Department of Mathematics,
University of California San Diego

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Department Colloquium

Hong Wang

UCLA

Sticky Kakeya sets in R^3

Abstract:

A Kakeya set is a set of points in R^n which contains a unit line segment in every direction. The Kakeya conjecture states that the dimension of any Kakeya set is n. This conjecture remains wide open for all n $\geq$ 3.

Together with Josh Zahl, we study a special collection of the Kakeya sets, namely the sticky Kakeya sets where the line segments in nearby directions stay close. We prove that sticky Kakeya sets in R^3 have dimension 3. In this talk, we will discuss background of the problem and its connection to analysis, combinatorics, and geometric measure theory.

Ioan Bejenaru

May 4, 2023

4:00 PM

APM 6402

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