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Solar eruptions such as Coronal Mass Ejections (CMEs) observed in the inner solar corona (up to 4 R⊙) show acceleration profiles which appear as parabolic ridges in height-time plots. Inspired by the white-light automated detection algorithms, Computer Aided CME Tracking System (CACTus) and Solar Eruptive Events Detection System (SEEDS), we employ the parabolic Hough Transform for the first time to automatically detect off-disk solar eruptions from height-time plots. Due to the limited availability of white-light observations in the inner corona, we use Extreme UltraViolet (EUV) images of the Sun. In this paper we present a new algorithm, CME Identification in Inner Solar Corona (CIISCO), which is based on Fourier motion filtering and the parabolic Hough transform, and demonstrate its implementation using EUV observations taken from Atmospheric Imaging Assembly (AIA) on-board the Solar Dynamics Observatory (SDO), Extreme Ultra Violet Imager (EUVI) on-board the STEREO-A and B satellites, and Sun Watcher using Active Pixel System detector and Image Processing (SWAP) Imager on-board PROBA2. We show that CIISCO is able to identify any off-disk outward moving feature in EUV images. The use of automated detection algorithms, like CIISCO, can potentially be used to provide early warnings of CMEs if an EUV telescope is located at ± 90 from the Sun-Earth line, providing CME characteristics and kinematics close to the Sun.
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