International EMMI Workshop on Plasma Physics at FAIR, GSI Darmstadt, June 21 - 23, 2017



Contribution ID: 45 Type: **not specified**

THE INSTABILITY OF SHEAR VORTEX WAVES IN A VISCOELASTIC DUSTY PLASMA SYSTEMS: BY LOCAL APPROXIMATION METHODE

Wednesday, 21 June 2017 16:00 (1h 45m)

The influence of elliptical vortex on low frequency collective modes in a viscoelastic dusty plasma is analyzed using the generalized hydrodynamic equation (GH). Recalling the local approximation method, the space dependent terms (arising from the equilibrium flows) can be described. In the limit $\omega\gg k_x\ v_0x$ or $\omega\gg k_y\ v_0y$, it is shown that the correlation effects (viscosity(η) and collision frequency ($\boxtimes v\boxtimes d$ n)) and the velocity shear of the vortex coupling supply the free energy for the instabilities consisting of transverse shear waves. The analytical solution discusses that distance from equilibrium space not affected on the growth rate of instability.

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Session Classification: Poster Session with Coffee break