INTRUSION 2023 Schedule

Monday 3 July ArCoD department		Monday 4 July ArCoD department		Wednesday 05 July Department of Mathematics
Opening 8:45 - 9:00	8:45	·	8:45	·
Sorin Pop 9:00 - 9:35 Non-standard models for flow in porous media	9:00	Florin Radu 9:00 - 9:35 Efficient solvers for Richards' equation	9:00	Matthew Farthing 9:00 - 9:35 Model Reduction and Operator Learning for Environmental Flows
Wietse M. Boon 9:35 - 9:55 Multipoint mixed finite element methods for rotation- based formulations of Stokes flow and Biot poroelasticity	9:35	Matteo Icardi 9:35 - 9:55 HIgh order Projection-based HOMogenisation for advection diffusion reaction problems	9:35	Enrico Facca 9:35 - 9:55 Network inpainting via Optimal Transport
Alessio Fumagalli 9:55 - 10:30 A machine learning approach that ensure local mass conservation for single-phase flow in fractured porous media	9:55	Ilario Mazzieri 9:55 - 10:30 A space-time discontinuous Galerkin method for wave propagation problems in coupled poroelastic-elastic domains	9:55	Salvatore Cuomo 9:55 - 10:30 Physics-Informed Neural Networks for solving Groundwater Flow Equation
Elena Bachini 10:30 - 10:50 Geometrically intrinsic modeling of 2D diffusive wave overland flow for coupled surface-subsurface hydrological applications	10:30	Massimo Frittelli 10:30 - 10:50 A bulk-surface reaction-diffusion model for electrodeposition and novel numerical solvers	10:30	Nicodemo Di Pasquale 10:30 - 10:50 Mathematical modelling and open-source simulation of reverse-osmosis desalination
Coffee break 10:50 - 11:30	10:50	Coffee break 10:50 - 11:30	10:50	Coffee break 10:50 - 11:30
Amilcare M. Porporato 11:30 - 12:05 Moisture fluctuations in soil biogeochemical cycles: from the emblematic case of iron-redox cycles to current challenges	11:30	Giorgio Cassiani 11:30 - 12:05 The "true" meaning of Hydrogeophysics: integration of geophysical data with hydrological modeling	11:30	Costantino Masciopinto 11:30 - 12:05 Conceptual Models of Flow and Transport in Fracture- Dominated Aquifers
Giovanni Girardi 12:05 - 12:25 Modeling Water Stress in Root Water Uptake	12:05	Patricia Diaz de Alba 12:05 - 12:25 Forward electromagnetic induction modelling in a multilayered half-space: An open-source software tool	12:05	Cristina Di Salvo 12:05 - 12:25 The use of advanced solvers and parameters optimization software to overcome numerical errors in groundwater flow models in folded and faulted areas
Sara Bonetti 12:25 - 13:00 Effects of small-scale soil structure features on hydrological, biogeochemical, and geomorphological processes	12:25	Vittorio Di Federico 12:25 - 13:00 Non-Newtonian flow in fractured media: from deterministic to random approaches	12:25	Monica Riva 12:25 - 13:00 Nanoscale investigation and Stochastic assessment of calcite dissolution
	13:00	Lunch brook	13:00	Lunch break 13:00 - 14:15
13:00 - 14:35	14:15	13:00 - 14:35	14:15	Vincenzo Casulli 14:15 - 14:50 A coupled surface-subsurface model for hydrostatic flows under saturated and variably saturated conditions
Massimiliano Ferronato 14:35 - 15:10 Numerical models for frictional contact mechanics and flow in fractured porous media	14:35	Gerardo Severino 14:35 - 15:10 Flow and transport in a doublet-type flow configuration	14:35	Shawkat B. M. Hassan 14:50 - 15:00 Analysing the role of soil and vegetation spatial variability in modelling hydrological processes for irrigation optimisation at large scale Guglielmo F. A. Brunetti 15:00 - 15:10 Investigating Hyghly Heterogeneous Aquifers: A Unique Experimental Approach
Fabio Durastante 15:10 - 15:30 Why diffusion-based preconditioning of Richards equation works: spectral analysis and computational	15:20	Alexander Litvinenko 15:10 - 15:30 Uncertainty quantification in coastal aquifers using the multilevel Monte Carlo method	15:20	Ahmad R. Faqiri 15:10 - 15:20 Evaluation of concrete quality through estimation of absorbed water and water penetration depth using electromagnetic wave radar Fabiano Castrogiovanni 15:20 - 15:30
Fabio Difonzo 15:30 - 15:50		Poherto Guglielmi 15:30 - 15:50		A simplified numerical assessment of excessive DM growth in Self-Forming Dynamic Membrane Bioreactors (SFD MBR) for Wastewater Treatment Pompilio Vergine 15:30 - 15:40 Wetlands deserve specific modelling tools for the
Nonnegative moment coordinates on finite element geometries	15:40	Optimal irrigation strategies in a Richards' framework	15:40	effective management of their ecosystem services
Coffee break 15:50 - 16:20	16:00	Sabrina F. Pellegrino 15:50 - 16:10 A Spectral Method for a Nonlocal Richards' Equation	16:00	15:40 - 16:00
Marco Fois 16:20 - 16:30 A Semi-Conservative Depth Integrated Material Point Method For Run-Out of Flow-like Landslides and Mudflows	16:20	Alessandro Coclite 16:10 - 16:30 A finite difference scheme for nonlinear peridynamics	16:20	
Alberth Silgado 16:30 - 16:40 A virtual element scheme for the Brinkman model of porous media flow				
Maria C. Bovier 16:40 - 16:50 Stochastic Modeling of Anomalous Water Transport Giovanni V. Spinelli 16:50 - 17:00 ModelFreeFFC: A Versatile Tool for Fitting NMRRelaxation Dispersion Curves in Porous Media and Molecular Dynamics Studies	16:40		16:40	
Giovanni Pagano 17:00 - 17:10 Problem oriented discretizations for a vegetation model Discussion 17:10 - 17:30	17:00	Social tour in Bari vecchia 17:00 – 19:00 The tour will start from Bari Cathedral	17:00	
	17:30		17:30	
	20:00	Social dinner at "Al Sorso Preferito" 20:00	20:00	