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Oral
We examine the response of the ionosphere to the 10-13 May 2024 and 10-13 October 2024 geomagnetic storms, the two recent great geomagnetic storms of solar cycle 25. We identified the occurrence of ionospheric irregularities during the two geomagnetic storms. We used percentage change in vertical total electron content (?VTEC%) computed using VTEC data from three equatorial ground-based global navigation satellite system (GNSS) receivers in the American, African, and Asian sectors, to study the ionospheric response. In order to determine the occurrence of ionospheric irregularities, we employed the rate of change of electron density (Ne) index (RODI) from Swarm satellite-A (Sw-A) and the rate of change of TEC index (ROTI) from the GNSS TEC. Our results revealed a positive ionospheric storm over the African and Asian sectors during the main phase of May storm; whereas a negative ionospheric response was recorded over the American sector. In contrast, during the October storm, a positive ionospheric storm effect was observed over the American and African sectors and negatively over the Asian sector. Additionally, we identified that the October storm had a higher percentage irregularity occurrence rate than the May storm, although the May storm's G5 level was higher than the October storm's G4 level. Sw-A showed a longitudinal trend in the occurrence rate of irregularities during the May storm, with America having the lowest rate, followed by Africa and Asia. During the October storm, this longitudinal dependence is reversed.
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