EVOLUTION OF A MODULATED ELECTRON BEAM IN PLASMA FOR DIFFERENT MODES OF BEAM-PLASMA TURBULENCE

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S u m m a r y

Evolution of a modulated electron beam in plasma for different beam-plasma turbulence modes is studied via a computer simulation using the PIC method. Ranges of the beam current density corresponding to different modes of beam-plasma turbulence were found out from the simulation. Peculiarities of the interference of non-resonant (at the modulation frequency) and resonant instabilities for different modes of beam-plasma turbulence are investigated. A modulation instability was observed in the strong turbulence mode. Quasiperiodic transillumination of the plasma by an electron beam is observed for the superstrong turbulence mode.