

Plasma sheet pressure anisotropies

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The plasma pressure isotropy is a crucial condition to evaluate the plasma sheet pressure from low-altitude measurements. To estimate the pressure anisotropy effect we compare the pressure computed from NOAA satellites measurements at ionospheric end of the field line with pressure estimates computed from empirical magnetic field models as well as with averaged ISEE-2 neutral sheet pressure measurements. The comparisons show that in the plasma sheet at geocentric distances 9-20 Re, in general, the pressure estimates in the ionospheric and plasma sheet parts of the flux tube is close one to the other, allowing to monitor the plasma sheet parameters based on low-altitude measurements. To obtain in situ statistical estimates of pressure anisotropy and evaluate consequences for low altitude pressure estimates we made a survey of the AMPTE/IRM measurements obtained during five days 1985 in central region of plasma sheet at 10-15 Re. The average anisotropy (T_{par}/T_{perp}) is close to 1 and it reaches the extreme values 0.6 and 2 during a disturbed periods.