

Seasonal variations of equatorial spread- F

K. S. V. Subbarao, B. V. Krishna Murthy

Space Physics Laboratory, Vikram Sarabhai Space Centre, Trivandrum-695 022, India

Received: 11 January 1993, revised: 21 September 1993, accepted: 23 September 1993

Abstract. The occurrence of spread- F at Trivandrum (8.5°N , 77°E , dip 0.5°N) has been investigated on a seasonal basis in sunspot maximum and minimum years in terms of the growth rate of irregularities by the generalized collisional Rayleigh-Taylor (GRT) instability mechanism which includes the gravitational and cross-field instability terms. The occurrence statistics of spread- F at Trivandrum have been obtained using quarter hourly ionograms. The nocturnal variations of the growth rate of irregularities by the GRT mechanism have been estimated for different seasons in sunspot maximum and minimum years at Trivandrum using $h'F$ values and vertical drift velocities obtained from ionograms. It is found that the seasonal variation of spread- F occurrence at Trivandrum can, in general, be accounted for on the basis of the GRT mechanism.

Correspondence to: B. V. Krishna Murthy

Article not available online

Last change: October 3, 1997

helpdesk.link@springer.de

© Springer Berlin Heidelberg 1994