# 2024 Conference on Control, Inversion and Numerics for PDEs



## ● Event Description:

The main purpose of this conference is to share new mathematical tools and methods for systems governed by PDEs arising in real world applications, in the broad area of dynamics and control of PDEs and related topics such as stabilization, data uncertainty, optimal control and inverse problems.

This event serves also as a meeting point of researchers working from Germany and China, both junior and senior, and a unique opportunity to know each other and build-up new cooperation in the project Sino-German Mobility Program CIN-PDE: Control, Inversion and Numerics for Partial Differential Equations.

## ● Conference Location:

Room 2201(Main venue) and Room 2001 (Sub-venue). Guanghua East Main Building. Fudan University Handan Road 220. 200433 Shanghai,China

## ● Conference Time:

October 7th-10th, 2024

## ● Organized by:

1. School of Mathematical Sciences, Fudan University
2. Friedrich-Alexander-Universität Erlangen-Nürnberg
3. Center for Applied Mathematics, Fudan University

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# Schedule

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| **Monday Oct. 7** | |
| 10:00—18:00 | Registration at Shanghai Pagoda Jun Ting Hotel（上海君亭设计酒店） |
| **Tuesday Oct. 8** | **Main-venue: Room 2201, 22nd floor, Guanghua East Main Building（光华楼东主楼 2201 室）**<br>**Sub-venue: Room 2001, 20th floor, Guanghua East Main Building（光华楼东主楼 2001 室）** |
| 8:50-9:10 | Opening ceremony |
| 9:10-9:15 | Group photo |
| 9:15-10:00 | Speaker: Weinan E<br>Title: Towards an Understanding of the Principles behind Deep Learning |
| 10:00-10:45 | Speaker: Gunther Uhlmann<br>Title: Inverse Problems in Anisotropic Media |
| 10:45-11:00 | Tea break and poster exhibition |
| 11:00-11:45 | Speaker: Enrique Zuazua<br>Title: Data Representation by Neural Networks: A Control Perspective |
| 12:00-14:30 | Lunch |
| 14:30-15:15 | Speaker: Shanjian Tang<br>Title: Viscosity Solution of Second-Order Path-dependent HJB Equation in Hilbert Spaces |
| 15:15-16:00 | Speaker: Yuehong Qian<br>Title: Alternative Approach to Solving some Special PDEs |
| 16:00-16:15 | Tea break and poster exhibition |
| 16:15-17:00 | Speaker: Pengfei Yao<br>Title: Geometrical Rigidity of Elastic Shells |
| 17:00-17:45 | Speaker: Qiong Zhang<br>Title: Stability Analysis of an Abstract System with Local Damping |
| 18:00 | Dinner |
| **Wednesday Oct. 9** | **Room 2201, 22nd floor, Guanghua East Main Building（光华楼东主楼 2201 室）** |
| 9:15-10:00 | Speaker: Shi Jin<br>Title: Dimension Liftings for Quantum Computation of Partial Differential Equations and Related Problems |
| 10:00-10:45 | Speaker: Xiaoming Yuan<br>Title: Revisiting First-order Algorithms for Optimization Problems in Industry |
| 10:45-11:00 | Tea break and poster exhibition |
| 11:00-11:45 | Speaker: Jin Cheng<br>Title: Runge Approximation and Learning based Numerical Methods for Lame Equations |
| 12:00-14:30 | Lunch |
| 14:30-15:15 | Speaker: Qianxiao Li<br>Title: Learning, Approximation and Control |
| 15:15-16:00 | Speaker: Zhiqiang Wang<br>Title: Stabilization of 1-D Wave Equation with Rational Time Delays |
| 16:00-16:15 | Tea break and poster exhibition |
| 16:15-17:00 | Speaker: Shuangjian Zhang<br>Title: Characterization of the Monopolist's Profit-Maximization Problem as a Free-Boundary Problem |
| 17:30 | Dinner |
| **Thursday Oct. 10** | **Room 2201, 22nd floor, Guanghua East Building（光华楼东主楼 2201 室）** |
| 9:15-10:00 | Speaker: Xu Zhang<br>Title: PDE Approach in Infinite-Dimensional Complex Analysis |
| 10:00-10:45 | Speaker: Günter Leugering & Yue Wang<br>Title: Exact Boundary Controllability of a Timoshenko Beam |
| 10:45-11:00 | Tea break and poster exhibition |
| 11:00-11:45 | Speaker: Jian Zhai<br>Title: Inverting the Local Transverse and Mixed Ray Transforms |
| 12:00-14:30 | Lunch |
| 14:30-16:00 | Free discussion |