Compressive and Rarefactive Waves in Dust Plasma with Non-thermal Ions

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Abstract: The governing equation of the dust fluid with non-thermal ions and variable dust charge on dust particles in hot dust plasmas is obtained. Both the compressive and rarefactive waves in this system are investigated. They can be determined by plasma parameters including the temperatures of dust fluid, ions and electrons, as well as the non-thermal parameter of ions, and the number densities of the dust particles, the ions and the electrons, etc.

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Key words: compressive wave, rarefactive wave, soliton

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