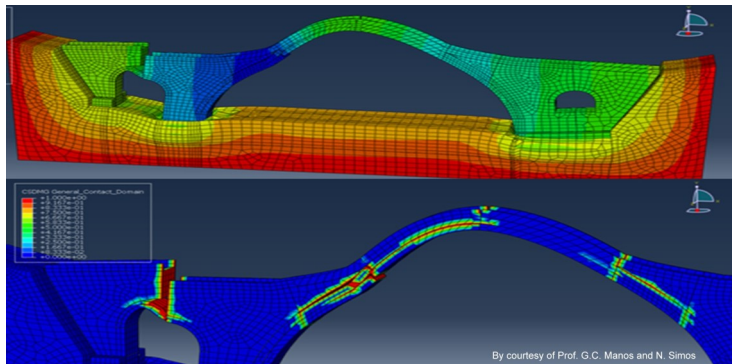




12-14 June, Athens, Greece



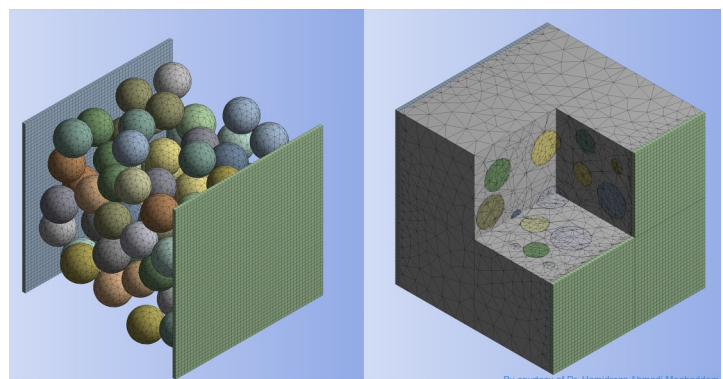
COMPDYN 2023

9th International Conference on
Computational Methods in
Structural Dynamics and
Earthquake Engineering

PROGRAMME

UNCECOMP 2023

5th International Conference
on Uncertainty Quantification
in Computational Science and
Engineering





COMPDYN 2023

**9th International Conference on
Computational Methods in Structural
Dynamics and Earthquake Engineering**

*An ECCOMAS Thematic Conference
An IACM Special Interest Conference*

UNCECOMP 2023

**5th International Conference on
Uncertainty Quantification in
Computational Science and Engineering**

An ECCOMAS Thematic Conference

Athens, Greece, 12-14 June 2023

Programme



**Institute of Structural Analysis and Antiseismic Research
School of Civil Engineering
National Technical University of Athens**

PROCEEDINGS

COMPDYN 2023



<https://2023.compdyn.org/proceedings>

UNCECOMP 2023



<https://2023.uncecomp.org/proceedings>

PROGRAMME OVERVIEW

SUNDAY, JUNE 11

18:00-20:00	REGISTRATION
20:30-21:30	WELCOME RECEPTION: <i>Roof Garden, Royal Olympic Hotel</i>

DAY 1 - MONDAY, JUNE 12 (part I)

Time	Olympia	Attica	Templars	Kallirhoe 1	Kallirhoe 2	Abbey	Ground
8:00-8:45	REGISTRATION						
8:45-9:00	OPENING						
9:00-11:00	PLENARY LECTURES - Olympia J. Padgett, G. Karniadakis, J. Bonet						
11:00-11:30	Coffee Break						
	TECHNICAL SESSIONS						
11:30-13:30	COMPdyn MS 19 - I RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS	UNCECOMP MS 6 - I SURROGATE MODELLING AND DATA-DRIVEN APPROACHES FOR UNCERTAINTY QUANTIFICATION	UNCECOMP TS 17 - I UNCERTAINTY QUANTIFICATION	COMPdyn TS 14 - I NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS	COMPdyn MS 12 - I ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN DESIGN AND ASSESSMENT OF STRUCTURES	COMPdyn MS 4 ISOGOMETRIC AND OTHER ADVANCED DISCRETIZATION METHODS FOR STRUCTURAL DYNAMICS AND TRANSIENT PROBLEMS	COMPdyn MS 20 - I ADVANCED NUMERICAL METHODS IN DYNAMICS, COMPUTATIONAL INTERFACE MECHANICS AND COUPLED PROBLEMS
13:30-14:30	Lunch Break						
	TECHNICAL SESSIONS						
14:30-16:30	COMPdyn MS 19 - II RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS	UNCECOMP MS 6 - II SURROGATE MODELLING AND DATA-DRIVEN APPROACHES FOR UNCERTAINTY QUANTIFICATION	UNCECOMP TS 17 - II UNCERTAINTY QUANTIFICATION	COMPdyn TS 14 - II NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS	COMPdyn MS 12 - II ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN DESIGN AND ASSESSMENT OF STRUCTURES	COMPdyn MS 25 - I TOWARDS SEISMIC RESILIENCE: STRATEGIES AND TECHNOLOGICAL INNOVATION FOR SEISMIC RISK REDUCTION OF EXISTING STRUCTURES	COMPdyn MS 20 - II ADVANCED NUMERICAL METHODS IN DYNAMICS, COMPUTATIONAL INTERFACE MECHANICS AND COUPLED PROBLEMS
16:30-17:00	Coffee Break						
	TECHNICAL SESSIONS						
17:00-19:00	COMPdyn MS 19 - III RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS	UNCECOMP MS 6 - III SURROGATE MODELLING AND DATA-DRIVEN APPROACHES FOR UNCERTAINTY QUANTIFICATION	UNCECOMP TS 17 - III UNCERTAINTY QUANTIFICATION	COMPdyn TS 14 - III NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS	COMPdyn MS 12 - III ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN DESIGN AND ASSESSMENT OF STRUCTURES	COMPdyn MS 25 - II TOWARDS SEISMIC RESILIENCE: STRATEGIES AND TECHNOLOGICAL INNOVATION FOR SEISMIC RISK REDUCTION OF EXISTING STRUCTURES	COMPdyn TS 2 - I ALGORITHMS FOR STRUCTURAL HEALTH MONITORING

SUNDAY, JUNE 11

18:00-20:00	REGISTRATION
20:30-21:30	WELCOME RECEPTION: <i>Roof Garden, Royal Olympic Hotel</i>

DAY 1 - MONDAY, JUNE 12 (part II)

Time	Room 1A	Room 1B	Room 2A	Room 2B	Room 3A	Room 3B	Room 4A	Room 4B
8:00-8:45	REGISTRATION							
8:45-9:00	OPENING							
9:00-11:00	PLENARY LECTURES - Olympia J. Padgett, G. Karniadakis, J. Bonet							
11:00-11:30	Coffee Break							
	TECHNICAL SESSIONS							
11:30-13:30	COMPDPN MS 34 INSIGHTS AND DEVELOPMENTS IN DYNAMIC SOIL-FOUNDATION-STRUCTURE INTERACTION	COMPDPN MS 8 - I RECENT ADVANCES AND CHALLENGES IN GEOTECHNICAL EARTHQUAKE ENGINEERING	COMPDPN MS 28 - I MONITORING, DAMAGE MODELLING AND SOIL-STRUCTURE-INTERACTION IN CULTURAL HERITAGE CONSTRUCTIONS	UNCECOMP MS 18 ADVANCED MONTE-CARLO METHODS FOR UNCERTAINTY QUANTIFICATION AND OPTIMIZATION OF CIVIL INFRASTRUCTURE	UNCECOMP MS 21 INVERSE ANALYSIS FOR LARGE-SCALE, COMPUTATIONALLY DEMANDING PROBLEMS IN HIGH-(STOCHASTIC) DIMENSIONS	COMPDPN MS 37 - I DESIGN OF STRUCTURES UNDER EXTREME LOADS	COMPDPN MS 45 - I STRUCTURAL DYNAMICS, SEISMIC SAFETY AND RISK ASSESSMENT OF SPECIAL STRUCTURES	COMPDPN MS 30 THE ASSESSMENT OF RESILIENCE WITH APPROACHES BASED ON NUMERICAL SIMULATIONS
13:30-14:30	Lunch Break							
	TECHNICAL SESSIONS							
14:30-16:30	COMPDPN MS 32 - I MULTI-HAZARD RISK MANAGEMENT OF THE BUILT ENVIRONMENT: RECENT ADVANCES AND OPEN CHALLENGES	COMPDPN MS 8 - II RECENT ADVANCES AND CHALLENGES IN GEOTECHNICAL EARTHQUAKE ENGINEERING	COMPDPN MS 28 - II MONITORING, DAMAGE MODELLING AND SOIL-STRUCTURE-INTERACTION IN CULTURAL HERITAGE CONSTRUCTIONS COMPDPN TS 24 - I SOIL-STRUCTURE INTERACTION	UNCECOMP MS 14 - I GREY-BOX MODELLING FOR UNCERTAINTY QUANTIFICATION	UNCECOMP MS 11 - I UNCERTAINTY QUANTIFICATION UNDER LIMITED DATA	COMPDPN MS 37 - II DESIGN OF STRUCTURES UNDER EXTREME LOADS COMPDPN TS 15 - I OPTIMUM DESIGN AND CONTROL	COMPDPN MS 45 - II STRUCTURAL DYNAMICS, SEISMIC SAFETY AND RISK ASSESSMENT OF SPECIAL STRUCTURES COMPDPN MS 9 SEISMIC SAFETY ASSESSMENT OF STRUCTURES	UNCECOMP MS 16 STOCHASTIC FINITE ELEMENT METHODS: IMPROVEMENTS AND NEW APPROACHES
16:30-17:00	Coffee Break							
	TECHNICAL SESSIONS							
17:00-19:00	COMPDPN MS 32 - II MULTI-HAZARD RISK MANAGEMENT OF THE BUILT ENVIRONMENT: RECENT ADVANCES AND OPEN CHALLENGES	COMPDPN TS 9 - I GEOTECHNICAL ENGINEERING	COMPDPN TS 24 - II SOIL-STRUCTURE INTERACTION	UNCECOMP MS 14 - II GREY-BOX MODELLING FOR UNCERTAINTY QUANTIFICATION UNCECOMP TS 13 SIMULATION OF RANDOM FIELDS	UNCECOMP MS 11 - II UNCERTAINTY QUANTIFICATION UNDER LIMITED DATA UNCECOMP MS 4 RELIABILITY ANALYSIS AND RARE EVENT SIMULATION	COMPDPN TS 15 - II OPTIMUM DESIGN AND CONTROL	COMPDPN MS 31 BEYOND DISCONTINUUM-BASED ANALYSIS: NOVEL APPROACHES FOR DISCRETE ELEMENT STRUCTURAL MODELLING OF COMPOSITE MATERIALS	UNCECOMP MS 10 UNCERTAINTY QUANTIFICATION FOR SCIENTIFIC MACHINE LEARNING

DAY 2 - TUESDAY, JUNE 13 (part I)

Time	Olympia	Attica	Templars	Kallirhoe 1	Kallirhoe 2	Abbey	Ground
TECHNICAL SESSIONS							
8:30-10:30	COMPdyn MS 19 - IV RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS	UNCECOMP MS 6 - IV SURROGATE MODELLING AND DATA-DRIVEN APPROACHES FOR UNCERTAINTY QUANTIFICATION	UNCECOMP TS 17 - IV UNCERTAINTY QUANTIFICATION	COMPdyn TS 14 - IV NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS	COMPdyn MS 1 - I NOVEL TECHNIQUES AND APPROACHES FOR SEISMIC PROTECTION OF STRUCTURES WITH ISOLATION AND/OR ENERGY DISSIPATION DEVICES	COMPdyn MS 38 - I TIMBER-BASED SYSTEMS FOR NEW AND EXISTING STRUCTURES IN SEISMIC AREA: RECENT DEVELOPMENTS AND FUTURE TRENDS	COMPdyn TS 2 - II ALGORITHMS FOR STRUCTURAL HEALTH MONITORING
10:30-11:00	Coffee Break						
11:00-13:00	COMPdyn SEMI-PLENARY LECTURES I E. Chatzi P. Betsch M. Brun	COMPdyn SEMI-PLENARY LECTURES II H. Gravenkamp A. Reali E. Tubaldi	UNCECOMP SEMI-PLENARY LECTURES I J. Guillemot L. Noels P. Perdikaris	UNCECOMP SEMI-PLENARY LECTURES II B. Sudret M. Shields D. Straub	SPECIAL TECHNOLOGICAL SESSION		
13:00-14:00	Lunch Break						
TECHNICAL SESSIONS							
14:00-16:00	COMPdyn MS 19 - V RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS	UNCECOMP MS 6 - V SURROGATE MODELLING AND DATA-DRIVEN APPROACHES FOR UNCERTAINTY QUANTIFICATION	UNCECOMP TS 17 - V UNCERTAINTY QUANTIFICATION	COMPdyn MS 42 - I COMPUTATIONAL METHODS FOR INVERSE PROBLEMS IN STRUCTURES AND GEOPHYSICS	COMPdyn MS 1 - II NOVEL TECHNIQUES AND APPROACHES FOR SEISMIC PROTECTION OF STRUCTURES WITH ISOLATION AND/OR ENERGY DISSIPATION DEVICES	COMPdyn MS 38 - II TIMBER-BASED SYSTEMS FOR NEW AND EXISTING STRUCTURES IN SEISMIC AREA: RECENT DEVELOPMENTS AND FUTURE TRENDS	UNCECOMP MS 3 - I BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE AND ENGINEERING
16:00-16:30	Coffee Break						
TECHNICAL SESSIONS							
16:30-18:30	COMPdyn MS 19 - VI RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS	COMPdyn MS 6 - I EXPERIMENTAL MEASUREMENTS AND NUMERICAL SIMULATION IN THE FIELD OF EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS – NEW STRUCTURES AND STRUCTURAL RETROFITTING	COMPdyn TS 31 - I SEISMIC RISK AND DAMAGE ASSESSMENT	COMPdyn MS 42 - II COMPUTATIONAL METHODS FOR INVERSE PROBLEMS IN STRUCTURES AND GEOPHYSICS	COMPdyn MS 1 - III NOVEL TECHNIQUES AND APPROACHES FOR SEISMIC PROTECTION OF STRUCTURES WITH ISOLATION AND/OR ENERGY DISSIPATION DEVICES	COMPdyn MS 39 SHM FOR TRANSPORT INFRASTRUCTURE RESILIENCE	UNCECOMP MS 3 - II BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE AND ENGINEERING
20:30-23:30	BANQUET, Divani Caravel Hotel						

