Department of Mathematics
The Chinese University of Hong Kong

數學系
香港中文大學

Phone: (852) 3943 7988-9 • Fax: (852) 2603 5154 • Email: dept@math.cuhk.edu.hk
Rm. 220, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

Kinetic Seminar

Learning operators for identifying weak solutions to the Navier-Stokes equations

by

Dr Dixi WANG
University of Florida

Abstract :
We employ a combination of deep learning methods and compactness argument to derive learning operators for weak solutions of Navier-Stokes equations for any large initial data 2D, and for low dimensional initial data in 3D. Additionally, we utilize the universal approximation theorem to derive the lower bound on the number of sensors required to achieve accurate identification of weak solutions in 3D. Our results demonstrate the potential of using deep learning techniques to address challenges in the study of fluid mechanics, particularly in identifying weak solutions to the Navier-Stokes equations. This is a joint work with Dr. Cheng Yu.

Date :	June 21, 2023 (Wednesday)
Time :	10:00am – 11:00am (Hong Kong SAR)
Venue:	Room 222, Lady Shaw Building,
	The Chinese University of Hong Kong, Shatin

All are Welcome