

POLEWARD PROPAGATION OF POSTSUNSET IONOSPHERIC PLASMA DEPLETIONS
AS DETECTED THROUGH MERIDIONAL SCANNING AIRGLOW
($\lambda = 630 \text{ nm}$) MEASUREMENTS IN BRAZIL

by

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ABSTRACT

The poleward velocities of ionospheric plasma bubble footprints from 9 nights of scanning airglow ($\lambda=630\text{nm}$) measurements over Cachoeira Paulista (dip = 28°S) are introduced and analysed. Those experiments were carried out in October 1978 and December 1978, during the postsunset period. They have been selected from a set of experiments for their notable plasma bubbles (or depletions) signatures on the meridional profiles of the 630 nm airglow intensity. The velocities reported here correspond to those of the airglow minima. They are seen to decrease southwards. The average observed velocity at north were $304 \text{ ms}^{-1} \pm 8\text{ms}^{-1}$ and $246 \text{ ms}^{-1} \pm 53 \text{ ms}^{-1}$, respectively. The velocity overhead Cachoeira Paulista (C.P.) turned out to be about 315 ms^{-1} , as derived from the time derivative of the least square fitted path. Such a velocity maximum at 28° dip is consistent with recent AE-E satellite in-situ measurements reported by Hamson and Bamgboye (1984). During the occurrence of the plasma bubble events the airglow amplitude underwent remarkable fluctuations whose main feature is the fluctuation amplitude decreasing polewards. Such a feature seems to be due to the fact that the airglow intensity fluctuations are associated with field aligned irregularities. A discussion based on the current knowledge of the low latitude electrodynamic is introduced.