



## **Magnetopause current sheet model with strong plasma flow gradients**

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Dayside and flank magnetopause can be characterized by strong gradients of plasma solar wind flows. We develop here thin current sheet model, suggested in 2010 by Nickeler&Wiegmann for flow gradients perpendicular to separatrices. We consider cases with flows which are not parallel to magnetic field lines, because such cases look more realistic for the Earth magnetopause. We study influence of these flows towards stationary current sheets in quasi 2D-equilibria, using theory of ideal MHD. We obtain analytical solutions and compare them with spacecraft data collected by THEMIS mission. We show relations between induced currents and Alfen Mach number / plasma flow inclination. We discuss the restrictions of our model connected with MHD approach, plasma incompressibility, 2D-symmetry and suggest further extension of magnetopause CS models with solar wind plasma flows. The work is supported by RFBR grant number 18-02-00218.