

## The variability in EIA characteristics and its influence on the occurrence/non occurrence of post-sunset Equatorial Spread F (ESF)

# Smitha V. Thampi[1]; Sudha Ravindran[2]; Tarun K. Pant[2]; C. V. Devasia[2]; R. Sridharan[2]

[1] RISH, Kyoto Univ.; [2] Space Physics Laboratory, Vikram Sarabhai Space Centre

The strength and asymmetry of the Equatorial Ionization Anomaly (EIA) are derived from the latitudinal profiles of TEC obtained from a radio beacon receiver at Trivandrum ( $8.5^{\circ}\text{N}$ ,  $77^{\circ}\text{E}$ ,  $0.5^{\circ}\text{N}$  dip lat). These two parameters, obtained well ahead of the onset time of ESF, are shown to have a definite role on the subsequent ESF activity. It is seen that this parameter can define the state of the 'background ionosphere' conducive for the generation of ESF irregularities much prior to its onset. This paper presents the observations of EIA strength and asymmetry from the Indian longitudes during the period from August 2005-March 2007. It is seen that the seasonal variability of EIA strength and asymmetry are manifested in the latitudinal gradients obtained using the relative TEC measurements. As a consequence, the 'forecast parameter' also displays a definite seasonal pattern. The seasonal variability of the EIA strength and asymmetry, and the 'forecast parameter' are discussed in the present paper and a critical value for the 'forecast parameter' has been identified for each month/season such that, when the estimated value of the 'forecast parameter' exceeds it, the ESF is seen to occur on more than 95% of cases.