

An estimation of current distribution in the inner magnetosphere II

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We are trying to estimate the 2-dimensional distribution of electric currents in the inner magnetosphere using the magnetic data obtained by the DE-1 spacecraft. In this estimation, the currents are assumed to be straight line currents perpendicular to each meridional plane under consideration.

The derived current distribution is doubtful in the high latitude because it is highly affected by Birkeland currents. However, the estimated current distribution is plausible in the low latitude; for example, there are dawn to dusk currents in the region less than 3 earth radii, and a westward ring current in the region more than 3 earth radii.