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Poster
Mid?latitude ionospheric scintillations and associated GNSS navigation errors have emerged as a recurring feature of several Solar Cycle 25 storms. We investigate the key drivers for producing strong phase and amplitude fluctuations at mid?latitudes duirng the disturbed space weather conditions. Our results show that Storm Enhanced Density (SED) plumes, the mid?latitude trough, and substorm?related auroral precipitation play central roles in structuring the ionosphere and triggering GPS disruptions. In addition, bubble?like depletion structures extending from low latitudes occasionally reach mid?latitude regions during the recovery phase, producing severe scintillation and rapid TEC gradients. Initial statistical analysis quantifies the occurrence of phase fluctuations across multiple storms, revealing clear dependencies on geomagnetic activity and background ionospheric morphology. These findings provide new insight into the diverse mechanisms that drive mid?latitude scintillation and lay the groundwork for improved forecasting of GNSS performance during disturbed space?weather conditions.
Poster session day
Thursday, April 30, 2026
Poster location
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Meeting homepage
2026 Space Weather Workshop
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