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# Post-midnight enhancements in low latitude F layer electron density: observations and simulations

Libo Liu (1,2), Huijun Le (1,2), Yiding Chen (1,2), Yanyan Zhang (1,2), Weixing Wan (1,2), Baiqi Ning (1,2)

(1) CAS Key Laboratory of Ionospheric Environment, Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing, 100029, China, (2) Beijing National Observatory of Space Environment, Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing, 100029, China

Observations from a Lowell DPS-4D ionosonde operated at Sanya (18.3º N, 109.6º E), a low latitude station in China, have been analysed to study the nighttime behavior of ionospheric F layer. Post-midnight enhancement events are frequently occurred in the year of 2012. Common features in these cases illustrate that, accompanying nighttime rises in peak electron density of F2-layer (NmF2), the height of F2-layer goes downward significantly and the ionogram-derived electron density height profiles become sharpener. Enhancement in electron density develops earlier and reaches peaks earlier at higher altitudes than at lower altitudes. Downward plasma drift detected under such events reveals the essential role of the westward electric field in forming the post-midnight enhancements in electron density of ionospheric F-layer at such low latitudes. The important role of westward electric field in formation of nighttime enhancement is supported by the simulated results from a model.
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