

Title: STEREO Observations of Interplanetary CMEs in Its First Decade

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Abstract

I will report the results from the observations of over 300 interplanetary CMEs (ICMEs) using STEREO data in 2007-2016, which are recently published in Jian et al. (ApJ 2018). Here are the main points. First, we cannot predict the north/south magnetic field in the magnetic obstacle using the magnetic field measurement in the sheath region. Second, the total pressure generally peaks near the middle of the magnetic-cloud (MC) passage, while it often declines along with the non-MC ICME passage, consistent with our previous interpretation concerning sampling geometry effects on what is observed. Third, the average iron charge state is high (above 12+) about 31% of the time for MCs and about 16% of the time for non-MC ICMEs. The charge state peak is often in the center of the magnetic obstacle. Fourth, we have observed a small number of ICMEs with abrupt magnetic field deviations from the nominal field rotations, coincident with a brief drop or increase of field strength – features could be related to the interaction with dust. Fifth, in comparison with the similar phases of solar cycle 23, the STEREO ICMEs in this cycle occur less often and are generally weaker and slower, although their field and pressure compressions weaken less than the background solar wind.