

Recent advances in the low latitude ionospheric irregularities- a review

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Scientific research on the low latitude ionospheric irregularities continues to be of interest due to their adverse effects on communication and navigation systems. Understanding the physical processes and governing free energy sources leading to develop forecasting capability is the current focus. Low latitude ionospheric E and F regions become unstable both during day and night and irregularities are formed at different height regions. While understanding the F region processes with forcing from below and extra-tropics has been paid attention, research activities are also focused on understanding fascinating details of E- and valley- region plasma processes, such as instabilities linked with tidal ion layer, intermediate layer and daytime 150 km echoes. Recent experiments conducted from low latitudes in the Asian sector have added new observational knowledge on plasma irregularities. This paper will present the recent advancements made in understanding E and F region irregularities including coupling between the two regions and daytime 150 km irregularities based on observations made in the Asian sector.