

Nighttime thermospheric meridional winds inferred from ionospheric h-F and hpF2 data

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Nighttime thermospheric meridional winds along the magnetic meridian have been inferred using ionospheric parameters h F and hpF2 obtained at two equatorial stations Manaus 2 9 o S 60 0 o W dip latitude 6 4 o N and Palmas 10 2 o S 48 o W dip latitude 5 5 o S and one low latitude station S a o Jos e dos Campos 23 2 o S 45 9 o W dip latitude 17 6 o S during geomagnetically quiet periods in the months of August and September 2002 The height variations of the parameters h F and hpF2 were obtained by three digital ionosondes of the type known as the Canadian Advanced Digital Ionosonde CADI which are operated in time-synchronized mode and takes ionograms every 5 minutes An extension of the servo model is applied in order to infer the magnetic meridional component of the thermospheric neutral winds over the low latitude region The coefficients of diffusion recombination and loss rate required in the servo equations were calculated using an appropriated atmospheric model MSIS-90 In this work we show that the servo model gives similar results using either h F or hpF2 This result is interesting because it shows that during the months of August and September the wind systems are similar at both bottomside and peak of the F-layer

Publication:

36th COSPAR Scientific Assembly. Held 16 - 23 July 2006, in Beijing, China. Meeting abstract from the CDRom, #339

Pub Date:

2006

Bibcode:

2006cosp...36..339M

