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How Magnetic Erosion affects the Kinematics of Coronal Mass Ejections

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To better understand the solar wind dynamic interactions with Coronal Mass Ejections (CMEs), we examine the effect of magnetic erosion on to the well-known aerodynamic drag force acting on CMEs. In particular, we consider the interplay between reconnection with the ambient solar wind and the virtual mass component of the drag equation. We quantify the effect of magnetic reconnection, which erodes part of the CME mass and magnetic flux, on the drag acting on CMEs and, eventually, we determine its impact on the time and speed of arrival of CMEs at 1 AU.

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