



Young Applied Mathematicians Conference
16 September 2024 – 20 September 2024
Rome, Italy

Programme

Legend

Plenary talk (60')
[L] Long presentation (40')
Short presentation (20')
[MC] Mini-course (60')
[MS] Mini-symposium (120')
[S] Sponsor presentation (40')
Social event
Coffee break, Launch time, and breaks
Travel time

Monday 16 September 2024

9:00–10:30	Plenary Session (room IV, <i>Chair G. A. D'inverno</i>) Gabriella Puppo Stefano Berrone	Conference Opening Variational Physics Informed Neural Networks: quadrature rules, test functions and “a posteriori” error estimates
10:30–11:00	Coffee Break	
11:00–13:00	Morning Sessions (room IV, <i>Chair E. Onofri</i>)	
	Daniele De Sensi	[MC] Writing, Benchmarking, and Reproducibility in Research Papers
	Federico Nudo	[L] Histopolation via mock-Chebyshev points
	Grazia Gargano	A multi-factor approach to identify differentially expressed genes in transcriptome data
11:00–13:00	Morning Sessions (room V, <i>Chair C. Graziani</i>)	
	G. Alessio D’Inverno	[MC] PINA: A Python Software for Scientific Machine Learning
	Federico Pichi	[L] Graph-based machine learning approaches for model order reduction
	Veronica Tora	Mathematical models on graphs in Alzheimer’s brain
13:00–15:00	Lunch Time	
15:00–18:00	Afternoon Sessions (room IV, <i>Chair A. Kushova</i>)	
	Piero Deidda	The Joint Spectral Radius of Neural Networks
	Eleonora Maggiorelli	An high order AT1 phase-field model for brittle fracture
	Lorenzo Zambon	[MS] Hierarchical Forecasting (part I)
	Break	
	Lorenzo Zambon	[MS] Hierarchical Forecasting (part II)
15:00–18:00	Afternoon Sessions (room V, <i>Chair G. Auricchio</i>)	
	Laura Girometti	A non-convex optimization strategy applied to signal decomposition
	Andrea Perchiazzo	Pricing European Options using the Gauss-Laguerre quadrature: Application to a Compound CARMA(p,q)-Hawkes model
	Federico Nudo, Salah Eddargani	[MS] Recent advances in enriched finite element and isogeometric analysis (part I)
	Break	
	Federico Nudo, Salah Eddargani	[MS] Recent advances in enriched finite element and isogeometric analysis (part II)

Tuesday 17 September 2024

9:00–10:30	Plenary Session (room IV, <i>Chair G. Alessio D’Inverno</i>)	
	Org. Committee	Day opening
	Carla Manni	Smooth Splines on Triangulations
10:30–11:00	Coffee Break	
11:00–13:00	Morning Sessions (room IV, <i>Chair C. Graziani</i>)	
	Chiara Lucifora	[L] The VERSE platform: eXtended Reality in Education
	Alessandro Scagliotti	[L] Optimal control of ODEs with dynamics uncertainty
	Paolo Zuzolo	Spectral features for 3D shape analysis
	Anna Sanfilippo	Approximate Deconvolution Leray Reduced Order Model
11:00–13:00	Morning Sessions (room V, <i>Chair M. Menci</i>)	
	Silvia Preda	[L] High order semi-Lagrangian schemes and applications
	Giulia Tatafiore	An efficient semi-Lagrangian scheme for Fokker-Planck equations on unstructured grids
	Davide Torlo	Divergence-free preserving schemes: how to fix stabilization terms in continuous Galerkin for hyperbolic PDEs
	Elishan C. Braun	Numerical study on parameter effects of a new model for water penetration in porous media
	Ibrahim Almuslimani	Explicit stabilized implementation of implicit Runge-Kutta methods
13:00–15:00	Lunch Time	
15:00–18:00	Afternoon Plenary Sessions (room IV, <i>Chair E. Onofri</i>)	
	Fabrizio M. De Scisciolo, Filippo Biancone	[S] VERSE, by Dotslot: Education and Training in the Metaverse; Italian Innovation for Digital Learning
	Roberta Bianchini	(In-)stability in nonhomogeneous density fluids
	Break	
	Org. Committee	Organization, General Information, YAMC2025 et al.

