

Machine Learning and PDEs

#MLPDES25 WORKSHOP

#MLPDES25 Schedule • Time table

	MON. APRIL 28, 2025	TUE. APRIL 29, 2025	WED. APRIL 30, 2025
09:30H 10:00H	Registration Opening ceremony	Gabriel Peyré. CNRS, ENS-PSL Transformers are universal in-context learners	Juncheng Wei. CUHK On Brezis's first open problem: A complete solution
10:00H 10:30H	Paola Antonietti. Polimi Machine Learning enhanced polytopal finite element methods for neurodegenerative disorder modeling	Gianluca Orlando. Poliba Replicator dynamics as the large-population limit of a multi- strategy discrete Moran process	Francesco Regazzoni. Polimi Discovering the hidden low- dimensional dynamics of time- dependent PDEs with latent dynamics networks
10:30H	COFFEE / TEA BREAK		
11:00H 11:30H	Daniel Tenbrinck. FAU Eigenvalue problems on graphs and hypergraphs	Alessandro Coclite. Poliba Replicator dynamics on a network	Daniela Tonon. UNIPD Hamilton-Jacobi equations on infinite dimensional spaces
11:30H 12:00H	Camilla Nobili. Surrey Quantification of enhanced dissipation and mixing for time-dependent shear flows	Borjan Geshkovski. Inria S. Many-particle systems perspective on Transformers	Shi Jin. SJTU Allen-Cahn message passing in graph neural networks and fast Sinkhorn for Wasserstein-1 metric
12:00H	LUNCH BREAK		
14:30H 15:00H	Paola Goatin. Inria S.A. Modern calibration strategies for macroscopic traffic flow models	Domènec Ruiz-Balet. PSL Some remarks on matching measures with Machine Learning architectures	Anne Koelewijn. FAU SSPINNpose: Self-supervised learning of biomechanical variables without ground truth
15:00H 15:30H	Michele Palladino. UAQ Handling uncertainty in optimal control	Alessio Porretta. UNIROMA2 Diffusion effects in optimal transport and mean-field planning models	Wei Zhu. Georgia Tech Structure-Preserving Machine Learning and Data-Driven structure discovery
15:30H	COFFEE / TEA BREAK		
16:00H 16:30H	Alexander Keimer. Rostock Optimal control of nonlocal conservation laws and the singular limit	Yaoyu Zhang. SJTU The condensation phenomenon of Deep Neural Networks	Giovanni Fantuzzi. FAU Exact sequence classification with hardmax transformers
16:30H 17:00H	Fariba Fahroo. AFOSR Felix J. Knutson. AFOSR International grant opportunities and research interests of the AFOSR	Günter Leugering. FAU The Speinshart Scientific Center for AI and Supertech	Closing ceremony
17:00H	Lorenzo Liverani. FAU Projects and opportunities at the Chair for Dynamics, Control, Machine Learning and Numerics	20:00H SOCIAL DINNER	

WHERE

Onsite. FAU Senatssaal (Senate Hall) im
Kollegienhaus. Universitätsstraße 15, 91054
Erlangen - Bavaria, Germany

Online (live streaming):
<https://www.fau.tv/fau-mod-livestream-2025>

REGISTRATION

Free but mandatory.
www.dcn.nat.fau.eu/mlpdes25-registration



www.mod.fau.eu/mlpdes25

SCIENTIFIC COMMITTEE

Giuseppe Maria Coclite. Poliba
Enrique Zuazua. FAU

ORGANIZING COMMITTEE

Darlis Bracho Tudares. FAU
Nicola De Nitti. UniPi
Lorenzo Liverani. FAU