DAY 2 - TUESDAY, JUNE 13 (part II)

Time	Room 1A	Room 1B	Room 2A	Room 2B	Room 3A	Room 3B	Room 4A	Room 4B
TECHNICAL SESSIONS								
8:30-10:30	COMPdyn MS 3 - I PROTECTION OF MUSEUM'S COLLECTIONS COMPUTATIONAL APPROACHES AND INNOVATIVE INTERVENTIONS	COMPdyn TS 9 - II GEOTECHNICAL ENGINEERING	COMPdyn TS 13 - I NONLINEAR DYNAMICS	UNCECOMP MS 20 VVUQ FOR COMPLEX MULTIPHYSICS PROBLEMS	COMPdyn MS 22 - I HYSTERESIS PHENOMENA IN STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING: EXPERIMENTS, MODELING, AND DESIGN	COMPdyn MS 35 RECENT ADVANCES IN GROUND- AND STRUCTURE-BORNE NOISE AND VIBRATION ASSESSMENT & PREDICTION	UNCECOMP MS 15 MULTISCALE AND ENHANCED METHODS FOR RANDOMLY STRUCTURED COMPOSITE MATERIALS	COMPdyn TS 28 STOCHASTIC DYNAMICS
10:30-11:00	Coffee Break							
11:00-13:00								
13:00-14:00	Lunch Break							
TECHNICAL SESSIONS								
14:00-16:00	COMPdyn MS 3 - II PROTECTION OF MUSEUM'S COLLECTIONS COMPUTATIONAL APPROACHES AND INNOVATIVE INTERVENTIONS	COMPdyn MS 11 THE ROLE OF THE STRUCTURAL MONITORING TO PREDICT THE PRIOR DAMAGE OR THE FACTUAL DEGRADATION PATTERN IN ORDER TO UPDATE THE SEISMIC VULNERABILITY OF EXISTING BUILDINGS	COMPdyn TS 13 - II NONLINEAR DYNAMICS COMPdyn TS 3 - I BRIDGE DYNAMICS		COMPdyn MS 22 - II HYSTERESIS PHENOMENA IN STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING: EXPERIMENTS, MODELING, AND DESIGN COMPdyn TS 11 INVERSE PROBLEMS IN STRUCTURAL DYNAMICS	COMPdyn MS 10 RECENT ADVANCES IN SEISMIC ISOLATION OF STRUCTURES WITH NOVEL VIBRATION CONTROL APPROACHES	UNCECOMP TS 15 STOCHASTIC FRACTURE AND DAMAGE UNCECOMP TS 6 METHODS FOR IMPROVING THE EFFICIENCY OF MONTE CARLO SIMULATION	COMPdyn TS 25 SOLUTION STRATEGIES FOR DYNAMIC PROBLEMS
16:00-16:30	Coffee Break							
TECHNICAL SESSIONS								
16:30-18:30	COMPdyn TS 19 - I REPAIR AND RETROFIT OF STRUCTURES	COMPdyn MS 13 MONITORING AND LIFE CYCLE PERFORMANCE OF RAILWAY BRIDGES	COMPdyn TS 3 - II BRIDGE DYNAMICS	COMPdyn TS 32 SEISMIC RELIABILITY ANALYSIS	COMPdyn MS 2 - I ADVANCES IN THE DYNAMIC RESPONSE ANALYSIS, MONITORING, AND MITIGATION OF WIND TURBINES	COMPdyn MS 36 EXPERIMENTAL TESTING ON SEISMIC ISOLATION AND ENERGY DISSIPATION DEVICES	UNCECOMP MS 1 UNCERTAINTY QUANTIFICATION IN VIBRATION BASED MONITORING AND STRUCTURAL DYNAMICS SIMULATIONS	
20:30-23:30	BANQUET, Divani Caravel Hotel							

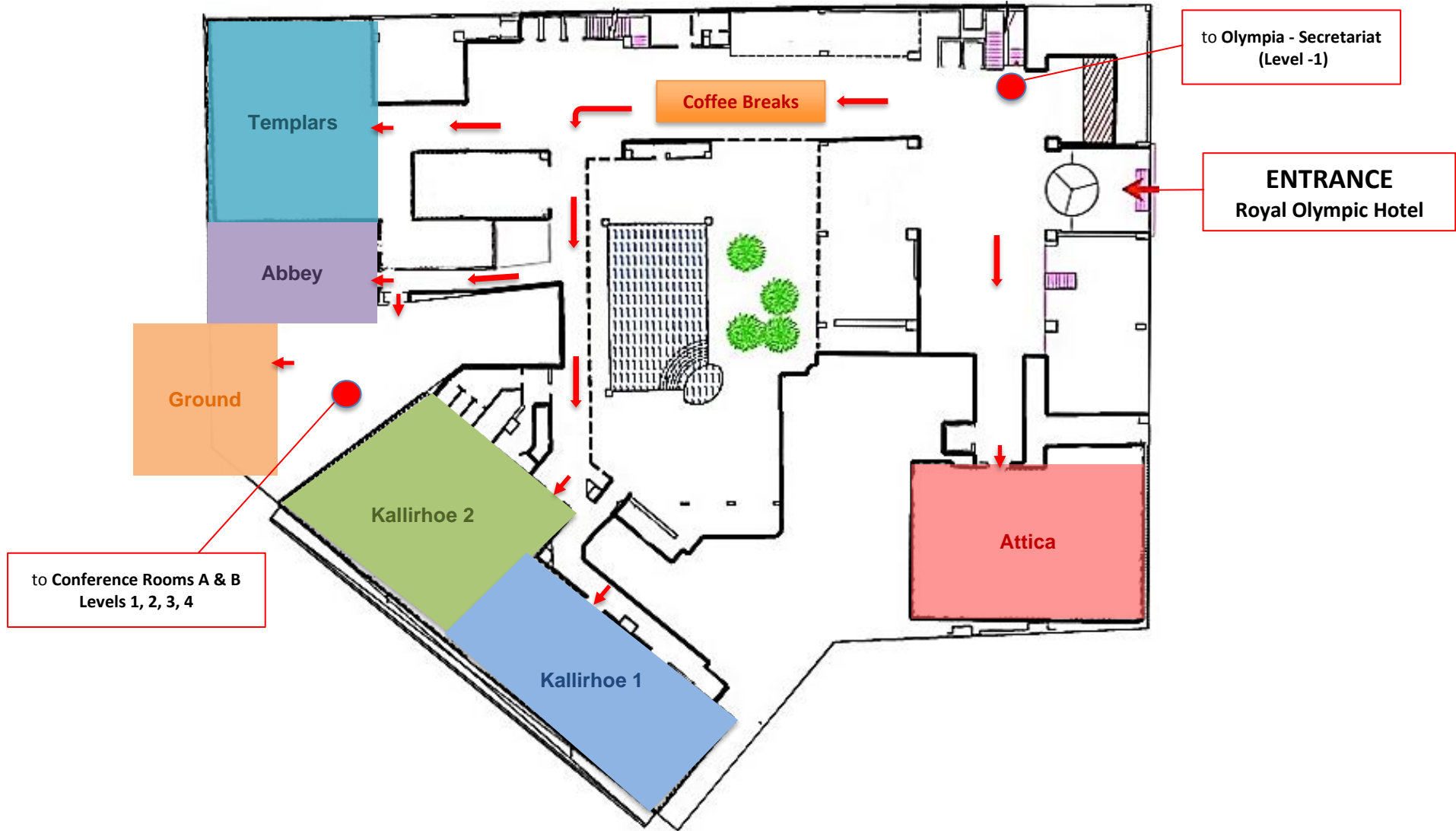
DAY 3 - WEDNESDAY, JUNE 14 (part I)

Time	Olympia	Attica	Templars	Kallirhoe 1	Kallirhoe 2	Abbey	Ground
9:00-11:00	TECHNICAL SESSIONS						
	UNCECOMP MS 7 - I UNCERTAINTY QUANTIFICATION, DATA ASSIMILATION, MACHINE LEARNING, AND THEIR INTEGRATIONS FOR EFFECTIVE PREDICTIVE MODELS ?	COMPDPN MS 6 - II EXPERIMENTAL MEASUREMENTS AND NUMERICAL SIMULATION IN THE FIELD OF EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS – NEW STRUCTURES AND STRUCTURAL RETROFITTING	COMPDPN TS 31 - II SEISMIC RISK AND DAMAGE ASSESSMENT	COMPDPN MS 17 - I STEEL JOINTS BEHAVIOR UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS	COMPDPN MS 7 - I SUSTAINABLE STRENGTHENING INTERVENTIONS TO PREVENT FAILURE IN UNREINFORCED MASONRY STRUCTURES AND INFRASTRUCTURES	COMPDPN TS 5 - I DYNAMICS OF CONCRETE AND MASONRY STRUCTURES	COMPDPN MS 2 - II ADVANCES IN THE DYNAMIC RESPONSE ANALYSIS, MONITORING, AND MITIGATION OF WIND TURBINES
11:00-11:30	Coffee Break						
11:30-13:30	COMPDPN PLENARY LECTURES J. Baker M. Hori P. Lourenco	UNCECOMP PLENARY LECTURES H. Waisman S. Adhikari S-K. Au					
13:30-14:30	Lunch Break						
14:30-16:30	TECHNICAL SESSIONS						
	UNCECOMP MS 7 - II UNCERTAINTY QUANTIFICATION, DATA ASSIMILATION, MACHINE LEARNING, AND THEIR INTEGRATIONS FOR EFFECTIVE PREDICTIVE MODELS ?	COMPDPN MS 6 - III EXPERIMENTAL MEASUREMENTS AND NUMERICAL SIMULATION IN THE FIELD OF EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS – NEW STRUCTURES AND STRUCTURAL RETROFITTING	COMPDPN TS 31 - III SEISMIC RISK AND DAMAGE ASSESSMENT	COMPDPN MS 17 - II STEEL JOINTS BEHAVIOR UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS	COMPDPN MS 7 - II SUSTAINABLE STRENGTHENING INTERVENTIONS TO PREVENT FAILURE IN UNREINFORCED MASONRY STRUCTURES AND INFRASTRUCTURES	COMPDPN TS 5 - II DYNAMICS OF CONCRETE AND MASONRY STRUCTURES	UNCECOMP TS 21 COMPUTATIONAL STOCHASTIC MECHANICS
16:30-17:00	Coffee Break						
17:00-19:00	TECHNICAL SESSIONS						
	UNCECOMP MS 7 - III UNCERTAINTY QUANTIFICATION, DATA ASSIMILATION, MACHINE LEARNING, AND THEIR INTEGRATIONS FOR EFFECTIVE PREDICTIVE MODELS ?	COMPDPN MS 6 - IV EXPERIMENTAL MEASUREMENTS AND NUMERICAL SIMULATION IN THE FIELD OF EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS – NEW STRUCTURES AND STRUCTURAL RETROFITTING	COMPDPN MS 49 SEISMIC RESPONSE OF MASONRY CROSS VAULTS: SHAKING TABLE TESTS AND NUMERICAL VALIDATIONS	COMPDPN MS 17 - III STEEL JOINTS BEHAVIOR UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS	COMPDPN MS 29 SOFT COMPUTING AND ARTIFICIAL INTELLIGENCE TECHNIQUES IN STRUCTURAL ENGINEERING	COMPDPN TS 5 - III DYNAMICS OF CONCRETE AND MASONRY STRUCTURES	COMPDPN MS 48 RECENT ADVANCES IN GROUND MOTION SELECTION AND SCALING TECHNIQUES

