



复旦大学数学科学学院

数学综合报告会

报告题目: Sticky Kakeya sets in $\mathbb{R}^3$

报告人: 王虹 (UCLA)

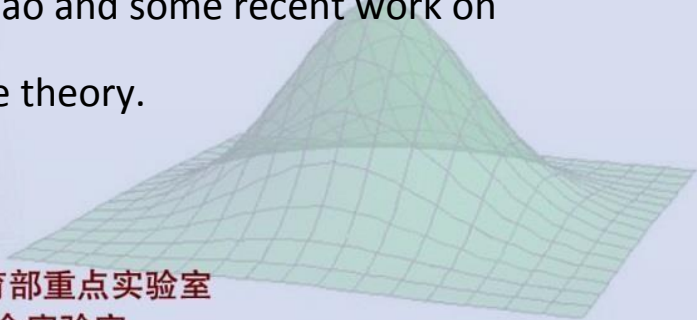
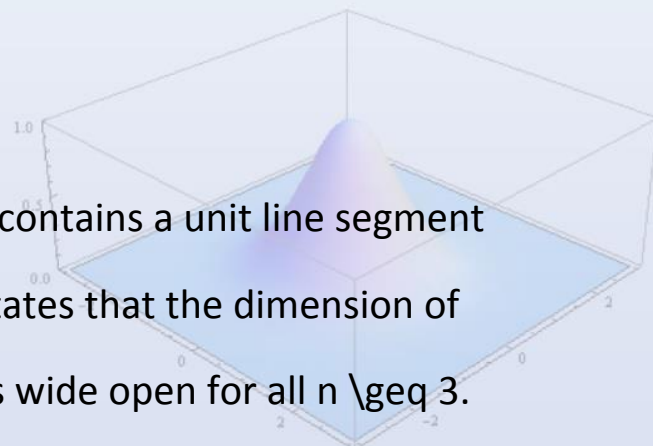
时间: 2023-04-24 星期一 15:00-16:00

地点: 光华东主楼 1601

报告摘要:

A Kakeya set is a set of points in $\mathbb{R}^n$ 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 $\mathbb{R}^3$ have dimension 3, based on ideas of Katz and Tao and some recent work on projection theorems in geometric measure theory.



非线性数学模型与方法教育部重点实验室
中法应用数学国际联合实验室
上海市现代应用数学重点实验室
复旦大学数学研究所