Wednesday 18 September 2024

9:00–10:30	Plenary Session (room IV, <i>Chair A. Marchetti</i>) Org. Committee Maurizio Parton	Day Opening A Systematization of the Wagner Framework: Graph Theory Conjectures and Reinforcement Learning
10:30–11:00	Coffee Break	
11:00–13:00	Morning Sessions (room IV, <i>Chair S. Marziali</i>)	
	Anastasia Istratuca	[MC] Multilevel Monte Carlo Methods
	Stephan Gerster	[L] Feedback control for hyperbolic balance laws
	David Mavrodiev	Computational Model for Text Optimization: Substantive Reduction to Improve the Semantic Perception of Information
11:00–13:00	Morning Sessions (room V, <i>Chair G. Auricchio</i>)	
	Federico Nudo	[MC] Cubic and quadratic polynomial enrichments of the Crouzeix–Raviart finite element
	Bruno Degli Espositi	[L] Point cloud generation algorithm for 3D domains in B-Rep format
	Simone Milanesi	A funnel plot approach for monitoring Antibiotic Resistance in EU countries based on the WHO GLASS dashboard
13:00–15:00	Lunch Time	
15:00–18:00	Afternoon Sessions (room IV, <i>Chair S. Marziali</i>)	
	G. Alessio D'Inverno	[S] The iNEST project
	Nella Rotundo	[MS] Mathematical Frameworks and Numerical Methods for Complex Physical Systems (part I)
	Break	
	Nella Rotundo	[MS] Mathematical Frameworks and Numerical Methods for Complex Physical Systems (part II)
15:00–18:00	Afternoon Sessions (room V, <i>Chair C. Carrara</i>)	
	Elisa Calzola, Federica Ferrarese	[MS] Exploring efficient advanced numerical methods for Partial Differential Equations (part I)
	Break	
	Elisa Calzola, Federica Ferrarese	[MS] Exploring efficient advanced numerical methods for Partial Differential Equations (part II)
19:30–23:30	Social Dinner at La Limonaia, Villa Torlonia Via Lazzaro Spallanzani, 1/A, 00161 Roma	

Thursday 19 September 2024

9:00–10:30	Plenary Session (room IV, <i>Chair E. Onofri</i>) Org. Committee Roberto Natalini	Day Opening Vector BGK approximations to compressible and incompressible fluids
10:30–11:00	Coffee Break	
11:00–13:00	Morning Sessions (room IV, <i>Chair E. Onofri</i>) Francesca Ignoto Ilaria Ciaramaglia Davide Moretti Matteo Piu Luca Simi Alessandro Ravoni	Numerical Computation of Generalized Wasserstein Distances with Applications to Traffic Model Analysis Non-local traffic flow models with time delay: well-posedness and numerical approximation About clustering of time series: A case study using real traffic data Mathematical models for multilane traffic flow Improving Mapper with Metric Trees Studying long-lasting diseases using an agent-based model of the immune response
11:00–13:00	Morning Sessions (room V, <i>Chair G. A. D’Inverno</i>) Kateryna Morozovska Daniel Fakhouri Josephine Westermann Dimitrios G. Patsatzis Asli Larbi	[L] Optimal Sensor Placement in Power Transformers Using Physics-Informed Neural Networks On the expressivity of the ExSpliNet model Neural Networks vs Sparse Polynomials for Spectral Operator Surrogates Learning Slow Invariant Manifolds with Physics-Informed Neural Networks Automatic Character Recognitions Tamahaqt in Amazigh Language
13:00–15:00	Lunch Time	
15:00–18:00	Free Time	