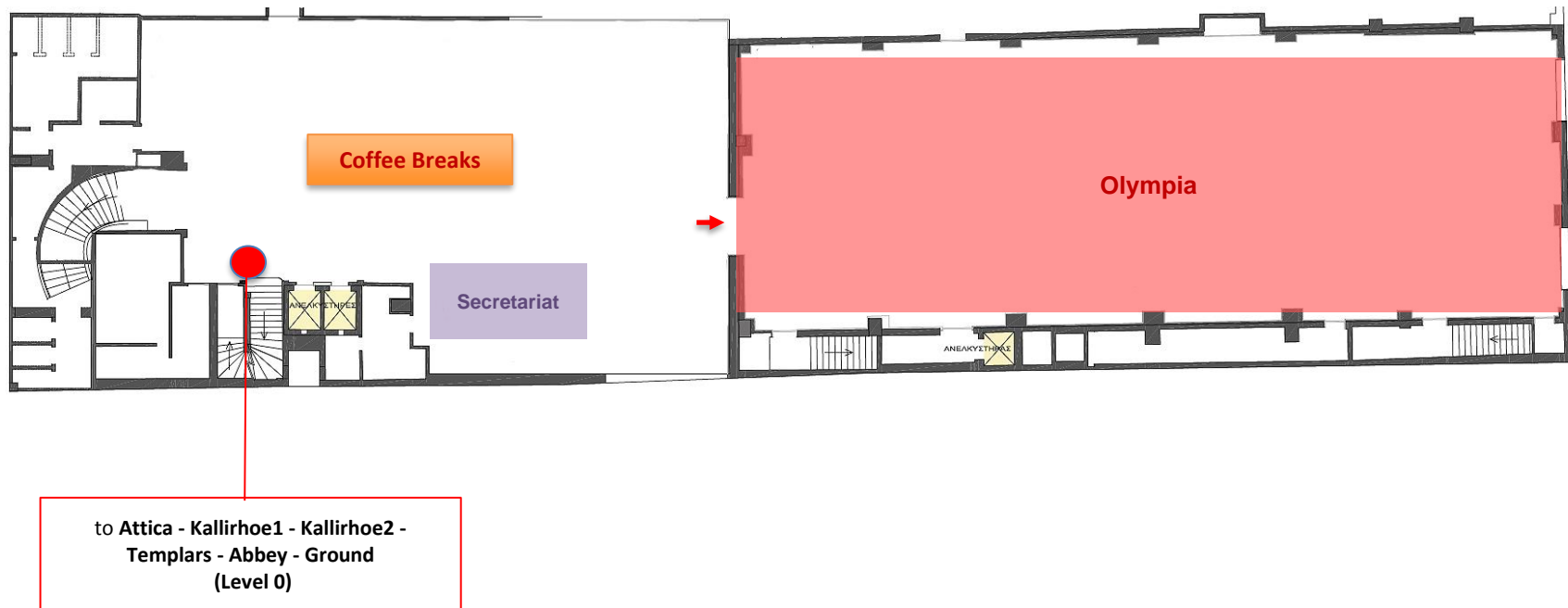
DAY 3 - WEDNESDAY, JUNE 14 (part II)

Time	Room 1A	Room 1B	Room 2A	Room 2B	Room 3A	Room 3B	Room 4A	Room 4B
	TECHNICAL SESSIONS							
9:00-11:00	COMPDPN TS 19 - II REPAIR AND RETROFIT OF STRUCTURES COMPDPN TS 10 IMPACT DYNAMICS	COMPDPN TS 17 - I PERFORMANCE-BASED EARTHQUAKE ENGINEERING	COMPDPN MS 24 - I ADVANCES IN SEISMIC ASSESSMENT AND INTEGRATED RETROFITTING FOR ENVELOPES OF RC	UNCECOMP MS 2 - I LEARNING FROM SMALL DATA: DATA-DRIVEN METHODS AND MACHINE LEARNING FOR UNCERTAINTY QUANTIFICATION IN ENGINEERING APPLICATIONS	COMPDPN MS 26 - I NON-DETERMINISTIC MODEL UPDATING AND HEALTH MONITORING WITH UNCERTAINTY TREATMENT	COMPDPN MS 40 APPLICATION OF DEEP LEARNING AND IOT IN NUMERICAL MODELLING AND HEALTH MONITORING OF STRUCTURES/INFRASTRUCTURES	COMPDPN MS 14 ADVANCES IN OPTIMIZATION AND CONTROL OF STRUCTURES UNDER DYNAMIC LOADS	COMPDPN TS 27 - I STEEL STRUCTURES
11:00-11:30	Coffee Break							
11:30-13:30								
13:30-14:30	Lunch Break							
	TECHNICAL SESSIONS							
14:30-16:30	COMPDPN MS 5 REPAIR AND RETROFIT OF STRUCTURES	COMPDPN TS 17 - II PERFORMANCE-BASED EARTHQUAKE ENGINEERING	COMPDPN MS 24 - II ADVANCES IN SEISMIC ASSESSMENT AND INTEGRATED RETROFITTING FOR ENVELOPES OF RC	UNCECOMP MS 2 - II LEARNING FROM SMALL DATA: DATA-DRIVEN METHODS AND MACHINE LEARNING FOR UNCERTAINTY QUANTIFICATION IN ENGINEERING APPLICATIONS UNCECOMP MS 13 - I SOFTWARE FOR UNCERTAINTY QUANTIFICATION	COMPDPN MS 26 - II NON-DETERMINISTIC MODEL UPDATING AND HEALTH MONITORING WITH UNCERTAINTY TREATMENT UNCECOMP TS 20 WAVE PROPAGATION IN MICRO-STRUCTURED RANDOM MEDIA	UNCECOMP TS 16 - I SYSTEM RELIABILITY ANALYSIS, DESIGN AND RISK ASSESSMENT	COMPDPN TS 26 SOUND AND VIBRATION	COMPDPN TS 27 - II STEEL STRUCTURES UNCECOMP MS 9 - I UQ AND DATA ASSIMILATION WITH SPARSE, LOW-RANK TENSOR, AND MACHINE LEARNING METHODS
16:30-17:00	Coffee Break							
	TECHNICAL SESSIONS							
17:00-19:00	COMPDPN MS 15 NOISE AND VIBRATION HARSHNESS OF GEAR TRANSMISSIONS: LIVE-I COMPDPN TS 4 CONSTITUTIVE MODELLING	COMPDPN UNCECOMP MS 50 DATA DRIVEN METHODS AND ENGINEERING SOFTWARE FOR NEXT GENERATION HPC APPLICATIONS	COMPDPN MS 33 INSIGHT IN SEISMIC PERFORMANCE OF RETROFITTED BUILDINGS: FEASIBILITY AND EFFECTIVENESS OF INTERVENTION IN RC BUILDINGS	UNCECOMP MS 13 - II SOFTWARE FOR UNCERTAINTY QUANTIFICATION	COMPDPN TS 20 SEISMIC ISOLATION	UNCECOMP TS 16 - II SYSTEM RELIABILITY ANALYSIS, DESIGN AND RISK ASSESSMENT	COMPDPN TS 30 WAVE PROPAGATION	UNCECOMP MS 9 - II UQ AND DATA ASSIMILATION WITH SPARSE, LOW-RANK TENSOR, AND MACHINE LEARNING METHODS

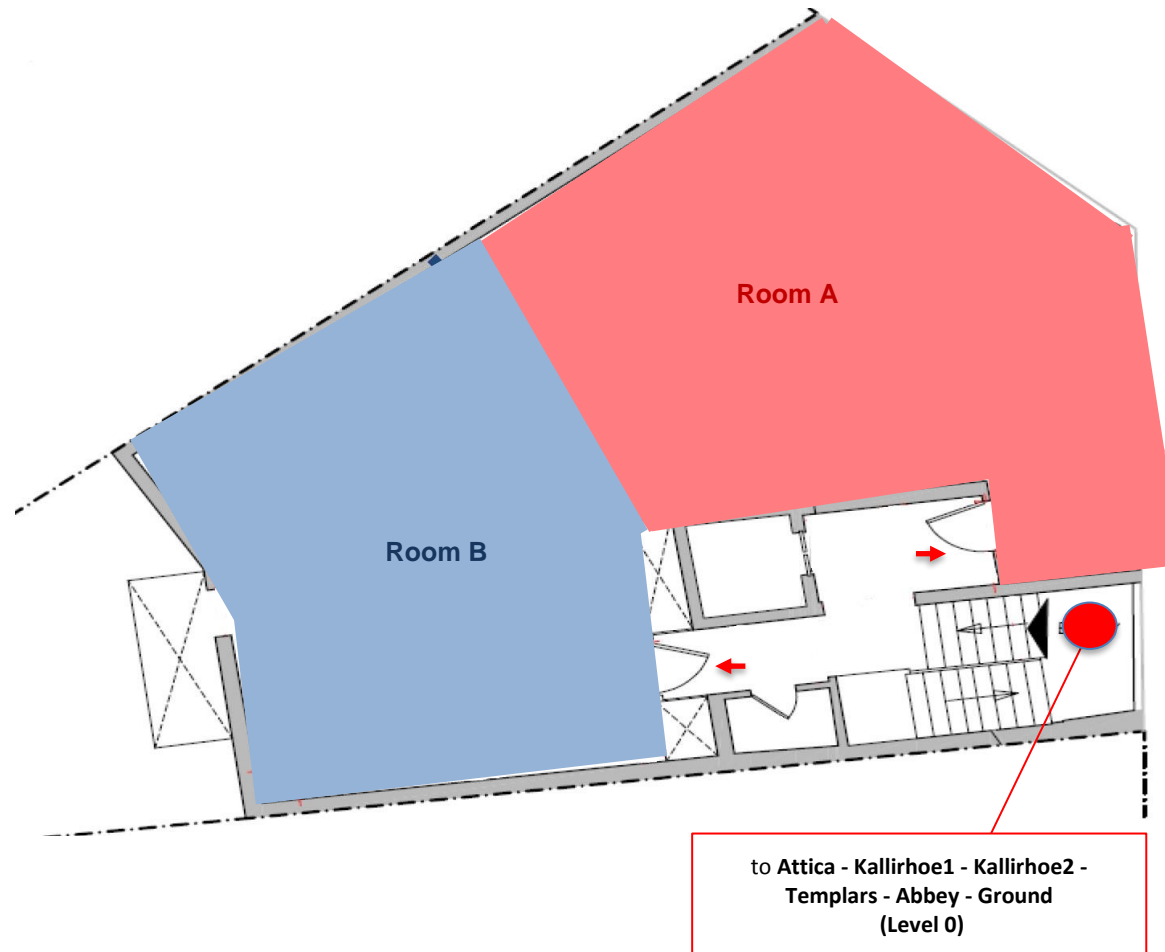
Conference Centre Rooms Level 0



Conference Centre Rooms Level -1



**Conference Centre Rooms
Levels 1, 2, 3, 4**



Greetings from the Chairpersons

Welcome to the jointly organized ECCOMAS Thematic Conferences: **9th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2023)**, and **5th International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2023)**.

COMPDYN 2023, is one of the 32 Thematic Conferences of the European Community on Computational Methods in Applied Sciences (ECCOMAS) to be held in 2023 and is also a Special Interest Conference of the International Association for Computational Mechanics (IACM). The purpose of this Conference series is to bring together the scientific communities of Computational Mechanics, Structural Dynamics, and Earthquake Engineering, to act as a forum for exchanging ideas on topics of mutual interest, and to enhance the links between research groups with complementary activities. We believe that the communities of Structural Dynamics and Earthquake Engineering will benefit from their exposure to advanced computational methods and software tools which can highly assist in tackling complex problems in dynamic and seismic analysis and design of structures, while also giving the opportunity to the Computational Mechanics community to be exposed to very important engineering application areas of great societal interest. The COMPDYN 2023 Conference is supported by the National Technical University of Athens (NTUA), the European Association for Structural Dynamics (EASD), the European Association for Earthquake Engineering (EAEE), the Greek Association for Computational Mechanics (GRACM), and the Hellenic Society of Earthquake Engineering (HSEE).

UNCECOMP 2023 is also a Thematic Conference of ECCOMAS, with the objective to reflect the recent research progress in the field of analysis and design of engineering systems under uncertainty, with an emphasis on multiscale simulations. The aim of the conference is to enhance the knowledge of researchers in stochastic methods and the associated computational tools for obtaining reliable predictions of the response of complex systems. The UNCECOMP conference series, held in conjunction with the COMPDYN conferences, gives the opportunity for the participants to interact with the Computational Dynamics community for their mutual benefit. The UNCECOMP 2023 Conference is supported by the National Technical University of Athens (NTUA) and the Greek Association for Computational Mechanics (GRACM).

We want to express our gratitude to the colleagues of international prestige that accepted the invitation to address a Plenary/Semi-Plenary Lecture and to the authors for presenting their contributions and for their efforts to respect the deadlines. Special thanks go to the 180 colleagues who have been involved in the organization of the 56 Minisymposia and to the Reviewers who, with their work, contributed to the scientific quality of the conference.

Dear Participant, welcome to **Athens**, the historical capital of Europe; the birthplace of democracy, arts, science, and philosophy of Western civilization and home of Plato, Socrates, Pericles, Euripides, Sophocles, and Aeschylus. Athens is one of the world's oldest cities with recorded history spanning around 3.400 years. Today, the contemporary urban scenery under the shadow of the Parthenon reflects the exciting history of the city. The perfect Mediterranean climate with the legendary Greek sunlight, the

unique combination of glorious history with modern, urban innovation, the coexistence of great culture with astonishing natural beauty, the high standard hotel accommodation, modern means of transportation, such as the cutting edge modern metro, the vibrant rhythm of life, the wide choice of opportunities for shopping, dining, and nightlife and of course the warmth of the Athenians makes Athens the perfect destination all year round.

We are confident that the scope of the conferences and the idyllic location of the venue will offer a perfect blend of scientific endeavor and recreation. Thus, we invite you to enjoy the conferences and experience an unforgettable stay in Athens.



