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Analysis Seminar

Quantitative Rectifiability and Singular Integrals in Heisenberg Groups

Professor Vasileios Chousionis

Department of Mathematics
University of Connecticut

Abstract: Rectifiable sets extend the class of surfaces considered in classical differential geometry; while admitting a few edges and sharp corners, they are still smooth enough to support a rich theory of local analysis. However, for certain questions of global nature the notion of rectifiability is too qualitative. In a series of influential papers around the year 1990, David and Semmes developed an extensive theory of quantitative rectifiability in Euclidean spaces. A motivation for their efforts was the significance of a geometric framework for the study of certain singular integrals and their connections to removability. We will discuss recent results which lay the foundations for a theory of quantitative rectifiability in Heisenberg groups. As in the Euclidean case motivation stems from questions involving singular integrals and removability. We will see that, in certain aspects, the situation is very different than in Euclidean spaces.

Based on joint works with Sean Li (UConn) and Robert Young (NYU).

Date: Tuesday, 11 April 2023

Time: 10:30 am – 11:30 am

Venue: Room 219, Lady Shaw Building,

The Chinese University of Hong Kong, Shatin

All are Welcome!