



MATH-IMS Joint Applied Mathematics Colloquium Series
The Chinese University of Hong Kong

This MATH-IMS Joint Colloquium Series is organized by Center for Mathematical Artificial Intelligence (CMAI), under Department of Mathematics and Institute of Mathematical Sciences (IMS) at The Chinese University of Hong Kong. The colloquium series focuses on mathematics and applications of artificial intelligence, big data and related topics.

Date: Dec 17, 2021 (Friday)

Time: 10:00-11:00 am (Hong Kong Time)

Zoom Link: <https://cuhk.zoom.us/j/92775210812>

Chaotic Behavior of Dynamical Systems Driven by an External Forcing

*Speaker: Professor Kening Lu
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Abstract: This talk contains three parts: (1) The existence of SRB measures for parabolic PDEs undergoing Hopf bifurcations driven by a periodic forcing with applications to the Brusselator; (2) Positive entropy implying the existence of horseshoes for infinite dimensional random dynamical systems; (3) Chaotic behavior of Anosov systems driven by a quasi-periodic forcing. This talk is based on the joint works with Wen Huang, Zeng Lian, Peidong Liu, Quidong Wang, and Lai-Sang Young.

Bio: Kening Lu is a professor of mathematics at Brigham Young University. He received a BS degree in 1982 and a MS degree in 1985 both from Sichuan University. After receiving his Ph.D. from Michigan State University in 1988, he was a postdoctoral fellow at Georgia Institute of Technology in 1988 and at Institute for Mathematics and its Applications in 1989. He joined the faculty of the Department of Mathematics at Brigham Young University in 1990. In 2021, he became a fellow of the American Mathematical Society. His research interest includes dynamical systems, partial differential equations, stochastic partial differential equations and financial mathematics. Prof. Lu has published more than 90 papers in leading journals including *Inventiones mathematicae*, *Communications on Pure and Applied Mathematics*, *Memoirs of American Mathematical Society*, *Archive for Rational Mechanics and Analysis* and *Advances in Mathematics*. Prof. Lu is the Chief Editor of *Journal of Differential Equations*, and the editor of several international top journals including *Advanced Nonlinear Studies*, *Stochastics and Dynamics*, *Discrete & Continuous Dynamical Systems A*, *Frontiers of Mathematics in China*, etc.