Manolis Papadrakakis

Co-Chairperson of
COMPdyn 2023
&
UNCECOMP 2023



Michalis Fragiadakis

Co-Chairperson of
COMPdyn 2023



Vissarion Papadopoulos

Co-Chairperson of
UNCECOMP 2023



George Stefanou

Co-Chairperson of
UNCECOMP 2023

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COMPDYN 2023

Scientific Committee

C. Adam , Austria	P. Fajfar , Slovenia	J-M. Mencik , France
S. Adhikari , UK	M. Fardis , Greece	G. Milani , Italy
A. Ansal , Turkey	C. Farhat , USA	N. Moes , France
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A. Baratta , Italy	F. Filippou , USA	G. Muscolino , Italy
A. Barbato , Spain	A. Formisano , Italy	J. Narpstek , Czech Rep.
R. Barros , Portugal	M. Fragiadakis , Greece	R. Ohayon , France
A. Bayraktar , Turkey	D. Frangopol , USA	M. Ohsaki , Japan
P. Bazzurro , Italy	F. Fraternali , Italy	E. Oñate , Spain
J. Beck , USA	Ch. Gantes , Greece	F. Paolacci , Italy
M. Beer , UK	D. Givoli , Israel	C. Papadimitriou , Greece
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E. Caetano , Portugal	A. Idesman , USA	P. Ricci , Italy
G.M. Calvi , Italy	I. Iervolino , Italy	E. Sapountzakis , Greece
P. Castaldo , Italy	F. Jalayer , Italy	S. Sessa , Italy
S. Cattari , Italy	H. Jensen , Chile	A. Sextos , Greece
L. Cavaleri , Italy	B. Jeremic , USA	A. Shabana , USA
N. Chouw , New Zealand	A. Kappos , UAE	C. Soize , France
G.P. Cimellaro , Italy	S. Karamanos , Greece	A. Soroushian , Iran
M. Constantinou , USA	S. Krenk , Denmark	C. Spyarakos , Greece
J. Conte , USA	S. Kunnath , USA	G. Stavroulakis , Greece
Á. Cunha , Portugal	R. Landolfo , Italy	H. Sucuoglu , Turkey
G. De Roeck , Belgium	P-S. Lee , Korea	I. Takewaki , Japan
G. Degrande , Belgium	A. Liolios , Greece	K. Tamma , USA
G. Deodatis , USA	G. Lombaert , Belgium	Y. Tsompanakis , Greece
A. Der Kiureghian , USA	P. Lourenco , Portugal	A. Vakakis , USA
M. Di Domenico , Italy	H. Mang , Austria	D. Vamvatsikos , Greece
L. Di Sarno , Italy/UK	G. Manolis , Greece	D. Vandepitte , Belgium
F. Di Trapani , Italy	G. Manos , Greece	H.Varum , Portugal
D. Duhamel , France	G.C. Marano , Italy	Y.B. Yang , Taiwan
A. Elgamal , USA	G. Markou , South Africa	S. Yoshimura , Japan
M. Erdik , Turkey	S. Mehanny , Egypt	Y.Yuan , China

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- M. Papadrakakis**, *National Technical University of Athens, Greece*
M. Fragiadakis, *National Technical University of Athens, Greece*

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Conference Guide

Programme Format

The Technical Programme consists of 21 Plenary and Semi-Plenary Lectures, 26 keynote lectures, 56 minisymposia and 28 Thematic Sessions. In total more than 780 presentations will take place during the three days of the conferences.

Plenary & Semi-Plenary Lecturers



Sondipon Adhikari

University of Glasgow, United Kingdom

C 21487 INERTIAL AMPLIFIER FOR VIBRATION CONTROL AND MITIGATION:
DESIGN AND ANALYSIS

Wednesday, 12:10-12:50, Attica



Siu-Kui Au

Nanyang Technological University, Singapore

U 19576 UNDERSTANDING AND MANAGING IDENTIFICATION PRECISION
IN OPERATIONAL MODAL ANALYSIS

Wednesday, 12:50-13:30, Attica



Jack Baker

Stanford University, USA

C 21492 RECENT ADVANCES IN GROUND MOTION SELECTION FOR SEISMIC
ANALYSIS

Wednesday, 11:30-12:10, Olympia



Peter Betsch

Karlsruhe Institute of Technology (KIT), Germany

C 21495 A SIMULTANEOUS SPACE-TIME GALERKIN APPROACH TO THE
INVERSE DYNAMICS OF NONLINEARLY ELASTIC STRUCTURES

Tuesday, 11:40-12:20, Olympia



Javier Bonet
CIMNE, Spain

- C 22647** FIRST ORDER CONSERVATION LAW FORMULATIONS IN SOLID DYNAMICS: APPLICATIONS TO DYNAMIC CRACK PROPAGATION, CONTACT MECHANICS AND STABLE SPH DISCRETIZATIONS
Monday, 10:20-11:00, Olympia



Michael Brun
University of Lorraine, France

- C 21489** APPLICATIONS OF SUBDOMAIN COUPLING METHODS TO NONSMOOTH TRANSIENT STRUCTURAL DYNAMICS AND WAVE PROPAGATION PROBLEMS
Tuesday, 12:20-13:00, Olympia



Eleni Chatzi
ETH Zurich, Switzerland

- C 21493** ROBUST MONITORING FOR ENGINEERED SYSTEMS: TOWARD AUGMENTED TWINS
Tuesday, 11:00-11:40, Olympia



Hauke Gravenkamp
International Centre for Numerical Methods in Engineering (CIMNE), Spain

- C 22199** SEMI-ANALYTICAL METHODS FOR THE SIMULATION OF ELASTIC WAVES
Tuesday, 11:00-11:40, Attica



Johann Guilleminot
Duke University, USA

- U 20088** FROM STOCHASTIC NONLINEAR CONSTITUTIVE MODELS ON COMPLEX GEOMETRIES TO MODEL-FORM UNCERTAINTIES IN ATOMISTIC COMPUTATIONS: A TOUR OF STOCHASTIC MODELING ON CONSTRAINED SPACES
Tuesday, 11:00-11:40, Templars

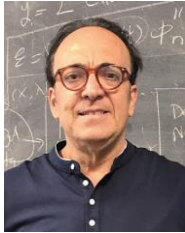


Muneo Hori

The University of Tokyo, Japan

C 22185 CHALLENGES OF APPLYING HIGH PERFORMANCE COMPUTING TO STRUCTURAL SEISMIC RESPONSE ANALYSIS

Wednesday, 12:10-12:50, Olympia



George Karniadakis

Brown University, USA

U 20045 A COMPREHENSIVE LIBRARY FOR UNCERTAINTY QUANTIFICATION IN NEURAL DIFFERENTIAL EQUATIONS AND OPERATORS

Monday, 9:40-10:20, Olympia



Paulo B. Lourenço

University of Minho, Portugal

C 21442 NEW STANDARDS FOR SEISMIC ASSESSMENT OF BUILT CULTURAL HERITAGE: ONGOING WORK

Wednesday, 12:50-13:30, Olympia



Ludovic Noels

University of Liège, France

U 19549 DEVELOPMENT OF HISTORY-DEPENDENT SURROGATE MODELS IN THE CONTEXT OF STOCHASTIC MULTI-SCALE SIMULATIONS FOR ELASTO-PLASTIC COMPOSITES

Tuesday, 11:40-12:20, Templars



Jamie Padgett

Rice University, USA

C 21497 MODELING SEISMIC RESILIENCE ACROSS SCALES: CHALLENGES, OPPORTUNITIES, AND THE ROLE OF MACHINE LEARNING

Monday, 9:00-9:40, Olympia



Paris Perdikaris

University of Pennsylvania, USA

U 20370 FROM DATA AND MODELS TO DECISIONS GUIDED BY POSTERIOR BELIEF

Tuesday, 12:20-13:00, Templars

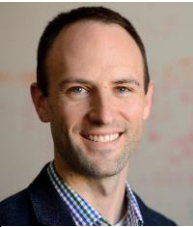


Alessandro Reali

University of Pavia, Italy

C 21494 ISOGOMETRIC ANALYSIS: ADVANCES AND APPLICATIONS WITH A SPECIAL FOCUS ON DYNAMIC PROBLEMS

Tuesday, 11:40-12:20, Attica



Michael Shields

Johns Hopkins University, USA

U 20529 UQ FOR ML AND ML FOR UQ: WHY UNCERTAINTY QUANTIFICATION AND MACHINE LEARNING GO HAND-IN-HAND

Tuesday, 11:40-12:20, Kallirhoe 1



Daniel Straub

Technical University of Munich, Germany

U 20554 DECISION-ORIENTED SENSITIVITY ANALYSIS

Tuesday, 12:20-13:00, Kallirhoe 1



Bruno Sudret

ETH Zürich, Switzerland

U 20530 SURROGATE MODELLING FOR STOCHASTIC SIMULATORS

Tuesday, 11:00-11:40, Kallirhoe 1



Enrico Tubaldi

University of Strathclyde, UK

C 21490 INVESTIGATING THE CAPABILITIES OF FLEXIBLE JOINTS FOR
ENHANCING THE PERFORMANCE OF MASONRY INFILLED FRAMES
Tuesday, 12:20-13:00, Attica



Haim Waisman

Columbia University, USA

U 20382 THE PHASE FIELD FRACTURE METHOD: DOMAIN-
DECOMPOSITION, ADAPTIVE RE-MESHING, AND STOCHASTIC
ANALYSIS
Wednesday, 11:30-12:10, Attica

Keynote Lecturers

Gian Paolo Cimellaro

C 22021 INDOOR TRACKING USING UNMANNED AERIAL VEHICLES
Monday, 14:30-16:30, Room 3B

Francesco Clementi

C 21113 DIFFERENT MODELING APPROACHES APPLIED TO A RESILIENT MASONRY STRUCTURE
Tuesday, 8:30-10:30, Olympia

Álvaro Cunha

C 20790 SEVEN YEARS OF CONTINUOUS DYNAMIC MONITORING OF BAIXO SABOR DAM
Monday, 17:00-19:00, Ground

Alireza Doostan

U 20010 SIMULTANEOUS DENOISING AND RECOVERY OF DYNAMICAL SYSTEM EQUATIONS FROM NOISY MEASUREMENTS
Wednesday, 9:00-11:00, Room 2B

Antonio Formisano

C 20324 MECHANICAL-BASED SEISMIC FRAGILITY ASSESSMENT AND RETROFIT INTERVENTION OF CLUSTERED BUILDINGS
Monday, 14:30-16:30, Olympia

Roger Ghanem

U 19805 BAYES UPDATING IN HOMOGENEOUS CHAOS SPACES
Monday, 14:30-16:30, Room 4B

Dan Givoli

C 20077 DIRICHLET-TO-NEUMANN COUPLING FOR MIXED-DIMENSIONAL TIME-DEPENDENT WAVE PROBLEMS
Monday, 14:30-16:30, Ground

Abhinav Gupta

U 20354 RISK-INFORMED DECISION-MAKING IN VERIFICATION AND VALIDATION UNDER UNCERTAINTY
Wednesday, 14:30-16:30, Room 3B

Terje Haukaas

C 20068 SENSITIVITY TO DAMPING IN NONLINEAR DYNAMIC ANALYSIS
Tuesday, 8:30-10:30, Room 2A

Adnan Ibrahimbegovic

U 19736 STOCHASTIC IDENTIFICATION OF FRACTURE AND BOND PROPERTIES FOR REINFORCED CONCRETE FROM MEASUREMENTS
Tuesday, 14:00-16:00, Room 4A

Daigoro Isobe

- C 20143** FEA-VR SYSTEM FOR IN-DOOR NON-STRUCTURAL COMPONENTS UNDER SEISMIC EXCITATIONS
Monday, 11:30-13:30, Kallirhoe 1

Boris Jeremic

- C 20812** THREE DIMENSIONAL, THREE COMPONENT SEISMIC WAVE FIELD RECONSTRUCTION FROM LIMITED SURFACE MEASUREMENTS
Monday, 11:30-13:30, Room 1A

Marcin Kamiński

- U 20024** RELATIVE ENTROPY-BASED RELIABILITY ASSESSMENT OF HYBRID TELECOMMUNICATION SKELETAL TOWERS
Wednesday, 17:00-19:00, Room 3B

Andreas Kappos

- C 21026** RETROFITTING OF EXISTING BUILDINGS USING FRICTION DAMPERS ACCORDING TO THE NEW EUROCODE 8
Tuesday, 14:00-16:00, Kallirhoe 2

Amir R. Khoei

- C 21137** MULTISCALE MODELING OF COUPLED THERMO-HYDRO-MECHANICAL ANALYSIS OF HETEROGENEOUS POROUS MEDIA WITH MICRO-DYNAMIC EFFECTS
Tuesday, 8:30-10:30, Room 1B

Oren Lavan

- C 20665** A NEW APPROACH FOR MODELING AND ANALYZING SELF-CENTERING SYSTEMS
Tuesday, 8:30-10:30, Kallirhoe 2

George Markou

- C 20792** DEVELOPING AN ARTIFICIAL NEURAL NETWORK MODEL THAT PREDICTS THE FUNDAMENTAL PERIOD OF STEEL STRUCTURES USING A LARGE DATASET
Monday, 11:30-13:30, Kallirhoe 2

Hermann Matthies

- U 20365** MATERIAL SYMMETRY ADAPTED PROBABILISTIC MODELLING OF ELASTICITY TENSORS
Wednesday, 14:30-16:30, Olympia

Gabriele Milani

- C 20161** FINITE ELEMENT ANALYSIS OF HIGH-DAMPING UNBONDED FIBER REINFORCED ELASTOMERIC ISOLATORS (UFREIS) OF DIFFERENT SHAPE FACTORS
Tuesday, 14:00-16:00, Olympia

