

عنوان مقاله:

The optimum value of the magnetic field in a 1D non-relativistic plasma system

محل انتشار:

هشتمین کنفرانس بین المللی تحقیقات پیشرفته در علوم، مهندسی و فناوری (سال: 1400)

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خلاصه مقاله:

The electric field evolution of a non-relativistic wave in a cold plasma system has been studied using a 1D³V particle-in-cell simulation. It is found that the electric field amplitude is very sensitive to the applied magnetic fields. Our results illuminate that the inclusion of the magnetic fields reduces the electric field amplitude to approach its minimum amount and causes the electric field to acquire an optimum value. Also, wave energy absorption in this minimum amount has its maximum achievable value. These results can quite reverse for stronger magnetic fields.

کلمات کلیدی:

Particle-in-cell simulation, wave breaking, nonlinear plasma waves, magnetic field, nonlinear phenomena

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