Department of Mathematics
The Chinese University of Hong Kong

數學系
香港中文大學

Seminar

Erdös-falconer Type Problems in Euclidean Spaces

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Abstract: One of the most important and far reaching problems in modern geometric measure theory is the Falconer distance problem, which asks: How large does the Hausdorff dimension s of a compact set $E \subset \mathbb{R}^d$; $d \geq 2$, need to be to ensure the distance set

$$\Delta(E) = \{|x - y| : x, y \in E\}$$

has positive Lebesgue measure. Falconer proved that $s > \frac{d}{2}$ is necessary, up to the endpoint, and conjecured its sufficiency. Over the recent 30 years, the best known exponent is $\frac{d}{2} + \frac{1}{3}$, due to T. Wolff on the plane and B. Erdogan in higher dimensions. In this talk, I will introduce the development of this conjecture and results of related problems where distance is replaced by other geometric notions.

Date:	21 December 2015 (Monday)
Time:	11:00 a.m. – 12:00 noon
Venue:	Room 219, Lady Shaw Building
	The Chinese University of Hong Kong, Shatin

All are Welcome!