DYNAMIC BEHAVIOUS OF THE ITERATION OF THE TRACE MAPPING ASSOCIATED WITH SUBSTITUTIVE SEQUENCE

Speaker: Professor Zhiying Wen

Tsinghua University

Time： Tuesday, April 1, 2025, 15:00-16:00

Venue： Room 1801, East Main Guanghua Tower

Abstract： 介绍一类由代换律生成的无穷序列引入的3D动力系统，该系统涉及到数学的一些不同的分支，报告将介绍系统的一些基本性质，和其它学科的联系和一些问题。

DIMENSION OF DIVERGENCE POINTS RELATED TO L\"{U}ROTH EXPANSION

Speaker: Professor Wenxia Li

East China Normal University

Time：Tuesday, April 1, 2025, 16:00-17:00

Venue：Room 1801, East Main Guanghua Tower

Abstract： Associated to the L\"{u}roth expansion of an irrational number $\bar{x}\in (0, 1)$ is a sequence $x=\{x_i\}\in {\mathbb N}^{\mathbb N}$. Then for each n, one can get an infinite probability vector $\Pi(x|n)=(p_{i,n})_{i\in \mathbb N}$ where $p_{i,n}$ is the frequency of i occurring in the prefix of $\{x_i\}$ of length n. Let $ A(\{\Pi(x|n)\}_{n\in \mathbb N})$ be the set of accumulation points of the sequence $\{\Pi(x|n)\}_{n\in \mathbb N}$. Given a set C, let

$$\Omega_{=C}=\left \{x \in {\mathbb N}^{\mathbb N}: A(\{\Pi(x|n)\}_{n\in \mathbb N})= C\right \}\;\;\text{and}\;\;
\Omega_{\subseteq C}=\left\{x\in {\mathbb N}^{\mathbb N}: A(\{\Pi(x|n)\}_{n\in \mathbb N})\subseteq C\right\}.$$

In this talk, we mainly present the Hausdorff dimensions of $\Omega_{=C}$ and $\Omega_{\subseteq C}$. This is a joint work with Y. X. Gui and Y. Zhou.