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Poster
The access of solar energetic protons into the inner magnetosphere is investigated by following reversed proton trajectories to compute the proton cutoff energy using the Dartmouth geomagnetic cutoff code (Kress et al., Space Weather, 2010) in TS04 magnetic field for a 17-day period November 28 to December 15, 2020. This period features two shocks on 30 November and 10 December, and two >10 MeV and >30 MeV proton flux increases measured by ACE on 30 November and 8 December. The cutoff energies for protons coming from the west and east direction, the minimum and maximum cutoff energy respectively, are calculated every five minutes along the orbit of GOES-16 and GOES-17. The model captures cutoff variations due to changes in solar wind conditions and daily variations in the cutoff due to asymmetry of the magnetosphere. Results are compared with published cutoff calculations using the same cutoff code for the 7-8 September 2017 (Li et al., JGR, 2021) and stronger 11 September 2017 (Qin et al., JGR, 2019) SEP events where Van Allen Probes proton measurements were available in a geosynchronous transfer orbit.
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