K. C. Park

- C 21414** NOVEL DISPLACEMENT-BASED PARTITIONED EQUATIONS OF MOTION FOR STRUCTURES
Monday, 11:30-13:30, Ground

Edoardo Patelli

U 20039 AI TOOLS FOR HUMAN RELIABILITY ANALYSIS
Wednesday, 17:00-19:00, Room 2B

Alba Sofi

U 19952 INTERVAL RELIABILITY ANALYSIS OF STRUCTURES CONTROLLED BY FRACTIONAL VISCOELASTIC DAMPERS WITH UNCERTAIN PARAMETERS
Monday, 14:30-16:30, Room 3A

Arturo Tena-Colunga

C 20066 REVIEW OF RETROFIT AND STRENGTHENING STRATEGIES USED IN BUILDINGS IN MEXICO CITY AFTER STRONG EARTHQUAKES
Wednesday, 14:30-16:30, Room 1A

Marcos Valdebenito

C 20423 ON THE APPLICATION OF MULTIDOMAIN LINE SAMPLING FOR RELIABILITY AND SENSITIVITY ANALYSIS IN STOCHASTIC LINEAR DYNAMICS
Wednesday, 9:00-11:00, Room 3A

Fabrizio Vestroni

C 20862 MITIGATION OF STRUCTURE VIBRATIONS BY ADDING A HYSTERETIC ELEMENT
Tuesday, 8:30-10:30, Room 3A

Wolfgang A. Wall

U 20011 INVERSE ANALYSIS BONUS OPTION VIA MULTIPHYSICS MODELING
Monday, 11:30-13:30, Room 3A

COMPdyn 2023

Compdyn Minisymposia

C-MS 1: NOVEL TECHNIQUES AND APPROACHES FOR SEISMIC PROTECTION OF STRUCTURES WITH ISOLATION AND/OR ENERGY DISSIPATION DEVICES

MS Organizers: Enrico Tubaldi, Laura Ragni, Dario De Domenico, Daniele Losanno, Hamid Ahmadi

MS 1 - I:	Tuesday,	8:30-10:30,	Kallirhoe 2
MS 1 - II:	Tuesday,	14:00-16:00,	Kallirhoe 2
MS 1 - III:	Tuesday,	16:30-18:30,	Kallirhoe 2

C-MS 2: ADVANCES IN THE DYNAMIC RESPONSE ANALYSIS, MONITORING, AND MITIGATION OF WIND TURBINES

MS Organizers: Agathoklis Giaralis, Giuseppe Failla

MS 2 - I:	Tuesday,	16:30-18:30,	Room 3A
MS 2 - II:	Wednesday,	9:00-11:00,	Ground

C-MS 3: PROTECTION OF MUSEUM'S COLLECTIONS COMPUTATIONAL APPROACHES AND INNOVATIVE INTERVENTIONS

MS Organizers: Stefania Viti, Marco Tanganelli

MS 3 - I:	Tuesday,	8:30-10:30,	Room 1A
MS 3 - II:	Tuesday,	14:00-16:00,	Room 1A

C-MS 4: ISOGOMETRIC AND OTHER ADVANCED DISCRETIZATION METHODS FOR STRUCTURAL DYNAMICS AND TRANSIENT PROBLEMS

MS Organizers: Thomas JR Hughes, Alessandro Reali, Simone Morganti

MS 4:	Monday,	11:30-13:30,	Abbey
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C-MS 5: REPAIR AND RETROFIT OF STRUCTURES

MS Organizers: Ciro Del Vecchio, Marco Di Ludovico, Alper Ilki

MS 5:	Wednesday,	14:30-16:30,	Room 1A
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C-MS 6: EXPERIMENTAL MEASUREMENTS AND NUMERICAL SIMULATION IN THE FIELD OF EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS – NEW STRUCTURES AND STRUCTURAL RETROFITTING

MS Organizers: George C. Manos, Konstantinos Katakalos

MS 6 - I:	Tuesday,	16:30-18:30,	Attica
MS 6 - II:	Wednesday,	9:00-11:00,	Attica
MS 6 - III:	Wednesday,	14:30-16:30,	Attica
MS 6 - IV:	Wednesday,	17:00-19:00,	Attica

C-MS 7: SUSTAINABLE STRENGTHENING INTERVENTIONS TO PREVENT FAILURE IN UNREINFORCED MASONRY STRUCTURES AND INFRASTRUCTURES

MS Organizers: Claudia Casapulla, Linda Giresini, Omar Alshawa, Francesca Taddei, Ehsan Noroozinejad

MS 7 - I:	Wednesday,	9:00-11:00,	Kallirhoe 2
MS 7 - II:	Wednesday,	14:30-16:30,	Kallirhoe 2

C-MS 8: RECENT ADVANCES AND CHALLENGES IN GEOTECHNICAL EARTHQUAKE ENGINEERING

MS Organizers: Castorina Silva Vieira, Yiannis Tsompanakis

MS 8 - I: Monday, 11:30-13:30, Room 1B

MS 8 - II: Monday, 14:30-16:30, Room 1B

C-MS 9: SEISMIC SAFETY ASSESSMENT OF STRUCTURES

MS Organizers: Pedro Delgado, António Arêde

MS 9: Monday, 14:30-16:30, Room 4A

C-MS 10: RECENT ADVANCES IN SEISMIC ISOLATION OF STRUCTURES WITH NOVEL VIBRATION CONTROL APPROACHES

MS Organizers: Evangelos J. Sapountzakis, Konstantinos A. Kapasakalis

MS 10: Tuesday, 14:00-16:00, Room 3B

C-MS 11: THE ROLE OF THE STRUCTURAL MONITORING TO PREDICT THE PRIOR DAMAGE OR THE FACTUAL DEGRADATION PATTERN IN ORDER TO UPDATE THE SEISMIC VULNERABILITY OF EXISTING BUILDINGS

MS Organizers: Carlo Del Gaudio, Andrea Miano, Fabio Di Carlo, Diego Alejandro Talledo

MS 11: Tuesday, 14:00-16:00, Room 1B

C-MS 12: ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN DESIGN AND ASSESSMENT OF STRUCTURES

MS Organizers: George Markou, Nikolaos P. Bakas, Vagelis Harmandaris

MS 12 - I: Monday, 11:30-13:30, Kallirhoe 2

MS 12 - II: Monday, 14:30-16:30, Kallirhoe 2

MS 12 - III: Monday, 17:00-19:00, Kallirhoe 2

C-MS 13: MONITORING AND LIFE CYCLE PERFORMANCE OF RAILWAY BRIDGES

MS Organizers: Eftychia Apostolidi, Eleni Chatzi, Alfred Strauss

MS 13: Tuesday, 16:30-18:30, Room 1B

C-MS 14: ADVANCES IN OPTIMIZATION AND CONTROL OF STRUCTURES UNDER DYNAMIC LOADS

MS Organizers: Giulia Angelucci, Giuseppe Quaranta, Bruno Briseghella, Izuru Takewaki

MS 14: Wednesday, 9:00-11:00, Room 4A

C-MS 15: NOISE AND VIBRATION HARSHNESS OF GEAR TRANSMISSIONS UNDER DETERMINISTIC AND NON DETERMINISTIC CONDITIONS: LIVE-I

MS Organizers: Mohamed Ichchou, Pascal Fossat, Stephan Rinderknecht, Francesco Franco

MS 15: Wednesday, 17:00-19:00, Room 1A

C-MS 17: STEEL JOINTS BEHAVIOR UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS

MS Organizers: Roberto Tartaglia, Mario D'Aniello, Massimo Latour

MS 17 - I: Wednesday, 9:00-11:00, Kallirhoe 1

MS 17 - II: Wednesday, 14:30-16:30, Kallirhoe 1

MS 17 - III: Wednesday, 17:00-19:00, Kallirhoe 1

C-MS 19: RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS

MS Organizers: Daniela Addessi, Michele Betti, Nicola Cavalagli, Francesco Clementi, Antonio Formisano, Gabriele Milani

MS 19 - I:	Monday,	11:30-13:30,	Olympia
MS 19 - II:	Monday,	14:30-16:30,	Olympia
MS 19 - III:	Monday,	17:00-19:00,	Olympia
MS 19 - IV:	Tuesday,	8:30-10:30,	Olympia
MS 19 - V:	Tuesday,	14:00-16:00,	Olympia
MS 19 - VI:	Tuesday,	16:30-18:30,	Olympia

C-MS 20: ADVANCED NUMERICAL METHODS IN DYNAMICS, COMPUTATIONAL INTERFACE MECHANICS AND COUPLED PROBLEMS

MS Organizers: Jose Gonzalez, Jin-Gyun Kim, Radek Kolman, K .C. Park

MS 20 - I:	Monday,	11:30-13:30,	Ground
MS 20 - II:	Monday,	14:30-16:30,	Ground

C-MS 22: HYSTERESIS PHENOMENA IN STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING: EXPERIMENTS, MODELING, AND DESIGN

MS Organizers: N. Vaiana, A. Charalampakis, G. Tsiatas, P. Tsopelas

MS 22 - I:	Tuesday,	8:30-10:30,	Room 3A
MS 22 - II:	Tuesday,	14:00-16:00,	Room 3A

C-MS 24: ADVANCES IN SEISMIC ASSESSMENT AND INTEGRATED RETROFITTING FOR ENVELOPES OF RC

MS Organizers: André Furtado, Marco Donà, Maria Teresa de Risi

MS 24 - I:	Wednesday,	9:00-11:00,	Room 2A
MS 24 - II:	Wednesday,	14:30-16:30,	Room 2A

C-MS 25: TOWARDS SEISMIC RESILIENCE: STRATEGIES AND TECHNOLOGICAL INNOVATION FOR SEISMIC RISK REDUCTION OF EXISTING STRUCTURES

MS Organizers: Virginio Quaglino, Paolo Calvi, Tommaso D'Antino, Eleonora Bruschi, Carlo Pettoruso

MS 25 - I:	Monday,	14:30-16:30,	Abbey
MS 25 - II:	Monday,	17:00-19:00,	Abbey

C-MS 26: NON-DETERMINISTIC MODEL UPDATING AND HEALTH MONITORING WITH UNCERTAINTY TREATMENT

MS Organizers: Sifeng Bi, Matthias Faes, Marcos Valdebenito, Yongtao Bai, Matteo Broggi, Michael Beer

MS 26 - I:	Wednesday,	9:00-11:00,	Room 3A
MS 26 - II:	Wednesday,	14:30-16:30,	Room 3A

C-MS 28: MONITORING, DAMAGE MODELLING AND SOIL-STRUCTURE-INTERACTION IN CULTURAL HERITAGE CONSTRUCTIONS

MS Organizers: Giuseppe Maddaloni, Stefania Sica, Antonino Iannuzzo, Michela Monaco

MS 28 - I:	Monday,	11:30-13:30,	Room 2A
MS 28 - II:	Monday,	14:30-16:30,	Room 2A

C-MS 29: SOFT COMPUTING AND ARTIFICIAL INTELLIGENCE TECHNIQUES IN STRUCTURAL ENGINEERING

MS Organizers: Vagelis Plevris, Usama Ebead, Tadesse G. Wakjira

MS 29: Wednesday, 17:00-19:00, Kallirhoe 2

C-MS 30: THE ASSESSMENT OF RESILIENCE WITH APPROACHES BASED ON NUMERICAL SIMULATIONS

MS Organizers: Davide Forcellini

MS 30: Monday, 11:30-13:30, Room 4B

C-MS 31: BEYOND DISCONTINUUM-BASED ANALYSIS: NOVEL APPROACHES FOR DISCRETE ELEMENT STRUCTURAL MODELLING OF COMPOSITE MATERIALS

MS Organizers: D. Malomo, A. Mehrotra, N. Kassotakis, G. Gabbianelli, B. Pulatsu

MS 31: Monday, 17:00-19:00, Room 4A

C-MS 32: MULTI-HAZARD RISK MANAGEMENT OF THE BUILT ENVIRONMENT: RECENT ADVANCES AND OPEN CHALLENGES

MS Organizers: Serena Cattari, Silvia De Angeli, Carmine Galasso, Xavier Romao

MS 32 - I: Monday, 14:30-16:30, Room 1A

MS 32 - II: Monday, 17:00-19:00, Room 1A

C-MS 33: INSIGHT IN SEISMIC PERFORMANCE OF RETROFITTED BUILDINGS: `

MS Organizers: Maria Teresa De Risi, Carlo Del Gaudio, Gerardo Mario Verderame

MS 33: Wednesday, 17:00-19:00, Room 2A

C-MS 34: INSIGHTS AND DEVELOPMENTS IN DYNAMIC SOIL-FOUNDATION-STRUCTURE INTERACTION

MS Organizers: Maria Iovino, Raffaele Di Laora, Emmanouil Rovithis

MS 34: Monday, 11:30-13:30, Room 1A

C-MS 35: RECENT ADVANCES IN GROUND- AND STRUCTURE-BORNE NOISE AND VIBRATION ASSESSMENT & PREDICTION

MS Organizers: Lukas Moschen, Anastasios Sextos, Grigorios Tsinidis

MS 35: Tuesday, 8:30-10:30, Room 3B

C-MS 36: EXPERIMENTAL TESTING ON SEISMIC ISOLATION AND ENERGY DISSIPATION DEVICES

MS Organizers: Marco Furinghetti, Alberto Pavese, Paolo Castaldo

MS 36: Tuesday, 16:30-18:30, Room 3B

C-MS 37: DESIGN OF STRUCTURES UNDER EXTREME LOADS

MS Organizers: Marco Simoncelli, Flavio Stochino, Marco Zucca

MS 37 - I: Monday, 11:30-13:30, Room 3B

MS 37 - II: Monday, 14:30-16:30, Room 3B

**C-MS 38: TIMBER-BASED SYSTEMS FOR NEW AND EXISTING STRUCTURES IN SEISMIC AREA:
RECENT DEVELOPMENTS AND FUTURE TRENDS**

MS Organizers: Antonio Sandoli, Valentina Tomei, Martina Sciomenta, Massimo Fragiacom

