



Department of Mathematics  
香港城市大學  
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## DEPARTMENT OF MATHEMATICS

City University of Hong Kong

### A Kaufman type restricted projection theorem to lines in $\mathbb{R}^3$ by

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**Date: 17 Jan. 2023 (Tuesday)**

**Time: 4:00 – 5:00 pm**

**Venue: Y5-205, Yeung Kin Man Academic Building**

#### ABSTRACT

Fix any  $C^2$  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.



~ALL ARE WELCOME~

