



Multi-point observations of Co-rotating Interaction Regions

Nina Dresing (1), Raúl Gómez-Herrero (1), Olga Malandraki (2), Bernd Heber (1), Emilia Kilpua (3), Andreas Klassen (1), Reinhold Müller-Mellin (1), and Robert F. Wimmer-Schweingruber (1)

(1) University of Kiel, IEAP, Kiel, Germany (gomez@physik.uni-kiel.de), (2) Institute for Astronomy and Astrophysics, National Observatory of Athens, Greece, (3) Department of Physical Sciences, Theoretical Physics Division, University of Helsinki, Finland

During the recent solar minimum, Co-rotating Interaction Regions (CIRs) and their associated recurrent ion increases have been regularly observed in the inner heliosphere. The multi-point observations provided by STEREO and near-Earth spacecraft revealed that the structure of the same CIR often show significant variations when observed successively by different spacecraft. These variations become more evident as the co-rotation time between the spacecraft increases. We used time-shifting and backmapping techniques to compare observations of the same CIR by STEREO A and B in order to quantify the discrepancies in the plasma and particle measurements carried out by the identical instrumentation onboard both spacecraft. As found previously by Helios, the latitudinal separation between the spacecraft is an important cause of such discrepancies. We focus the study on this spatial effect excluding periods dominated by temporal variations related with coronal hole changes or the presence of transient structures in the solar wind in the vicinity of CIR.