MS 38 - I: Tuesday, 8:30-10:30, Abbey

MS 38 - II: Tuesday, 14:00-16:00, Abbey

C-MS 39: SHM FOR TRANSPORT INFRASTRUCTURE RESILIENCE

MS Organizers: Marco Domaneschi, Eleni Chatzi, Yan Xu, Stergios Aristoteles Mitoulis

MS 39: Tuesday, 16:30-18:30, Abbey

**C-MS 40: APPLICATION OF DEEP LEARNING AND IOT IN NUMERICAL MODELLING AND
HEALTH MONITORING OF STRUCTURES/INFRASTRUCTURES**

MS Organizers: Ramin Ghiasi, Abdollah Malekjafarian, Mohammad Noori, Eleni Chatzi

MS 40: Wednesday, 9:00-11:00, Room 3B

**C-MS 42: COMPUTATIONAL METHODS FOR INVERSE PROBLEMS IN STRUCTURES AND
GEOPHYSICS**

MS Organizers: Dan Givoli, Haim Waisman

MS 42 - I: Tuesday, 14:00-16:00, Kallirhoe 1

MS 42 - II: Tuesday, 16:30-18:30, Kallirhoe 1

**C-MS 45: STRUCTURAL DYNAMICS, SEISMIC SAFETY AND RISK ASSESSMENT OF SPECIAL
STRUCTURES**

MS Organizers: Rui Carneiro Barros, Manuel Braz-César

MS 45 - I: Monday, 11:30-13:30, Room 4A

MS 45 - II: Monday, 14:30-16:30, Room 4A

C-MS 48: RECENT ADVANCES IN GROUND MOTION SELECTION AND SCALING TECHNIQUES

MS Organizers: Shaghayegh Karimzadeh, Manolis Georgioudakis, Michalis Fragiadakis

MS 48: Wednesday, 17:00-19:00, Ground

**C-MS 49: SEISMIC RESPONSE OF MASONRY CROSS VAULTS: SHAKING TABLE TESTS AND
NUMERICAL VALIDATIONS**

MS Organizers: Chiara Calderini, Paulo Lourenço, Nuno Mendes, Nicoletta Bianchini, Paulo Candeias

MS 49: Wednesday, 17:00-19:00, Templars

**C-MS 50: DATA DRIVEN METHODS AND ENGINEERING SOFTWARE FOR NEXT GENERATION
HPC APPLICATIONS**

MS Organizers: Vissarion Papadopoulos, Kyriakos Giannakoglou, George Goumas

MS 50: Wednesday, 17:00-19:00, Room 1B

Compdyn Thematic Sessions

C-TS 2: ALGORITHMS FOR STRUCTURAL HEALTH MONITORING

TS 2 - I: Monday, 17:00-19:00, Ground
TS 2 - II: Tuesday, 8:30-10:30, Ground

C-TS 3: BRIDGE DYNAMICS

TS 3 - I: Tuesday, 14:00-16:00, Room 2A
TS 3 - II: Tuesday, 16:30-18:30, Room 2A

C-TS 4: CONSTITUTIVE MODELLING

TS 4: Wednesday, 17:00-19:00, Room 1A

C-TS 5: DYNAMICS OF CONCRETE AND MASONRY STRUCTURES

TS 5 - I: Wednesday, 9:00-11:00, Abbey
TS 5 - II: Wednesday, 14:30-16:30, Abbey
TS 5 - III: Wednesday, 17:00-19:00, Abbey

C-TS 9: GEOTECHNICAL ENGINEERING

TS 9 - I: Monday, 17:00-19:00, Room 1B
TS 9 - II: Tuesday, 8:30-10:30, Room 1B

C-TS 10: IMPACT DYNAMICS

TS 10: Wednesday, 9:00-11:00, Room 1A

C-TS 11: INVERSE PROBLEMS IN STRUCTURAL DYNAMICS

TS 11 - I: Tuesday, 14:00-16:00, Room 3A

C-TS 13: NONLINEAR DYNAMICS

TS 13 - I: Tuesday, 8:30-10:30, Room 2A
TS 13 - II: Tuesday, 14:00-16:00, Room 2A

C-TS 14: NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS

TS 14 - I: Monday, 11:30-13:30, Kallirhoe 1
TS 14 - II: Monday, 14:30-16:30, Kallirhoe 1
TS 14 - III: Monday, 17:00-19:00, Kallirhoe 1
TS 14 - IV: Tuesday, 8:30-10:30, Kallirhoe 1

C-TS 15: OPTIMUM DESIGN AND CONTROL

TS 15 - I: Monday, 14:30-16:30, Room 3B
TS 15 - II: Monday, 17:00-19:00, Room 3B

C-TS 17: PERFORMANCE-BASED EARTHQUAKE ENGINEERING

TS 17 - I: Wednesday, 9:00-11:00, Room 1B
TS 17 - II: Wednesday, 14:30-16:30, Room 1B

C-TS 19: REPAIR AND RETROFIT OF STRUCTURES

TS 19 - I: Tuesday, 16:30-18:30, Room 1A
TS 19 - II: Wednesday, 9:00-11:00, Room 1A

C-TS 20: SEISMIC ISOLATION

TS 20: Wednesday, 17:00-19:00, Room 3A

C-TS 24: SOIL-STRUCTURE INTERACTION

TS 24 - I: Monday, 14:30-16:30, Room 2A
TS 24 - II: Monday, 17:00-19:00, Room 2A

C-TS 25: SOLUTION STRATEGIES FOR DYNAMIC PROBLEMS

TS 25: Tuesday, 14:00-16:00, Room 4B

C-TS 26: SOUND AND VIBRATION

TS 26: Wednesday, 14:30-16:30, Room 4A

C-TS 27: STEEL STRUCTURES

TS 27 - I: Wednesday, 9:00-11:00, Room 4B
TS 27 - II: Wednesday, 14:30-16:30, Room 4B

C-TS 28: STOCHASTIC DYNAMICS

TS 28: Tuesday, 8:30-10:30, Room 4B

C-TS 30: WAVE PROPAGATION

TS 30: Wednesday, 17:00-19:00, Room 4A

C-TS 31: SEISMIC RISK AND DAMAGE ASSESSMENT

TS 31 - I: Tuesday, 16:30-18:30, Templars
TS 31 - II: Wednesday, 9:00-11:00, Templars
TS 31 - III: Wednesday, 14:30-16:30, Templars

C-TS 32: SEISMIC RELIABILITY ANALYSIS

TS 32: Tuesday, 16:30-18:30, Room 2B

UNCECOMP 2023

Uncecomp Minisymposia

U-MS 1: UNCERTAINTY QUANTIFICATION IN VIBRATION BASED MONITORING AND STRUCTURAL DYNAMICS SIMULATIONS

MS Organizers: Eleni Chatzi, Manolis Chatzis, Vasilis Dertimanis, Geert Lombaert, Costas Papadimitriou

MS 1: Tuesday, 16:30-18:30, Room 4A

U-MS 2: LEARNING FROM SMALL DATA: DATA-DRIVEN METHODS AND MACHINE LEARNING FOR UNCERTAINTY QUANTIFICATION IN ENGINEERING APPLICATIONS

MS Organizers: Dimitrios G. Giovanis, Audrey Olivier, Michael Shields, Lori Graham-Brady

MS 2 - I: Wednesday, 9:00-11:00, Room 2B

MS 2 - II: Wednesday, 14:30-16:30, Room 2B

U-MS 3: BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE AND ENGINEERING

MS Organizers: Oindrila Kanjilal, Iason Papaioannou, Daniel Straub, Geert Lombaert, Costas Papadimitriou

MS 3 - I: Tuesday, 14:00-16:00, Ground

MS 3 - II: Tuesday, 16:30-18:30, Ground

U-MS 4: RELIABILITY ANALYSIS AND RARE EVENT SIMULATION

MS Organizers: Max Ehre, Iason Papaioannou, Elisabeth Ullmann, Michael Shields

MS 4: Monday, 17:00-19:00, Room 3A

U-MS 6: SURROGATE MODELLING AND DATA-DRIVEN APPROACHES FOR UNCERTAINTY QUANTIFICATION

MS Organizers: Jean-Marc Bourinet, Michael Shields, Bruno Sudret, Alexandros Taflanidis

MS 6 - I: Monday, 11:30-13:30, Attica

MS 6 - II: Monday, 14:30-16:30, Attica

MS 6 - III: Monday, 17:00-19:00, Attica

MS 6 - IV: Tuesday, 8:30-10:30, Attica

MS 6 - V: Tuesday, 14:00-16:00, Attica

U-MS 7: UNCERTAINTY QUANTIFICATION, DATA ASSIMILATION, MACHINE LEARNING, AND THEIR INTEGRATIONS FOR EFFECTIVE PREDICTIVE MODELS ?

MS Organizers: Didier Lucor, Rossella Arcucci, Bojana Rosic

MS 7 - I: Wednesday, 9:00-11:00, Olympia

MS 7 - II: Wednesday, 14:30-16:30, Olympia

MS 7 - III: Wednesday, 17:00-19:00, Olympia

U-MS 9: UQ AND DATA ASSIMILATION WITH SPARSE, LOW-RANK TENSOR, AND MACHINE LEARNING METHODS

MS Organizers: Hermann G. Matthies, Alexander Litvinenko, Martin Eigel

MS 9 - I: Wednesday, 14:30-16:30, Room 4B

MS 9 - II: Wednesday, 17:00-19:00, Room 4B

U-MS 10: UNCERTAINTY QUANTIFICATION FOR SCIENTIFIC MACHINE LEARNING

MS Organizers: Paris Perdikaris, M. Giselle Fernández-Godino

MS 10: Monday, 17:00-19:00, Room 4B

U-MS 11: UNCERTAINTY QUANTIFICATION UNDER LIMITED DATA

MS Organizers: Alba Sofi, David Moens, Edoardo Patelli, Matthias Faes, Michael Hans

MS 11 - I: Monday, 14:30-16:30, Room 3A

MS 11 - II: Monday, 17:00-19:00, Room 3A

U-MS 13: SOFTWARE FOR UNCERTAINTY QUANTIFICATION

MS Organizers: Stefano Marelli, Edoardo Patelli, Dirk Pflüger

MS 13 - I: Wednesday, 14:30-16:30, Room 2B

MS 13 - II: Wednesday, 17:00-19:00, Room 2B

U-MS 14: GREY-BOX MODELLING FOR UNCERTAINTY QUANTIFICATION

MS Organizers: David Moens, Augustin Persoons, Matthias Faes, Enrico Zio, George Stefanou, Matteo Broggi

MS 14 - I: Monday, 14:30-16:30, Room 2B

MS 14 - II: Monday, 17:00-19:00, Room 2B

U-MS 15: MULTISCALE AND ENHANCED METHODS FOR RANDOMLY STRUCTURED COMPOSITE MATERIALS

MS Organizers: George Stefanou, Victor Eremeyev, Emanuele Reccia, Patrizia Trovalusci, Marco Pingaro

MS 15: Tuesday, 8:30-10:30, Room 4A

U-MS 16: STOCHASTIC FINITE ELEMENT METHODS: IMPROVEMENTS AND NEW APPROACHES

MS Organizers: Roger Ghanem, Haidi Meidani, Ruda Zhang

MS 16: Monday, 14:30-16:30, Room 4B

U-MS 18: ADVANCED MONTE-CARLO METHODS FOR UNCERTAINTY QUANTIFICATION AND OPTIMIZATION OF CIVIL INFRASTRUCTURE

MS Organizers: Matt DeJong, Ziqi Wang, Jinyan Zhao, Sanjay Govindjee

MS 18: Monday, 11:30-13:30, Room 2B

U-MS 20: VVUQ FOR COMPLEX MULTIPHYSICS PROBLEMS

MS Organizers: Filipe S. Pereira, Jim Ferguson, Aaron Koskelo, Brandon Wilson

MS 20: Tuesday, 8:30-10:30, Room 2B

U-MS 21: INVERSE ANALYSIS FOR LARGE-SCALE, COMPUTATIONALLY DEMANDING PROBLEMS IN HIGH-(STOCHASTIC) DIMENSIONS

MS Organizers: Wolfgang A. Wall, Phaedon-Stelios Koutsourelakis

MS 21: Monday, 11:30-13:30, Room 3A

Uncecomp Thematic Sessions

U-TS 6: METHODS FOR IMPROVING THE EFFICIENCY OF MONTE CARLO SIMULATION

TS 6: Tuesday, 14:00-16:00, Room 4A

U-TS 13: SIMULATION OF RANDOM FIELDS

TS 13: Monday, 17:00-19:00, Room 2B

U-TS 15: STOCHASTIC FRACTURE AND DAMAGE

TS 15: Tuesday, 14:00-16:00, Room 4A

U-TS 16: SYSTEM RELIABILITY ANALYSIS, DESIGN AND RISK ASSESSMENT

TS 16 - I: Wednesday, 14:30-16:30, Room 3B

TS 16 - II: Wednesday, 17:00-19:00, Room 3B

U-TS 17: UNCERTAINTY QUANTIFICATION

TS 17 - I: Monday, 11:30-13:30, Templars

TS 17 - II: Monday, 14:30-16:30, Templars

TS 17 - III: Monday, 17:00-19:00, Templars

TS 17 - IV: Tuesday, 8:30-10:30, Templars

TS 17 - V: Tuesday, 14:00-16:00, Templars

U-TS 20: WAVE PROPAGATION IN MICRO-STRUCTURED RANDOM MEDIA

TS 20: Wednesday, 14:30-16:30, Room 3A

U-TS 21: COMPUTATIONAL STOCHASTIC MECHANICS

TS 21: Wednesday, 14:30-16:30, Ground

Conference Venue

The Conference Venue is the **Royal Olympic Hotel** situated at the heart of the historic center of Athens, consists of 18 recently renovated meeting rooms with distinctive character and unique decoration. The Conference venue combines outstanding conference facilities, with state-of-the-art audio-visual equipment and technical support, together with a very personal attendance of the experienced and very caring personnel.

