



A.D. 1308
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DIPARTIMENTO
DI INGEGNERIA
CIVILE E AMBIENTALE
DIPARTIMENTO DI ECCELLENZA

DOCTORAL PROGRAM IN CIVIL AND ENVIRONMENTAL ENGINEERING

6th Final Year Meeting CEEP^hD DAY

Location Campus of Engineering, University of Perugia
Latitude: 43.118177 Longitude: 12.357942
(Teams platform for international members of the Faculty Board)

Timetable October 23 and 24th 2024 – 9:30 a.m. (CET)

Program

DAY 1: October 23th 2024

09:15 Welcome address

SESSION 1.A.1 – Aula Magna

09:30 First Year Presentations (XXXIX Cycle, 15+5 min) – Chairs M Giofrè and A D'Alessandro

09:30 - 09:50 Michele Mattiacci

Advanced strategies for strain-based health monitoring of masonry structures

9:50-10:10 Mehran Shahpari

Green Composite Materials for Structural Strengthening (REPAIRS)

10:10-10:30 Pasquale Guarino

AMUSED - Advanced Methods for aUTomated Survey and gEneration of Digital twins of civil engineering structures

10:30-10:50 Israel Sousa

3D_IMPULSE-3D innovative materials for printed multifunctional sustainable engineering structures

10:50-11:10 Carlos Eugenio Moureira De Sousa

Use of digital twins for predictive maintenance and detection of anomalies in existing and monumental buildings

11:10-11:30 Break





SESSION 1.B.1 - Auletta

9:30 First Year Presentations (XXXIX Cycle, 15+5 min) – Chairs C Tamagnini and C Capponi

09:30 - 09:50 Gregorio Gazzetta

Water availability evaluation by reanalysis and ground measurements.

9:50-10:10 Martina Natali (online)

Integrated use of radar backscatter observations, machine learning and land surface modelling to improve soil and vegetation dynamics in Mediterranean agroforestry systems

10:10-10:30 Francesco Leopardi

Hydrological modelling and trend analysis of river discharge and runoff through the use of satellite products.

10:30-10:50 Sara Prapotnich

Digital twin and artificial intelligence for the management of a District Metered Area of Padua water distribution network.

10:50-11:10 Debora Falocci

Modeling Transients Response in Complex Pressurized Networks

11:10-11:30 Break

SESSION 1.A.2 – Aula Magna

11:30 First Year Presentations (XXXIX Cycle, 15+5 min) – Chairs F Cluni and I Venanzi

11:30-11:50 Francesco Mariani

Handling uncertainties in Safety Assessment of Existing Bridges - SAFER

11:50-12:10 Arash Rahimi

Structural Health Monitoring and intelligent damage diagnosis of railway bridges using machine learning approaches

12:10-12:30 Waqas Qayyum

Dynamic analysis of complex historic constructions and definition of effective strategies for their structural monitoring – (DESMOS)

12:30-12:50 Livia Fabbretti

Study and implementation of innovative methods for seismic monitoring and damage detection in strategic buildings

12:50-13:10 Asad Ullah

Advanced analysis methods for Arch Gravity Dams (AGD) subjected to coupled seismic, hydraulic, static stresses.



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[SESSION 1.B.2 - Auletta](#)

11:30 First Year Presentations (XXXIX Cycle, 15+5 min) – Chairs G Giorgi and B Terenzi

11:30-11:50 Eleonora Dottorini

The Monumental Cemetery of Perugia: study on the integrated digital methodologies and technologies for the knowledge and the communication of cultural heritage.

11:50-12:10 Claudia Cerbai

Study for the definition of an Information System with BIM procedures for Real Estate and OO.PP.

