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Position Angles of Structured Coronal Mass Ejections and their Relation to Streamers

H. Cremades (1), V. Bothmer (2)

(1) Max-Planck-Institut für Sonnensystemforschung, (2) Universitäts-Sternwarte Göttingen
(Contact cremades@mps.mpg.de/Fax-Nr. +49(0)5556-979240)

The collection of "structured" coronal mass ejections (CMEs) analyzed here comprises CMEs which exhibit white-light fine structures, likely indicative of their possible 3D topology. These CME events have been selected within the period 1996-2002 from the dataset provided by the Large Angle and Spectroscopic Coronagraph (LASCO) onboard the SOlar and Heliospheric Observatory (SOHO). Their source regions in the low corona and photosphere have been deduced by analyzing data from the Extreme-Ultraviolet Imaging Telescope (EIT) and the Michelson Doppler Imager (MDI) onboard SOHO, and from ground-based Hα measurements. The comparison of the structured CMEs' position angles with those of their associated source regions yields disparities that range from few degrees up to 40 degrees, termed CME deviation. Projection effects are disregarded due to the limb nature of the structured CME events. A previous study of the authors attempted to correlate this CME deviation with the area and location of coronal holes, obtaining a better correspondence in times of minimum solar activity. In this work, the relationship between the deviation of CMEs with respect to their source regions and the presence of nearby streamers is investigated.