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# Coronal mass ejections from the upper corona to Earth's bow shock

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## Abstract

In the past six years, the two STEREO spacecraft have remotely observed hundreds of coronal mass ejections (CMEs), shedding light on their heliospheric evolution. Combined with global numerical simulations and multi-point in situ measurements, these observations can reveal intricate physical phenomena occurring during the propagation of CMEs between the Sun and the Earth. I will present recent simulations and observational results that give new insight on CME-CME interaction, but also raise new questions about CME heliospheric deflection and rotation as well as the nature of CMEs itself. I will also discuss some recent efforts in understanding the Sun-to-Earth evolution of complex series of eruptions as well as their geo-effectiveness and their effectiveness in accelerating particles, focusing on events from 2008 to 2011.

**Keywords:** coronal mass ejections, interplanetary space, heliosphere, simulation, remote, sensing

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