THE TRANSPARENCY OF A PLASMA BARRIER FOR ELECTROMAGNETIC WAVES TRANSILLUMINATED WITH THE AID OF AN ELECTRON BEAM

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The relations between the plasma barrier for electromagnetic waves transilluminated with the aid of a fast electron beam transparency and the parameters of beam-plasma system are determined experimentally. The existence of optimal in this regard system parameters is shown. Set aside by linear theory, the nonlinear beam-plasma interaction processes, inevitably accompanying such transillumination, are shown to be responsible for disagreement between experimentally and theoretically obtained relations. The barrier transparency in laboratory experiments is ascertained to be considerably dependent on the waveguide properties of the system used.