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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PDE

Long time dynamics and stability of multi-vortex solution

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Abstract

Classical variational approach of maximizing the kinetic energy with various constraints provides vortex stability in several special cases, but in general this approach fails when the vorticity is concentrated at several points in the fluid domain. This is simply because such configurations are not local kinetic energy maximizers, even when we restrict the admissible class using all the other coercive conserved quantities of fluid motion. In this talk, we present several results on the stability of multi-vortex solutions, obtained by combining classical variational approaches with dynamical bootstrapping schemes. We focus on the case of multiple Lamb dipoles weakly interacting with each other. This is based on joint works with Ken Abe, Kyudong Choi, and Yao Yao.

Date: 12 September 2025 (Friday)

Time: 9:30am

Zoom Meeting: https://hkust.zoom.us/j/96623083524 **(Passcode: 054468)**

All are Welcome!