Friday 20 September 2024

9:00–10:30	Plenary Session (room IV, <i>Chair M. Menci</i>) Org. Committee Giuseppe Visconti	Day Opening A general framework of implicit high-order schemes for hyperbolic systems
10:30–11:00	Coffee Break	
11:00–14:00	Morning Sessions (room IV, <i>Chair M. Menci</i>) Vincenzo S. Di Cola, Fabio V. Difonzo, Gio- vanni Pagano	[MS] Computational Techniques in Agriculture, Epidemiology, and Plant Pathology
11:00–12:40	Morning Sessions (room V, <i>Chair C. Carrara</i>) Domenico Caparello Tommaso Tenna Eya Zougar Robin Theriault Federico M. Quetti	A hierarchical hybrid numerical method for multi-scale Boltzmann equation with geometry Projective and Telescopic Projective Integration for the Multi-species Boltzmann Equation Stochastic heat equation in heterogeneous medium The Loss Landscape of Dense Associative Memory A Bayesian Approach to Clustering via the Proper Bayesian Bootstrap
13:00–15:00	Lunch Time	
15:00–18:00	Travel Time	

Timetable

	Monday 16		Tuesday 17		Wednesday 18		Thursday 19		Friday 20	
	Aula IV	Aula V	Aula IV	Aula V	Aula IV	Aula V	Aula IV	Aula V	Aula IV	Aula V
08:30 - 09:00	Badge Pickup	Badge Pickup	Badge Pickup	Badge Pickup	Badge Pickup	Badge Pickup	Badge Pickup	Badge Pickup	Badge Pickup	Badge Pickup
09:00 - 09:30	Opening	Opening	Opening	Opening	Opening	Opening	Opening	Opening	Opening	Opening
09:30 - 10:30	Berrone	Manni	Parfon	Natalini	Visconti	Visconti	Visconti	Visconti	Visconti	Visconti
10:30 - 11:00	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break
11:00 - 11:20	[MC] De Sensi	[MC] D'Inverno	Lucifora	Preda	[MC] Istratuca	[MC] Nudo	Ignoto	Morozovska	Caparello	Caparello
11:20 - 11:40			Scagliotti	Tatafiore				Ciaromaglia	Fakhouri	Tenna
11:40 - 12:00	Nudo	Pichi	Zuzolo	Toro	Gerster	Degli Esposti	Plu	Westermann	Zougar	Zougar
12:00 - 12:20			Braun					Piu	Patsatzis	Therfaut
12:20 - 12:40	Gargano	Tora	Sanfilippo	Almuslimani	Mavrodiev	Milanesi	Simi	Ravoni	[MS] Schiano Di Cola / Difonzo / Pagano	Quetti
12:40 - 13:00	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break
13:00 - 13:20										
13:20 - 13:40										
13:40 - 14:00										
14:00 - 14:20										
14:20 - 14:40										
14:40 - 15:00	Deidda	Girometti	DOTSLOT (Marra/Biancone)			iNEST (D'Inverno)	Larbi	Lunch break	Lunch break	Lunch break
15:00 - 15:20			Maggiorelli	Perchiazzo						
15:20 - 15:40	[MS] Zambon	[MS] Nudo / Eddargani	Blanchini			[MS] Nella Rotundo	[MS] Calzola / Ferraresse	Free Time	Free Time	Travel Time
15:40 - 16:00			Break							
16:00 - 16:20	[MS] Zambon	[MS] Nudo / Eddargani	Break			[MS] Nella Rotundo	[MS] Calzola / Ferraresse	Free Time	Free Time	Travel Time
16:20 - 16:40			Break							
16:40 - 17:00	[MS] Zambon		Organization, General Information, YAMC2025 et al.		[MS] Nella Rotundo		Free Time		Travel Time	
17:00 - 17:20	[MS] Zambon		Organization, General Information, YAMC2025 et al.		[MS] Nella Rotundo		Free Time		Travel Time	
17:20 - 17:40	[MS] Zambon		Organization, General Information, YAMC2025 et al.		[MS] Nella Rotundo		Free Time		Travel Time	
17:40 - 18:00	[MS] Zambon		Organization, General Information, YAMC2025 et al.		[MS] Nella Rotundo		Free Time		Travel Time	