



Department of Mathematics
The Chinese University of Hong Kong

數學系
香港中文大學

Phone: (852) 3943 7988 / 3943 7989 • Fax: (852) 2603 5154 • Email: dept@math.cuhk.edu.hk
Rm. 220, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

Seminar

A Kaufman Type Restricted Projection Theorem to Lines in \mathbb{R}^3

Dr. Tongou Yang
Department of Mathematics
University of Wisconsin-Madison

Abstract: Given a C^2 nondegenerate curve lying on the unit sphere in three dimensions. We answer a question of Fässler and Orponen, which says that for any Borel set A , its projection into almost all directions determined by the image of the curve has a sharp Hausdorff dimension given by $\min\{\dim(A), 1\}$. We achieve this by proving a Kaufman type estimate on the Hausdorff dimension of the exceptional set. One key feature of our argument is a result of Marcus-Tardos in topological graph theory, and our proof does not use any Fourier analysis. We also point out other recent developments of this problem. This is joint work with Malabika Pramanik and Joshua Zahl.

Date: 29 December 2022 (Thursday)
Time: 3:00 pm – 4:00 pm
Venue: Room 222, Lady Shaw Building,
The Chinese University of Hong Kong, Shatin

All are Welcome!