12:10-12:30 Jessica Di Mario (online)

Utilization of by-products from agri-food chains for the production of bioactive molecules, biomaterials, and biofertilizers in a third-generation biorefinery

12:30-12:50 Yariv Portnoy (online)

Advanced manufacturing of extreme-temperature resisting materials

[SESSION 2.A.1 - Aula Magna](#)

14:30 Second Year Presentations (XXXVIII Cycle, 20+5 min) – Chairs F Ubertini and N Cavalagli

14:30-14:55 Matteo Castellani

Artificial Intelligence methods for Drone inspections and structural health monitoring of bridges – AIDBridge

14:55-15:20 Elisa Tomassini

Physics-enhanced machine learning methods for Structural Health Monitoring of bridge networks

15:20-15:45 Roberta Scungio

Strengthening of masonry arches and vaults using natural composite materials based on hemp ropes and nets (National PhD Program on Risks)

15:45-16:10 Break

16:10-16:35 Erica Cernuto

Landslide interacting with viaducts: a combined approach based on InSAR data and geomechanics models.

16:35-17:00 Sara Galeazzi (online)

Understanding the role of vegetation in slope stability through hydrological and mechanical processes.





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SESSION 2.B.1 – Auletta

14:30 Second Year Presentations (XXXVIII Cycle, 20+5 min) – Chairs M Breccolotti and M Filippucci

14:30-14:55 Simona Ceccaroni

The representation of territorial data for urban and landscape regeneration.

14:55-15:20 Chiara Mommi

Visions of the Landscape: AI as a tool for Reading, Understanding, and Interpretation

15:20-15:45 Andrea Migliosi

The Chiascio dam and its reservoir: analysis, models and scenarios for the development of internal areas

15:45-16:10 Break

16:10-16:35 Pooria Mesbahi

Probabilistic methods for Structural Health Monitoring of Bridge Networks

16:35-17:00 Prajwal Giri

New IoT (Internet of Things) Technologies and data fusion for the Structural Health Monitoring of Reinforced Concrete Precast Structures

DAY 2: October 24th 2024

9:15 Welcome address

9:30-10:20 Plenary Lecture



Prof. Dr. Mircea Grigoriu: “Reliability of Nanocomposite Materials”

10:20-10:30 Break

SESSION 3.A.1 – Aula Magna

10:30 Third year presentations (XXXVII Cycle, 30+10 min) -Chairs G Gigliotti and D Salciarini

10:30-11:10 Mouadh Rafai

Energy geostructures for green buildings

11:10-11:50 Costanza Borghesi

Advancing High-Entropy to Thermochromic Oxides: Materials Engineering for Enhanced Passive Radiative Cooling Performance

11:50-12:30 Maria Eleonora Pipistrelli

Probabilistic modeling and simulation of random materials

12:30-13:10 Marco Parriani

Characterization and reactivity of ionic and excited species with atoms, molecules and radicals of environmental interest





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SESSION 3.B.1 - Auletta

10:30 Third year presentations (XXXVII Cycle, 30+10 min) – Chairs S Meniconi, A Flammini and C Saltalippi

10:30-11:10 Francesco Casinini

Development of innovative data acquisition and transmission systems for diagnosis and control of water networks

11:10-11:50 Da Conceicao Martins Nuno Miguel

CFD approach to fault detection in pressurized pipe systems by means of the transient state

11:50-12:30 Arash Rahi

Effect of hydroclimatic parameters on runoff generation under climate warming scenario

12:30-13:10 Luciano Veritti

Dynamic behaviour of control valves in water supply systems

SESSION 3.A.2 – Aula Magna

14:30 Third year presentations (XXXVII Cycle, 30+10 min) – Chairs V Menchetelli and G Mochi

14:30-15:10 Francesco Cotana

The Representation of Historical Information through the Tools of Spatial Humanities. Application to Studies on Giuseppe Poggi (1811-1901) within the Context of Italian and Anglo-Saxon Culture of Landscape

15:10-15:50 Desiree Muscas

Integrating urban green's ecosystem services data into sustainable and resilient city planning with an urban metabolism approach

15:50-16:30 Filippo Cornacchini

Digital ecosystems for public works and representative experiments in virtual environments

16:30 International Faculty Board Meeting (Aula Magna)

18:00 Closure

