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Estimating plasma drift velocities in the low latitude regions within the African sector.

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Estimating plasma drift velocities in the low latitude regions within the African sector.

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The day-to-day variation of ionospheric wind dynamo current near magnetic equator has been known, from solar quiet current Sq studies, to be closely associated with variation of magnitude of horizontal geomagnetic field. In this study $E \times B$ plasma drift velocity is estimated from the horizontal magnetic field (H) measurements using a pair of low latitude magnetometers. The daytime phenomenon, equatorial electrojet current, is considered as the main driving mechanism responsible for variation of the inferred $E \times B$ plasma drift velocity. Based on the differential magnetometer approach, formulation of mathematical functions with potential to predict the $E \times B$ plasma drift velocity at different locations is presented and compared with other sources.

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PhD

Main supervisor (name and email) and his / her institution

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