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Poster
High-speed streams (HSSs) and coronal mass ejections (CMEs) are primary drivers of geomagnetic storms within Earth's magnetosphere. Accurate forecasting of such events is critical, and physics-based global magnetosphere-ionosphere-thermosphere models have been developed to accomplish this task. In an operational scenario, solar wind and the large structures contained within are monitored upstream and propagated downstream to the model boundary placed just outside Earth's bow shock. This data is most often provided by the OMNI dataset, a set of observations of the solar wind typically collected near the L1 Lagrange point and ballistically propagated to Earth's bow shock nose. Occasionally, the actual solar wind conditions outside the bow shock may differ from the OMNI data, leading to erroneous model inputs and forecasts not faithfully reflecting reality. One such case may be HSSs, which contain large magnetic fluctuations traveling at the Alfvén velocity not advected with the bulk solar wind flow and may therefore appear drastically different to the propagated OMNI data. In contrast, CMEs are large, relatively unchanging structures and may be more accurately represented near Earth. We investigate the reliability of OMNI to propagate HSSs and CMEs to the bow shock by taking correlation coefficients of the OMNI data with data from near-Earth satellites along the Earth-Sun line and discuss the implications of prediction reliability on space weather models.

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