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Beam plasma interaction in strongly inhomogeneous plasma

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We consider one dimensional problem of beam-plasma interaction in strongly inhomogeneous plasma making use of quasilinear approximation. It is shown that the effect of large scale strong enough inhomogeneities results in modification of quasilinear equations. It is shown that there appear two important physical effects, the beam relaxation does not lead to the formation of the plateau distribution in the whole range of velocities, and the diffusion process in inhomogeneous plasma forms the tail of electrons having velocities that can be considerably larger than the velocity of the beam. The dependence of the relaxation length upon the characteristics of the spectrum of density fluctuations is established.