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**Dynamics of ionospheric irregularities in increasing phase of 24th solar cycle
at Kolhapur [16.4°N, 74.2°E]**

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Abstract:

In this paper we have focused on drift of irregularities using amplitude scintillations for period January 2011 to December 2015. The data of VHF amplitude scintillations and all sky imager at Kolhapur has been used to obtain the drift of ionospheric irregularities. The drift is compared with velocities of thermospheric wind obtained by HWM-07 (Horizontal Wind Model-07) and of EPBs (Equatorial Plasma Bubbles). The results are in good agreement with model data. Also, the pattern of drift in scintillation data matches well with velocity of EPBs, mainly during equinoctial months. To examine the possible effect of magnetospheric disturbance on the dynamics of the irregularities we have compared the drift on magnetically disturbed nights with the monthly averaged quiet nights drift. Zonal velocity pattern on magnetically disturbed nights shows reversal in the direction of eastward zonal drift around midnight. The deviation of plasma drift on disturbed nights from monthly averaged quiet night drift shows maximum effect of magnetic activity around midnight. The monthly averaged peaks of the zonal drift increases with increasing 10.7 cm solar flux.

Keywords: VHF scintillation; ionosphere; plasma drift; magnetosphere; equatorial plasma bubble; solar flux

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