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SH22A-07: Comparing Extrapolations of the Coronal Magnetic Field with Multi-Spacecraft White-Light Coronagraphic Observations

Tuesday, 11 December 2018

11:52 - 12:06

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Despite the general agreement that the magnetic field of the Sun dominates the structure and dynamics of the inner solar corona, we still have a quite poor knowledge of the details of the interplay between coronal plasma and magnetic field. One way to obtain information on the large-scale structure of the coronal magnetic field is to extrapolate it from photospheric data and compare the results with coronagraphic images. Coronal fields are usually extrapolated from photospheric measurements acquired days before or after to account for solar rotation, hence assuming that no significant changes occurred. We combine coronagraphic images from three instruments (LASCO-C2 and the two SECCHI-COR1) looking at the Sun from different viewing angles to build Carrington maps covering the entire corona with the minimum amount of temporal evolution as possible (~4.5 days). We then compare the position of the observed streamers in these Carrington maps with that of the neutral lines obtained from four different magnetic field extrapolations, giving constraints to the latter.

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