Title	Envelope solitons and their modulational instability in dusty plasmas with two-temperature superthermal electrons.
Author(s) Name	S. Sultana, S. Islam, A. A. Mamun
Contact Email(s)	ssultana@juniv.edu, sislam@aiub.edu, mamun_phy@juniv.edu
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Abstract

The modified ion-acoustic envelope solitons and their modulational instability in a multi-component unmagnetized plasma (consisting of negatively charged immobile dusts, inertial ions and super thermal electrons of two distinct temperatures) are theoretically investigated. A multiple scale (in space and time) perturbation technique is used to derive the cubic nonlinear Schrödinger equation

(which describes the evolution of a slowly varying wave envelope with space and time). It is observed that the plasma system under consideration supports two types (bright and dark) envelope solitons. It is also found that the dark (bright) envelope solitons are modulationally stable (unstable). The variation of the growth rate of the unstable bright envelope solitons with various plasma parameters (e.g. wave number, temperature of super thermal electrons, etc.) are found to be significant. The modulational instability criterions of the modified ion-acoustic envelope solitons are also seen to be influenced due to the variation of the intrinsic plasma parameters. The implications of the results of this theoretical investigations in some space plasma systems (viz. Saturn's magnetosphere) are briefly mentioned.