

Self-organization of Symmetric Structures in the Vortex Dynamics in a Non-neutral Plasma

Yasuhito Kiwamoto[1]

[1] Grad. Schl. Human & Env. Sci., Kyoto Univ.

<http://www.plasma.jinkan.kyoto-u.ac.jp>

Some topics are reported as observed in a desktop experiment on vortex dynamics of pure electron plasma that bears a remarkably long confinement time. The topics include: (1) crystallization of vortex strings punctuated by occasional catastrophes followed again by a next stage of crystallized configuration, (2) Kelvin-Helmholtz instability-driven break-up of symmetric shear-flow and recovery of a symmetric shear-free distribution via turbulence, (3) stimulated resonant interaction between weakly-unstable flow and externally injected co-rotating clumps.