



THE HONG KONG UNIVERSITY OF SCIENCE TECHNOLOGY

Department of Mathematics

MATHEMATICS COLLOQUIUM

On Besicovitch compression of curves and surfaces

By

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Abstract

Given a subset of $\mathbb{R}^d$ containing copies of prescribed curves or surfaces, what is a sharp estimate on the size of smallest such subset? For example, Besicovitch proved the existence of a measure zero compact set that contains a unit line segment in every direction, which is famously known as a Kakeya set. On the other hand, the famous Kakeya conjecture asserts that such Kakeya sets in $\mathbb{R}^d$ must have full dimension d . In this talk, we shall discuss the key geometric reasoning behind how far we can compress these curves or surfaces into a tiny subset.

Date : 23 October 2026 (Friday)

Time : 3:00pm - 4:00pm

Venue : Lecture Theatre K (near Lift 31/32)

All Are Welcome!