

Title

Exponential Frames and Bases for Fractals.

Abstract:

It is well-known that $L^2[0,1]$ admits exponential orthonormal basis of the form $\{e^{2\pi i n x} : n \in \mathbb{Z}\}$. Such exponential orthonormal bases were also known to exist for the middle-fourth Cantor measures, but it does not exist for the standard middle-third Cantor measure. In this talk, we will discuss two open problems and its progress which have been studied in depth by Ka-Sing and his group of students:

1. (Strichartz Question) Does Fourier frame exist for middle-third Cantor measure?
2. (Laba-Wang conjecture) A conjecture classifying all self-similar measures admitting exponential orthonormal bases.

Speaker

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