

ISOTROPY BOUNDARY OF THE ENERGETIC PARTICLE PRECIPITATION AND THE AURORA

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Several passes of the TIROS/NOAA satellites over auroral forms observed from the ground were selected to study the relationship between the aurora and the location of the energetic (>30 keV) electron precipitation isotropy boundary (IB). It has been found that under different magnetic activity conditions the discrete arcs were situated poleward from the IB. This agrees with the earlier result obtained from the ground-based observations for the growth phase conditions [Sergeev V.A., A.G. Yahnin, R.J.Pellinen. *Geomagn. & Aeron.*, V.23, 972, 1983]. The interpretation based on the mechanism of the energetic particle scattering on the magnetotail current sheet suggests that the source of the discrete arcs is situated in the region of the magnetotail equatorial plane where the magnetic field is about several nT. The intense diffuse auroras (diffuse bands, Ω -structures) observed both by the all sky cameras and the DE-1 satellite imager were situated equatorward from the energetic electron IB in the region where the proton IBs were registered. This suggests that diffuse auroral forms are originated from the region where the equatorial magnetic field is about several tens of nT.

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