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Coronal dimmings associated with coronal mass ejections on the solar limb

Galina Chikunova¹, Karin Dissauer², Tatiana Podladchikova¹, and Astrid Veronig^{3,4}

¹Skolkovo Institute of Science and Technology, Space Center, Russian Federation (galina.chikunova@skoltech.ru)

²NorthWest Research Associates, Boulder, USA

³Institute of Physics, University of Graz, Graz, Austria

⁴Kanzelhohe Observatory for Solar and Environmental Research, University of Graz, Treffen, Austria

We studied 43 coronal dimming events associated with Earth-directed coronal mass ejections (CMEs) that were observed in quasi-quadrature by the SDO and STEREO satellites. We derived the properties of the dimmings as observed above the limb by STEREO EUVI, and compared them with the mass and speed of the associated CMEs. The unique satellite constellation allowed us to compare our findings with the results from Dissauer et al. (2018, 2019), who studied these events observed against the solar disk by SDO AIA. Such statistics is done for the first time and confirms the close relation between characteristic dimming and CME parameters for the off-limb viewpoint. We find that the dimming areas are typically larger for off-limb observations (mean value of $1.24 \pm 1.23 \times 10^{11}$ km² against $3.51 \pm 0.71 \times 10^{10}$ km² for on-disk), while the decrease in the total extreme ultraviolet intensity is similar ($c=0.60 \pm 0.14$). The off-limb dimming areas and brightnesses are strongly correlated with the CME mass ($c=0.82 \pm 0.06$ and 0.75 ± 0.08), whereas the dimming area and brightness change rate correlate with the CME speed ($c \approx 0.6$). Our findings suggest that coronal dimmings have the potential to provide early estimates of the Earth-directed CMEs parameters, relevant for space weather forecasts, for satellite locations at both L1 and L5.