Geophysical Research Abstracts
Vol. 12, EGU2010-4542, 2010
EGU General Assembly 2010

Linking heliospheric images of CMEs to their modeled in situ signatures

Christian Möstl (1), Charles J. Farrugia (2), Tanja Rollett (1,3), Manuela Temmer (1,3), Christiane Miklenic (1,3), Astrid M. Veronig (3), Antoinette B. Galvin (2), Helfried K. Biernat (1,3)

(1) Space Research Institute, Austrian Academy of Sciences, Graz, Austria (christian.moestl@oeaw.ac.at)), (2) Space Science Center and Dept. of Physics, University of New Hampshire, NH, USA, (3) Institute of Physics, University of Graz, Austria

We discuss three coronal mass ejection events observed by the STEREO and Wind spacecraft both in situ (STEREO/IMPACT and PLASTIC, and Wind/SWE and MAG instruments) as well as with the Heliospheric Imager instruments (part of the STEREO/SECCHI suite). We are concerned in particular with those CMEs which are seen in the HI images passing over another spacecraft which samples the ICME in situ. These events are of great interest, because they allow a connection between the different data sets, each having its distinct advantages. A pilot study was conducted for the ICME event on June 6 2008 at STEREO-B, which can be tracked all the way to 1 AU in the STEREO-A HI images. The Grad-Shafranov reconstruction technique is used to model the in situ observations to get a larger view of the flux rope in interplanetary space using the assumptions of invariance and time-independence. We show how the orientation of the magnetic flux rope inside the ICME is reflected in the morphology of the CME, and how the CME direction obtained by several methods compares to the in situ model. The same methods are used for two other events whenever applicable. The results are discussed regarding the possibility to forecast ICME properties from HI images.