The unique location of the hotel offers to the Conference attendees the privilege to enjoy the breathtaking view of Acropolis and of the columns of the Temple of Olympian Zeus during a conference break, leading to a most memorable scientific meeting!

The City of Athens

Athens (in Greek: Αθήνα) has more than 4 million inhabitants. The name Athens is derived from the name of the Greek goddess Athena. Athens city was already an important place in ancient times and the birthplace of Democracy. Athens is also known as a city that produced many philosophers, such as Plato, Aristotle and Socrates. As a result, Athens became an important center for culture, art and philosophy.



The capital of Greece is full of ancient monuments, temples, ruins and churches. For lovers of ancient Greece, this city is a paradise. You really have to see the Acropolis. This hill in the middle of Athens has some of the most important archaeological monuments. Throughout the city, however, you will find remains of temples and other monuments. Many of these are dedicated to the ancient Greek gods.

Athens also has plenty of museums. The Acropolis museum and the National Archaeological Museum are perhaps the best known. The National Archaeological Museum, for example, has the largest collection of ancient Greek art in the entire country. Athens is also a pleasant city with several squares such as Monastiráki Square where you will also find a large shopping district. So there is something for everyone to experience during an Athens city trip.

Moving around Athens

The Athens public transportation network offers a wide range of routes, combining many different means, including the metro, trains, buses, trolley-buses and the tram. Airport to city center transportation by metro takes 40 minutes and costs €10.

METRO

The state-of-the-art Athens Metro serves all major city spots and sites of interest with several new stations being added to the network every year.

Apart from safety, speed and comfort, passengers also enjoy the unique opportunity to see in-station displays of the ancient ruins and findings that were discovered during the metro construction.

TRAM

The Athens Tram (inaugurated in 2004) completes the transportation network of Athens Metropolitan area and offers a charming ride along the coastline of the city, from Voula to Faliro.

	Duration	Cost
AIRPORT – CITY CENTER TRANSPORTATION		
Metro & Suburban train	40 minutes	10 Euros (one way)
Express Shuttle	40 minutes	6 Euros (one way)
Taxi	30 minutes	40 Euros (fixed rate)
AROUND THE CITY		
Unlimited transportation ticket (bus, metro, tram) excluding airport routes	90 minutes	1.40 Euros
	24 hours	4.50 Euros
	5 days	9 Euros

Conference Information

Registration and Check in

All attendees are required to check in at the Registration Desks.

Identification Badge

Participants are required to wear badges at all times while in the Conference area.

Secretariat Timetable

Sunday June 11,	18:00 to 20:00
Monday June 12,	8:00 to 18:30
Tuesday June 13,	8:30 to 18:30
Wednesday June 14,	9:00 to 18:30

Papers Presentation - Time and Equipment

All technical sessions will last 2 hours. Typical formats consist of six presentations of 20 minutes. The allocation for Plenary and Semi-Plenary Lectures is 40 minutes and for Keynote Lectures 30 minutes. The allocated time for each presentation includes Q & A.

The Conference will not provide computers for presentation. All presentations will be made with the presenter's laptop computer using LCD projector. You are kindly requested to test your laptop with the projector in your session room during the break preceding your presentation.

No overhead projectors will be provided; therefore no presentations using transparencies will be possible. We strongly encourage you to have a backup of your presentation in a USB storage device in the event of your laptop has a technical problem or is incompatible with the LCD projector.

Make sure that you have the necessary cords /converters/adapters so that your laptop will work with Greek power outlets CEE 7/4, also called "Schuko" socket and the LCD projector.

Internet Access

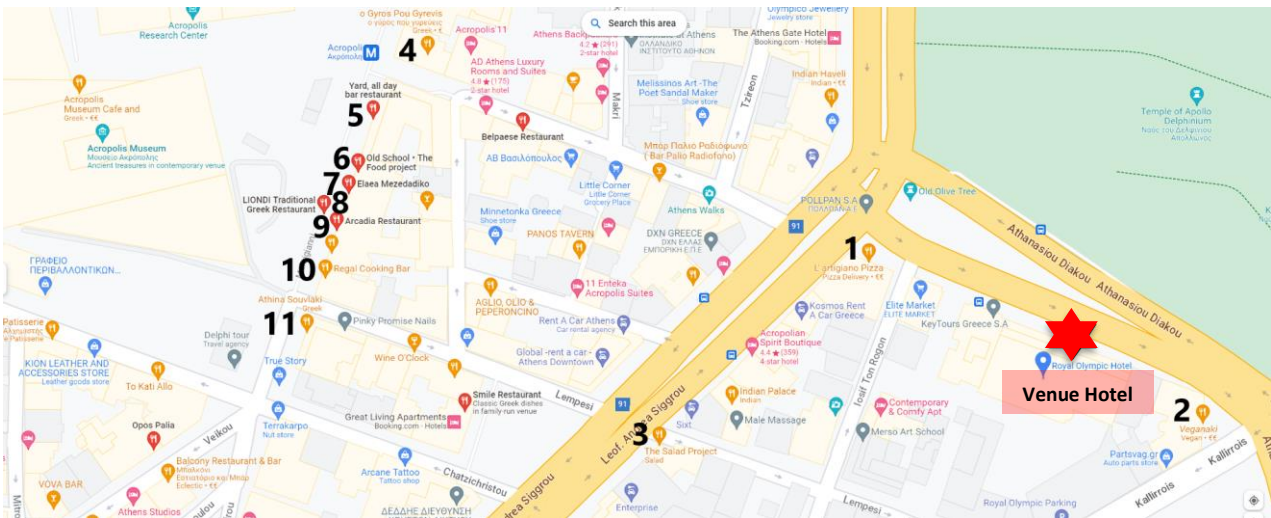
Wireless Internet access will be available in the premises of the Conference venue.

Lunch Options

There are many available lunch options near the Conference venue. An indicative list can be found below:

1. L' artigiano Pizza 53m from venue
2. Veganaki - Vegan choices 78m from venue
3. The Salad Project -Salads, snacks, 180m from venue
4. Gyros pou Gyreueis - Mediterranean, Fast Food, 240m from venue
5. Yard, all day Bar, Mediterranean, 280 m from venue
6. Old School the Food Project - Mediterranean, 300m from venue
7. Elaea Dine & Wine, Greek, 300m from venue
8. LIONDI Traditional Greek Restaurant - Greek ,300m from venue
9. Arcadia Restaurant - Greek, Mediterranean, Seafood, 300m from venue
10. Regal Cooking Bar, 300m from venue
11. Athina Souvlaki, Greek, 300m from venue

A light lunch box can alternatively be purchased from the lobby of the Royal Olympic Hotel at the price of 20 euros.



Social Events

Welcome Reception:

Sunday **June 11**, (20:30 to 21:30), Roof Garden, Royal Olympic Hotel

Conference Dinner:

Tuesday **June 13** (20:30 to 23:30), Divani Caravel Hotel

Accompanying Persons' Programme:

The Accompanying Persons' Programme includes the Welcome Reception and the Conference Dinner.

Tours & Excursions:

Reservations for the below excursions are made directly to the designated tour agency **Erasmus S.A** via <https://erasmus.eventsair.com/compdyn-2023/bookingtour>.

THE ACROPOLIS, THE MUSEUM OF ACROPOLIS & ATHENS TOUR

Duration: 8:00-14:00

Daily

Cost per person: 79 €

Includes entrance fees to the Acropolis and the Museum, experienced English-speaking guide, transfer to and from hotels in A/C coaches, taxes.



The striking contrast between breathtaking monuments of a glorious past and modern elegant structures is what you will enjoy during your tour of Athens. Visit the Acropolis, the crowning beauty and glory of Ancient Athens, with its many monuments atop its rocky base, including the spectacular Parthenon, the Propylea, the temple of Athena Nike and the Erechtheion, with its Porch of Maidens.

Drive to the Roman Temple of Olympic Zeus, the Panathinaikon Stadium (site of the first modern Olympic Games in 1896), the Tomb of the unknown Soldier in front of the Parliament House on Constitution Square. See views of government buildings and elegant structures of the 19th century. Drive along Panepistimiou Avenue and view the Catholic Cathedral, the Academy, the University of Athens Propylea and the National Library. Conclude your tour with a visit to the new Acropolis museum, a marvel of architecture with a full exhibition of the glory of Ancient Athens.

CAPE SOUNION - TEMPLE OF POSEIDON

Duration: 14:30-19:00

Daily

Cost per person: 45 €

Includes Entrance fee to the Sanctuary, experienced English-speaking guide, transfer to and from hotels A/C coaches, taxes.



The Sanctuary of Sounion, with the astonishing temple of Poseidon, is one of the most important sanctuaries in Attica. The sanctuary of Sounion is first mentioned in the Odyssey, as the place where Menelaus stopped during his return from Troy to bury his helmsman. Apart from its historical importance, Sounion offers one of the most breathtaking views in the Attica region. Late in the afternoon, Sounion is painted by the wonderful colours of the sunset and the landscape of ancient ruins perched above the sea is simply majestic.

MYCENAE - NAFPLION – EPIDAUROS

Duration: 7:30-19:00

Tuesday, Wednesday, Thursday & Saturday

Cost per person: 100 €

Includes entrance fees to the archaeological site of Mycenae and the museum, experienced English-speaking guide, transfer to and from hotels in A/C coaches, lunch at local restaurant (beverages not included), taxes.



The "golden" city of Mycenae, the city of the legendary king Atreus and Agamemnon, the one that was cited by Homer and excavated by Heinrich Schliemann, is one of the most important and most famous archaeological sites of Greece. The Dorian migration was the outset of the decay of Mycenae, which was destroyed by the people of Argos in the 5th century B.C. and was abandoned in the 10th century. The Mycenaean citadel is still a fascinating place. The rich findings from the area (crowns, wall paintings, the golden mask of "Agamemnon", and others) are hosted in the Archaeological Museum of Athens. The tour also visits the ancient theater of Epidaurus, famous for its outstanding acoustics and host to excellent performances during the summer. Mycenae and Epidaurus are located approximately 2 hours driving time from Athens.

DELPHI

Duration: 7:30-19:00

Daily

Cost per person: 95 €

Includes entrance fees to the Delphi archaeological site and museum, experienced English-speaking guide, transfer to and from hotels in A/C coaches, visit to Arachova, lunch at local restaurant (beverages not included).



The archaeological site of Delphi is located in Phocis province on a plateau on the slope of Mount Parnassus. The ancient Greeks called Delphi «the omphalos (i.e. navel) of the Earth», and this was designated by a large, round, conical stone. Delphi is best-known for the oracle at the sanctuary of Apollo, a major temple of the god of prophecy and patron of philosophy and the arts. Today Delphi is a charming village with spectacular scenery and the ancient remains within the boundaries of the modern town.

“SEA VOYAGE”: CRUISE TO THE ARGOSARONIC GULF

Duration: 7:30-19:00

Daily

Cost per person: 79 €

Includes experienced English-speaking tour guide on board, transfer to and from hotels in A/C coaches, lunch on board (beverages not included), taxes.



Hydra: A contemporary "paradise", free of the noise and pollution of the big cities since motor vehicles are not allowed on Hydra. When entering the harbor of Hydra, you get the feeling of a sweet welcome by the cute tiled houses, which seem to squeeze each other to make their way to the port!

Poros: The island is covered by green land and the trees make their way down to the clean and attractive beaches. The "capital" of the island is a picturesque village with tiled houses. Its landmark is the beautiful municipal clock.

Aegina: The biggest island of the Saronic Gulf, overgrown with pistachio nut trees and pines. The island is blessed with 3000 years of history, beautiful landscapes and golden beaches.

