



Distinctive features of ion-acoustic solitons in EPI super-dense magneto-plasmas with degenerate electrons and positrons

<http://www.firstlight.cn> 2010-10-01

Using the extended Poincaré-Lighthill-Kuo (PLK) reductive perturbation method to study the small-amplitude ion acoustic solitary wave (IASW) dynamics (propagation and interaction), it is shown that in Thomas-Fermi magneto-plasma consisting of inertial-less degenerate electrons and positrons and isothermal ions, distinctive features emerge when the ultra-relativistic degeneracy pressure applies to electrons and positrons. Calculations show that ion-acoustic solitary waves may interact differently in such plasmas under ultra-relativistic degeneracy pressure.

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