Model of the Jovian magnetosphere

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A paraboloid model of the Jovian magnetosphere is presented. The magnetopause is approximated by a paraboloid of revolution. The magnetospheric magnetic field consists of the planet dipole field, the magnetodisc field, the field of the magnetotail current sheet, and a partially penetrating interplanetary magnetic field. All magnetospheric magnetic fields are screened by the magnetopause currents. The purpose of this paper is to study using the magnetospheric magnetic field model, the electric fields and plasma motions caused by the unipolar inductor and the solar wind MHD generator. This is one of approaches to the fundamental problem of the nature of the global plasma convection and corotation in the Jovian magnetosphere.