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On the growth rate instability of nonextensively opposite polarity dusty plasmas

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Abstract

Nonlinear obliquely and wave instability features in a magnetized collisionless dusty plasma containing negative- positive dusty grains are theoretically explored. The equation of Zakharov Kuznetsov is derived by reductive perturbation calculations and three dimensional wave instability is examined using small k expansion procedure. The system parameters namely, cyclotron frequency, the polarity grain charges ratio, nonextensive effects on DA wave properties and instability growth rate are discussed. Present dissection can be important in phenomena of nonlinear perception in astrophysical plasma of space.

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