

THE ROLE OF UPWARD PROPAGATING WAVES IN THE EQUATORIAL SPREAD F DAY-TO-DAY VARIABILITY

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In this presentation we will discuss the effects of upward propagating atmospheric waves (mainly planetary- and gravity- waves) of varying intensity in the control of the equatorial post sunset/nighttime F region plasma instabilities growth leading to spread F development and its day-to-day variabilities. The role of gravity waves will be discussed based on findings from a recent SpreadFEx campaign (September-October 2005) conducted in Brazil. An evaluation of the relative importance of the prereversal vertical drift versus GW winds in the instability growth for ESF development will be presented. Besides, some cases of GW modification of the PRE that can potentially contribute to the instability growth or that could decrease the growth rate will be discussed. Recent studies have shown that the upward propagating planetary waves can be an important source of modification of the evening vertical drift and hence ESF development. Some case studies of the different sources of ESF day-to-day variabilities during quiet conditions will be presented and discussed.

Gravity waves effects, Planetary wave effects, Equatorial spread F

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