



Simple model of the bifurcated current sheet in the geomagnetic tail

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Solution for self-consistent magnetic field in the geomagnetic tail is obtained in a simple model of single particle approximation. Magnetic field configuration is created by ion drift current in non-uniform magnetic field. Ion trajectories are such that the electric current density is zero at the neutral sheet where the magnetic field vanishes, and the current possesses two maxima at both sides of the neutral sheet. Positions of the maxima correspond to the penetration depth of ions into the magnetic field due to finite gyroradius. We arrive at the conclusion that the bifurcated current sheet with two maxima of the electric current density is an equilibrium state of the geomagnetic tail, rather than a result of evolution of the Harris layer due to the geomagnetic tail dynamics.