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# Combining remote-sensing image data with in-situ measurements supported by modeling for Earth-affecting CME events

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We analyze the well observed flare-CME event from October 1, 2011 and cover the complete chain of action – from the Sun to Earth. We study in detail the solar surface and atmosphere (SDO and ground-based instruments) associated to the flare/CME and also track the off-limb CME signatures in interplanetary space (STEREO-SoHO). This is complemented by surface magnetic field information and 3D coronal magnetic field modeling. From in-situ measurements (Wind), we extract the corresponding ICME characteristics. Results show that the flare reconnection flux is most probably a lower limit for estimating the magnetic flux within the flux rope as 1) magnetic reconnection processes were already ongoing before the start of the impulsive flare phase and 2) the dimming flux increased by more than 25% after the end of the flare, indicating that magnetic flux was still added to the flux rope after eruption. When comparing this to the in-situ axial magnetic flux of the magnetic cloud, we find that it is reduced by at least 75%, referring to substantial erosion in interplanetary space. Careful inspection of on-disk features associated with CMEs are essential for interpreting such scenarios.