KINEMATIC CHARACTERIZATION OF IN/OUT PAIRS AS SEEN IN SECCHI IMAGES

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This study investigates the kinematic properties of the “in/out pair” coronal features seen in Thompson scattered, white-light coronagraph images. Frequently, the pairs occur as the aftermath of solar coronal mass ejections appearing at first as a pin hole tear along the streamer axis. The tear appears consistently at around 5 solar radii. Due to the timing and location of these events, it is likely that the pairs are indicators of magnetic reconnection at the trailing edge of CMEs. Using the SECCHI COR1/COR2 instruments in combination with the LASCO C2 data, we are able to calculate the 3D location as well as the true speed of the pairs using elongation-time map (so-called JMAP) capabilities. The inflow portion of the pairs are seen in both SECCHI and LASCO coronagraphs and travel at approximately 100 km/s. While, the outflow portion take the shape of the outflow of the preceding storm and travel faster than 200 km/s. The images used in this analysis were processed using a running difference technique. Previous images subtraction highlights the proper motions of the intensity enhancements, while removing background effects. These results may shed light on the processes of magnetic reconnection following solar storms.