THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PDE

Overhanging solitary water waves

Prof. Miles H. Wheeler

University of Bath

Abstract

We construct gravity water waves with constant vorticity having the approximate form of a disk joined to a strip by a thin neck. This is the first rigorous existence result for such waves, which have been seen in numerics since the 80s and 90s. Our method is related to the construction of constant mean curvature surfaces through gluing, and involves combining three explicit solutions to related problems: a disk of fluid in rigid rotation, a linear shear flow in a strip, and a rescaled version of an exceptional domain discovered by Hauswirth, Helein, and Pacard. This is joint work with Juan Davila, Manuel del Pino, and Monica Musso.

Date: **7 November 2024 (Thursday)**

Time: **4:00pm**

Zoom Meeting: https://hkust.zoom.us/j/93785108632 **(Passcode: 840183)**

All are Welcome!