SYSTEMATICS OF THE AUROUL ELECTRON PRECIPITATION STRUCTURES RELATIVELY TO THE ENERGETIC ELECTRON ISOTROPIC PRECIPITATION

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Special class of the auroral particle precipitation structures was selected from the data of the auroral electron (E<20 keV) measurements made onboard the TIROS and NOAA-6 satellites in August, 1979. The criteria used for the selection were:
- the intensity of the peak energy flux - >1 erg/cm^2*s*sr
- the width of the structure - <100 km.

It has been shown that when the comparison of the satellite measurements and ground-based auroral observations was available such structures corresponded to the discrete visible auroras. It has been also found that:
- the equatormost auroral precipitation structure lies poleward from or coincides with the equatorial edge of the >30 keV electron isotropic precipitation region, so called isotropic boundary (IB);
- the average distance between the IB and the structures in question increases when measured from the evening to morning sector;
- the observed IB latitude is in agreement with that culculated on the basis of the mechanism of the pitch angle scattering of energetic particles on the magnetotail current sheet.

The conclusion based on the above-mentioned mechanism is that the considered precipitation structures are originated from the magnetotail current sheet.

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