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The geoeffectiveness of Halo CMEs far from central meridian

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Fast halo CMEs are considered as the most geoeffective solar events. When the halo CME comes with velocities higher than 1000 km/s and originating from the Western hemisphere close to the solar center, a large disturbance is expected at terrestrial environment. However, large disturbances have been also associated to halo CMEs from regions located far from central solar meridian, as Hallowing storm, related to CMEs from active regions farther than W80 and resulting a Dst index below -400 nT.
In this work we have studied all halo CMEs of solar cycle 23, as observed by the Solar and Heliospheric Observatory (SOHO) mission, with solar source close to solar limb, from 60º up to 90º far from central meridian. For this task, we have analyzed not only solar atmosphere and the terrestrial surface, but every link in the Sun-Earth chain. The results of this work are useful, not only for understanding solar-terrestrial interaction, but also in order to establish the requirements of space weather models based on solar observations.