

Predicting ICME properties at 1AU

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Coronal mass ejections (CMEs) are among the main origins of geomagnetic disturbances. They change the properties of the near-earth interplanetary medium, enhancing some key parameters, such as the southward interplanetary magnetic field and the solar wind speed. Both quantities are known to be related to the energy transfer from the solar wind to the Earth's magnetosphere via the magnetic reconnection process. Many attempts have been made to predict the magnetic field and the solar wind speed from coronagraph observations. However, we still have much to learn about the dynamic evolution of ICMEs as they propagate through the interplanetary space. Increased observation capability is probably needed. Among the several attempts to establish correlations between CME and ICME properties, it was found that the average CME propagation speed to 1AU is highly correlated to the ICME peak speed (Dal Lago et al, 2004). In this work, we present an extended study of such correlation, which confirms the results found in our previous study. Some suggestions on how to use this kind of results for space weather estimates are explored.

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