

# 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 <b>Opening ceremony</b>	<b>Wei Zhu. Georgia Tech</b> Structure-Preserving Machine Learning and Data-Driven structure discovery	<b>Fariba Fahroo. AFOSR</b> TBA
10:00H 10:30H	<b>Daniel Tenbrinck. FAU</b> Eigenvalue problems on graphs and hypergraphs	<b>Gabriel Peyré. CNRS, ENS-PSL</b> Transformers are universal in-context learners	<b>Borjan Geshkovski. Inria S.</b> Many-particle systems perspective on Transformers
10:30H	COFFEE / TEA BREAK		
11:00H 11:30H	<b>Gianluca Orlando. Poliba</b> A comparison between peridynamic and classical waves	<b>Yaoyu Zhang. SJTU</b> The condensation phenomenon of Deep Neural Networks	<b>Daniela Tonon. UNIPD</b> Hamilton-Jacobi equations on infinite dimensional spaces
11:30H 12:00H	<b>Camilla Nobili. Surrey</b> Quantification of enhanced dissipation and mixing for time-dependent shear flows	<b>Paola Antonietti. Polimi</b> Machine Learning enhanced polytopal finite element methods	<b>Alessio Porretta. UNIROMA2</b> Diffusion effects in optimal transport and mean-field planning models
12:00H	LUNCH BREAK		
14:30H 15:00H	<b>Alexander Keimer. Rostock</b> Optimal control of nonlocal conservation laws and the singular limit	<b>Francesco Regazzoni. Polimi</b> Discovering the hidden low-dimensional dynamics of time-dependent PDEs with latent dynamics networks	<b>Anne Koelewijn. FAU</b> SSPINNpose: Self-supervised learning of biomechanical variables without ground truth
15:00H 15:30H	<b>Michele Palladino. UAQ</b> Handling uncertainty in optimal control	<b>Giovanni Fantuzzi. FAU</b> Data-driven system analysis: Polynomial optimization meets Koopman	<b>Miroslav Krstic. UC San Diego</b> Neural Operators: Implementation enablers for PDE control
15:30H	COFFEE / TEA BREAK		
16:00H 16:30H	<b>Paola Goatin. Inria S.A.</b> Data-driven simulation, uncertainty quantification and optimization for hyperbolic and kinetic models	<b>Domènec Ruiz-Balet. Imperial</b> Some remarks on matching measures with Machine Learning architectures	<b>Closing ceremony</b>
20:00H	Social dinner		

#### Scientific Committee

- **Giuseppe Maria Coclite.** Politecnico di Bari
- **Enrique Zuazua.** FAU MoD/DCN-AvH, Friedrich-Alexander-Universität Erlangen-Nürnberg

#### Organizing Committee

- **Darlis Bracho Tudares.** FAU MoD/DCN-AvH, Friedrich-Alexander-Universität Erlangen-Nürnberg
- **Nicola De Nitti.** EPFL, École Polytechnique Fédérale de Lausanne
- **Lorenzo Liverani.** FAU DCN-AvH, Friedrich-Alexander-Universität Erlangen-Nürnberg