Near real-time plasma irregularity monitoring by FORMOSAT-7/COSMIC-2

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The global map of radio occultation scintillations is constructed by using the S4 index profiles of radio occultation (RO) observations onboard FORMOSAT-7/COSMIC-2 (F7/C2). This study provides comparisons between the RO S4 and the rate of TEC index(ROTI) in Brazil region, coherent scatter radar observation of the Jicamarca Unattended Long-term Investigations of the Ionosphere and Atmosphere(JULIA), and the airglow monitoring of Global-scale Observations of the Limb and Disk(GOLD). Result shows that the geographic location of the RO S4 and ground-based observed irregularities are highly correlated, and the bottom side boundary of the EPBs is the major source of strong occultation scintillations in F-region.

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