEs can be fit with a simple “cone” model so as to obtain estimates of their angular width and propagation vector. This information can then be used to characterise an ad-hoc transient structure representing the CME, which is inserted into the lower-boundary of the heliospheric MHD simulation. We investigate the feasibility of this technique for predicting the arrival and structure of CME driven shocks at 1 AU.