**Electric field and FACs in the spherical magnetosphere model of a planet**

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We estimate the electric field penetrating from the stellar wind into the planet's magnetosphere using a spherical model of the magnetospheric magnetic field and also estimate field-aligned currents. Inside the magnetosphere, the magnetic field consists of three contributions: the internal field of the planet, the field of screening currents at the magnetopause (Chapman-Ferraro currents) and the penetrating interplanetary magnetic field. First, the magnetic field lines are found, and then, from the condition of ideal conductivity along the field lines, we calculate an electric field penetrating from the solar wind. The electrical conductivity of the conducting layer on the planet is assumed to be isotropic. As a result, we obtain the contours of electric field equipotentials, vector distributions of electric fields and field-aligned currents values.