



The Study Of Low-Frequency Instabilities Of Current Sheaths Of Space Plasma Within The Quasi-Linear Theory

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Investigation of the stability nonelectroneutral current sheets in the linear approximation [1-4] gives information only on the initial stage of development of perturbations when their amplitudes are small. Within the framework of the quasi-linear theory one can give an answer to the question of how long the initial perturbations can grow and how change the equilibrium state of the plasma current sheet under the reverse effect of these perturbations. We derive a system of nonlinear kinetic equation with self-consistent electromagnetic field in order to study the evolution of the distribution function of the background plasma current sheet in the approximation of low-frequency eigenmodes of instabilities.

Evolution equation was obtained for the perturbation of the electromagnetic field and the instability growth rate in the current sheet.

Algorithms were tested for solutions of the equations obtained.

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