THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PDE

Horizontally quasiconvex envelope in the Heisenberg group

By

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Abstract

Abstract: Various notions of convexity of sets and functions in the Heisenberg group have been studied in the past two decades. In this talk, we focus on the horizontally quasiconvex (h-quasiconvex) functions in the Heisenberg group. Inspired by the first-order characterization and construction of quasiconvex envelope by Barron, Goebel and Jensen in the Euclidean space, we obtain a PDE approach to construct the h-quasiconvex envelope for a given function f in the Heisenberg group. In particular, we show the uniqueness and existence of viscosity solutions to a non-local Hamilton-Jacobi equation and iterate the equation to obtain the h-quasiconvex envelope. Relations between h-convex hull of a set and the h-quasiconvex envelopes are also investigated. This is joint work with Antoni Kijowski (OIST) and Qing Liu (Fukuoka University/OIST).

Date : 25 March 2022 (Friday)

Time : 9:00am

Zoom Meeting : https://hkust.zoom.us/j/98049654261 **(Passcode: 495913)**

All are Welcome!