Physics > Plasma Physics

Comment on "Interaction of two solitary waves in quantum electron-positron-ion plasma" [Phys. Plasmas \textbf {18}, 052301 (2011)]

M. Akbari-Moghanjoughi

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Recently, Yan-Xia Xu, et al. in the article Ref. [Phys. Plasmas \textbf{18}, 052301 (2011)] have studied the effects of various plasma parameters on interaction of two ion-acoustic solitary waves in an unmagnetized three-dimensional electron-positron-ion quantum plasma. They have used the extended reductive perturbation technique, the so-called, extended Poincare'-Lighthill-Kuo (PLK) technique, to deduce from the model governing the quantum hydrodynamics (QHD) differential equations leading to the soliton dynamical properties, namely, Korteweg-de Vries evolution equations (one for each wave) and coupled differential equations describing the phase-shift in trajectories of solitons due to the two dimensional collision. The variation of the calculated collision phase-shifts are then numerically inspected in terms of numerous plasma fractional parameters. In this comment we give some notes specific to the validity of the results of above-mentioned article and refer to important misconceptions about the use of the Fermi-temperature in quantum plasmas, appearing in this article and many other recently published ones.

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