



Department of Mathematics

The Institute of Mathematical Sciences

The Chinese University of Hong Kong

數學系

數學科學研究所

香港中文大學

Phone: (852) 3943 7988 • Fax: (852) 2603 5154 • Email: dept@math.cuhk.edu.hk (Math. Dept.)
Room 220, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

Joint Geometric Analysis Seminar

(Part of MIST program)

Energy convexity and uniformity of H-surface flow in two dimensions

Prof. Longzhi Lin
University of California, Santa Cruz

Abstract

In this talk, we present a convexity property of the energy functional for surfaces of prescribed mean curvature (also known as H-surfaces) in \mathbb{R}^3 with prescribed Dirichlet boundary data, yielding a quantitative uniqueness result for solutions to the H-surface equation. We will also discuss an energy convexity property along the heat flow for H-surfaces in \mathbb{R}^3 , assuming only that the initial Dirichlet energy is sufficiently small, leading to a new theorem on the existence of weak solutions, long-time existence, and uniform convergence of the flow to a solution of the H-surface system with prescribed Dirichlet boundary conditions. This talk is based on a recent joint work with Da Rong Cheng and Xin Zhou.

Date: June 12, 2025 (Thursday)

Time: 10:00am-11:00am

Venue: LSB 222

All are Welcome