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Nonlinear waves from a localized vortex source in strongly correlated fluids AKANKSHA GUPTA, RAJARAMAN GANESH, Institute for Plasma Research, Bhat, Gandhinagar - 382428, India, ASHWIN JOY, Department of Physics, Indian Institute of Technology Madras, Chennai - 600036, India — Highly charged quasi two-dimensional grain medium (complex plasma) is a remarkable test-bed to study wave like phenomena [1,2]. Understanding of such wave propagation has many important applications in geophysics, petroleum engineering, and mining, earthquakes, and seismology [3]. In the present study, for the first time, the propagation of nonlinear wave which originates from localized coherent vortex source has been studied using molecular dynamics simulation taking Yukawa liquids as a prototype for strongly correlated fluid. In this work, the coupling of transverse and longitudinal mode, effect of azimuthal speed of vortex source on the linear and nonlinear properties of generated wave will be presented as a function of strong correlation[4].

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Akanksha Gupta
Institute for Plasma Research, Bhat, Gandhinagar - 382428, India

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