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Poster
Accurate and timely prediction of coronal mass ejection (CME) arrival is essential for space weather services. At the National Institute of Information and Communications Technology (NICT), we operate the SUSANOO space weather prediction system as part of NICT’s 24/7 space weather forecast service. SUSANOO is a physics?based CME arrival prediction framework based on global magnetohydrodynamic (MHD) simulations (Shiota and Kataoka, 2016) and is operated in real time to support monitoring and warning activities. This poster presents the structure of the SUSANOO CME arrival prediction system and its recent operational performance. We evaluate SUSANOO predictions for significant space weather events in November 2025 and January 2026. Prediction performance is assessed in terms of lead time, arrival time accuracy, and consistency with in?situ solar wind observations, illustrating the capabilities and limitations of an operational MHD?based CME arrival prediction system.
We also summarize the observational data supporting SUSANOO. Coronagraph observations from CCOR1 onboard GOES?19 have been incorporated into the operational workflow for CME detection and characterization. Preparations are ongoing for the future use of CCOR2 onboard the SOLAR?1 (SWFO?L1) mission to ensure continuity of coronagraph observations.
NICT has constructed a dedicated ground?based antenna and is currently receiving SOLAR?1 radio signals on a daily basis. Coordination between NICT and NOAA regarding data reception and transfer is ongoing.
This poster highlights the role of an operational MHD simulation-based system in real?time CME arrival prediction.
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32
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