数学与系统科学研究院

计算数学所学术报告

报告人：Prof. Yang Wang

（ *Hong Kong University of Science and Technology* ）

报告题目：

Fractal Measures with Fourier Bases and Frames

邀请人： 许志强 研究员

报告时间：2016 年 7 月 15 日（周五）

下午 15:00-16:00

报告地点： 科技综合楼三层

311 报告厅

Abstract：

It is well known that $\{e^{2\pi i nx:~n\in \mathbb{Z}}\}$ forms an orthonormal basis for $L^2([0,1])$. A set Ω such that $L^2(\Omega)$ admits an orthogonal basis consisting of complex exponentials (a Fourier basis) is called a spectral set. This concept extends to a measure, where a spectral measure is a measure that admits a Fourier orthonormal basis. Many fractal measures have shown to be spectral measures. One of the best known example is the self-similar measure induced by the contractions $\phi_1(x) = \frac{1}{4}x$ and $\phi_2(x) = \frac{1}{4}x+\frac{1}{4}$. It is also known that the classic Cantor-$\frac{1}{3}$ measure is not a spectral measure. One natural question is: Can we relax the condition a little to construct a Fourier frame for this measure? In fact, we ask whether it is possible to construct a Fourier frame on fractal measures that are not spectral. In this talk I'll go over some of the background and give an overview of the field. We also show that Fourier frames do exist on some nonspectral fractal measures.

欢迎大家参加！