

Recent Progress on Theoretical and Computational Aspects of Nonlinear PDEs

Date 2024.01.03 **Venue** R515 Cosmology Bldg. NTU

Aim & Scope

This workshop endeavors to assemble researchers keenly interested in the cutting-edge advancements in the "Recent Progress on Theoretical and Computational Aspects of Nonlinear PDEs."

Recent strides in employing computer-assisted proofs to grapple with intricate challenges in partial differential equations (PDEs) underscore a noteworthy trend. One exemplary collaboration in this domain involves Professor Thomas Yizhao Hou and Jiajie Chen, concentrating on the rigorous analysis of blowup in 3D incompressible flows with boundaries. Their work, where computer assistance played a pivotal role, showcases the fusion of analysis and numerical computation with meticulous error control, presenting potential applications across various nonlinear PDEs. Further notable contributions come from the recent initiatives of researchers like Yongji Wang, Ching Yao Lai, and others, who utilized Physics Informed Neural Networks (PINN) to rediscover the self-similar blowup profile stemming from Professor Hou's earlier collaboration with his former postdoc, Guo Luo.

During this workshop, we will invite Professor Thomas Yizhao Hou from Caltech University as a keynote speaker, who will elucidate his recent groundbreaking achievements in theorem and computation research related to Euler equations and Navier-Stokes equations. Additionally, we have extended invitations to several domestic experts in related research fields to deliver talks and engage in profound discussions with Professor Hou regarding his recent results. We anticipate that his visit will foster vibrant international academic exchanges among scholars in related research fields and participating students.

Contact : Peggy Lee (peggylee@ncts.tw)

Plenary Speaker

Thomas Yizhao Hou

California Institute of Technology

Invited Speakers

Jann-Long Chern

National Taiwan Normal University

Yen-Huan Li

National Taiwan University

Tai-Chia Lin

National Taiwan University

Te-Sheng Lin

National Yang Ming Chiao Tung University

Bing-Ze Lu

National Cheng-Kung University

Van Tien Nguyen

National Taiwan University

Jenn-Nan Wang

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