OPENING

Monday
8:45 -9:00

Olympia

PLENARY LECTURES

Monday
9:00 - 11:00

Olympia

Chair: *Eleni Chatzi*

C 21497 MODELING SEISMIC RESILIENCE ACROSS SCALES: CHALLENGES, OPPORTUNITIES, AND THE ROLE OF MACHINE LEARNING

Jamie E. Padgett, Raul Rincon

U 20045 A COMPREHENSIVE LIBRARY FOR UNCERTAINTY QUANTIFICATION IN NEURAL DIFFERENTIAL EQUATIONS AND OPERATORS

Zongren Zou, Xuhui Meng, Apostolos F Psaros, Ling Guo, George Em Karniadakis

C 22647 FIRST ORDER CONSERVATION LAW FORMULATIONS IN SOLID DYNAMICS: APPLICATIONS TO DYNAMIC CRACK PROPAGATION, CONTACT MECHANICS AND STABLE SPH DISCRETIZATIONS

Javier Bonet, Antonio J. Gil, Chun Hean Lee

11:00-11:30
Coffee Break

DAY 1

MONDAY 12 JUNE

COMPdyn MS 19 - I
RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS

Monday
11:30 - 13:30

Olympia

MS Organizers: *Daniela Addessi, Michele Betti, Nicola Cavalagli, Francesco Clementi, Antonio Formisano, Gabriele Milani*

Chair: *Antonio Formisano*

C 21229 STATICALLY ADMISSIBLE SHELL INTERNAL FORCES FOR THE STABILITY ANALYSIS OF THE DOME OF PISA CATHEDRAL LOADED BY VERTICAL AND HORIZONTAL LOADS
Francesco Barsi, Riccardo Barsotti, Stefano Bennati

C 21030 MULTI-SCALE TOPOLOGY OPTIMIZATION FOR INNOVATIVE 3D-PRINTED WALLS AND SHELL STRUCTURES
Andrea Chiozzi, Andrea Nale

C 20476 DYNAMIC RESPONSE OF MASONRY PANELS BASED ON A MODIFIED BOUC-WEN HYSTERESIS WITH STRENGTH AND STIFFNESS DEGRADATION
Alessandra Paoloni, Domenico Liberatore, Daniela Addessi

C 20190 APPLICATION OF A GENERAL PURPOSE DISTINCT ELEMENT MODEL (DEM) FOR THE SEISMIC VULNERABILITY PREDICTION OF MASONRY AGGREGATES
Peixuan Wang, Gabriele Milani

C 21235 MODELLING THE IN-PLANE BEHAVIOUR OF MASONRY FAÇADES VIA A MULTI-UNIT DISCRETIZATION WITH SIMPLIFIED INTERFACE LAYOUT
Ylenia Di Lallo, Davide Rapone, Maria Giovanna Masciotta, Giuseppe Brando

C 20637 SEISMIC RESPONSE OF HISTORICAL MASONRY CHURCHES: THE CASE OF THE BANAT ROMANIAN REGION
Anna Lo Monaco, Nicola Grillanda, Iasmina Onescu, Mihai Fofiu, Francesco Clementi, Michele D'Amato, Antonio Formisano, Gabriele Milani, Marius Mosoarca

UNCECOMP MS 6 - I
SURROGATE MODELLING AND DATA-DRIVEN APPROACHES FOR UNCERTAINTY QUANTIFICATION

Monday
11:30 - 13:30

Attica

MS Organizers: *Jean-Marc Bourinet, Michael Shields, Bruno Sudret, Alexandros Taflanidis*

Chair: *Jean-Marc Bourinet*

U 19600 SEQUENTIAL ADAPTIVE DESIGN FOR EMULATING COSTLY COMPUTER CODES
Hossein Mohammadi, Peter Challenor

U 19558 ADAPTIVE STRATEGIES FOR THE CONSTRUCTION OF KERNEL-BASED SURROGATE MODELS VERIFYING LINEAR CONSTRAINTS
Guillaume Perrin

U 19693 SENSITIVITY ANALYSIS ON (EXCURSION) SETS
Noé Fellmann, Celine Helbert, Christophette Blanchet, Adrien Spagnol, Delphine Sinoquet

U 19716 A DATA-DRIVEN SURROGATE MODEL FOR THE UNCERTAINTY QUANTIFICATION OF DYNAMICAL SYSTEMS
Styfen Schär, Stefano Marelli, Bruno Sudret

U 19757 AN ACTIVE LEARNING APPROACH USING RATIONAL FUNCTION APPROXIMATIONS FOR MAXIMUM A-POSTERIORI ESTIMATION

Felix Schneider, Iason Papaioannou, Bruno Sudret, Gerhard Müller

UNCECOMP TS 17 - I
UNCERTAINTY QUANTIFICATION

Monday
11:30 - 13:30

Templars

Chair: *Petrie Meyer*

U 19647 ROBUST ENSEMBLE OF COMPUTATIONAL TECHNIQUES FOR THE DETECTION OF OUTLIERS IN THE INVERSE UNCERTAINTY QUANTIFICATION WITH LIMITED DATA

Nicola Pedroni

U 19789 EXPERIMENTAL INVESTIGATION OF HYSTERESIS BEHAVIOUR OF A BOLTED FLANGE SYSTEM

Nidhal Jamia, Matthew S. Bonney, Javad Taghipour, Hassan Jalali, Michael I. Friswell, Hamed Haddad Khodaparast, Hamed Farokhi

U 19618 QUANTIFYING UNCERTAINTIES IN NUMERICAL PREDICTIONS OF DYNAMIC CAVITATION

Erdinç Kara, Artur K. Lidtke, Bulent Duz, Douwe Rijpkema, O. Kemal Kinaci

U 19653 APPROXIMATE BAYESIAN MODAL ANALYSIS WITH PARTICLE-SWARM PROPOSALS

Max Champneys, Timothy Rogers

U 19915 AN HP-ADAPTIVE MULTI-ELEMENT STOCHASTIC COLLOCATION METHOD FOR SURROGATE MODELING AND UNCERTAINTY QUANTIFICATION

Armin Galetzka, Dimitrios Loukrezis, Niklas Georg, Herbert De Gersem, Ulrich Römer

U 20007 CHANGE DETECTABILITY IN BAYESIAN SETTING

Francesca Marsili, Filippo Landi, Sylvia Keßler

U 19657 ON THE CUMULATIVE DISTRIBUTION FUNCTION OF OUTPUT RANDOM VARIABLES IN THE STUDY OF DYNAMIC SYSTEMS

Massimiliano Lucchesi, Barbara Pintucchi, Nicola Zani

DAY 1

MONDAY 12 JUNE

COMPDYN TS 14 - I NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS

Monday
11:30 - 13:30

Kallirhoe 1

Chair: *Aikaterini Genikomsou*

-
- C 20143** **KEYNOTE:** FEA-VR SYSTEM FOR IN-DOOR NON-STRUCTURAL COMPONENTS UNDER SEISMIC EXCITATIONS
Daigoro Isobe, Masaki Koyano, Yang Quanyi, Yan Meng
- C 21028** RAILWAY TRACK STRUCTURAL DYNAMICS VIA PERIODIC APPROACHES
Angie Lamprea-Pineda, Alexandre Castanheira-Pinto, Pedro Alves Costa, Peter Woodward, Mohammed Hussein, David Connolly
- C 21317** FINITE ELEMENT MODELLING OF SUSPENDED CEILING SYSTEMS BASED ON EXTENSIVE COMPONENT TESTING AND MODEL EVALUATION VIA SHAKING TABLE TESTS: POP RIVET AND SEISMIC CLIP PERIMETER CONNECTIONS
Shakhzod Takhirov, Yelena Straight
- C 20096** A NEW MULTISCALE STEEL-CONCRETE BOND MODEL FOR STRUCTURAL DYNAMICS APPLICATIONS
Maryam Trad, Ibrahim Bitar, Stéphane Grange, Benjamin Richard
- C 21095** A NOVEL FINITE ELEMENT FORMULATION FOR THE DYNAMIC ANALYSIS OF DAMPED EULER-BERNOULLI BEAMS UNDER MOVING LOADS
Hugo Santos

COMPDYN MS 12 - I ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN DESIGN AND ASSESSMENT OF STRUCTURES

Monday
11:30 - 13:30

Kallirhoe 2

MS Organizers: *George Markou, Nikolaos P. Bakas, Vagelis Harmandaris*

Chair: *Serena Cattari*

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- C 20792** **KEYNOTE:** DEVELOPING AN ARTIFICIAL NEURAL NETWORK MODEL THAT PREDICTS THE FUNDAMENTAL PERIOD OF STEEL STRUCTURES USING A LARGE DATASET
Ashley Megan van der Westhuizen, Nikolaos Bakas, George Markou
- C 21195** DERIVING COARSE-GRAINED MODELS OF MOLECULAR SYSTEMS BY APPROXIMATING THE FREE ENERGY SURFACE WITH MACHINE LEARNING ALGORITHMS
Nikolaos Bakas, Antonis Chazirakis, Eleftherios Christofi, Vangelis Harmandaris
- C 20611** DEVELOPMENT OF FORMULAE FOR THE SECTION ROTATIONS DUE TO BENDING OF CURVED STEEL I-BEAMS THROUGH AI AND ML ALGORITHMS
Victor Chibaya, George Markou, Nikolaos Bakas
- C 20866** SMART METHOD RECOMMENDATIONS FOR THE DETECTION OF POST-EARTHQUAKE DAMAGES IN RC BUILDINGS
Gamze Doğan, Musa Hakan Arslan, Alper Ilki
- C 20481** SURROGATE MODELING OF THE RESPONSE OF A BEARING DEVICE FOR PASSIVE SEISMIC ISOLATION
Todor Zhelyazov

**COMPdyn MS 4
ISOGEOMETRIC AND OTHER ADVANCED DISCRETIZATION METHODS
FOR STRUCTURAL DYNAMICS AND TRANSIENT PROBLEMS**

Monday
11:30 - 13:30

Abbey

MS Organizers: *Thomas JR Hughes, Alessandro Reali, Simone Morganti*

Chair: *Alessandro Reali*

C 20723 AN ENERGY-MOMENTUM STABLE PREDICTOR-MULTICORRECTOR EXPLICIT TIME-INTEGRATOR FOR FINITE-STRAIN DYNAMICS

Pouria Behnoudfar, Victor Calo, Nicolas Labanda

C 20529 GHOST MASS AT TRIMMED PATCHES IN ISOGEOMETRIC ANALYSIS FOR EXPLICIT DYNAMICS

Stein K. F. Stoter, Sai C. Divi, Frits de Prenter, Clemens V. Verhoosel, E. Harald van Brummelen

C 20546 A STUDY ON TRANSVERSE SHEAR PARAMETRIZATION IN NON-LINEAR ISOGEOMETRIC HIERARCHIC SHELLS FOR TRANSIENT PROBLEMS

Rebecca Thierer, Bastian Oesterle, Manfred Bischoff

C 20559 THE CONCEPT OF INTRINSICALLY SELECTIVE MASS SCALING EXEMPLIFIED FOR HIERARCHIC PLATE FORMULATIONS

Lisa-Marie Krauß, Rebecca Thierer, Anton Tkachuk, Manfred Bischoff, Bastian Oesterle

C 20636 ON THE APPLICATION OF MASS LUMPING TO IGA FORMULATIONS IN EXPLICIT DYNAMICS

Susanne Held, Wolfgang Dornisch, Sascha Eisenträger

C 21230 AN ISOGEOMETRIC ANALYSIS-BASED FORMULATION FOR THE FULLY EXPLICIT DYNAMICS OF GEOMETRICALLY EXACT BEAMS

Enzo Marino, Giulio Ferri

**COMPdyn MS 20 - I
ADVANCED NUMERICAL METHODS IN DYNAMICS, COMPUTATIONAL
INTERFACE MECHANICS AND COUPLED PROBLEMS**

Monday
11:30 - 13:30

Ground

MS Organizers: *Jose Gonzalez, Jin-Gyun Kim, Radek Kolman, K.C. Park*

Chair: *Jose Gonzalez*

C 21414 **KEYNOTE:** NOVEL DISPLACEMENT-BASED PARTITIONED EQUATIONS OF MOTION FOR STRUCTURES
K. C. Park

C 21328 PERISALTIC DRIVEN FLOWS IN PIEZOELECTRIC POROUS DYNAMIC METAMATERIALS - HOMOGENIZATION BASED MODELLING

Eduard Rohan, Vladimír Lukeš

C 21374 SENSING OF DYNAMIC STRUCTURAL RESPONSES BY PIEZO-ELECTRIC ELEMENTS: MODELLING AND EXPERIMENTAL STUDIES

Radek Kolman, Jaromír Kylar, Vojtěch Kotek, Robert Cimrman, Ladislav Musil, Jakub Malínek, Martin Marek

C 20104 INVERSE FORCE IDENTIFICATION OF VIBRO-ACOUSTIC SYSTEM USING HYBRID STRONGLY-COUPLED MODEL REDUCTION TECHNIQUE

Hyeonah Shin, Seungjin Oh, Jihyun Jun, Byunyoung Chung, Jin-Gyun Kim

C 20384 A STUDY OF CONTACT-IMPACT PROBLEMS WITH A NEW BI-PENALTY FORMULATION

Yun-Jae Kwon, S.S. Cho, Radek Kolman, K.C. Park, Jin-Gyun Kim

DAY 1

MONDAY 12 JUNE

C 20662 FINITE ELEMENT TECHNOLOGY-BASED SELECTIVE MASS SCALING FOR SHEAR DEFORMABLE STRUCTURAL ELEMENT FORMULATIONS

Bastian Oesterle, Anton Tkachuk, Manfred Bischoff

COMPdyn MS 34
INSIGHTS AND DEVELOPMENTS IN DYNAMIC SOIL-FOUNDATION-
STRUCTURE INTERACTION

Monday
11:30 - 13:30

Room 1A

MS Organizers: *Maria Iovino, Raffaele Di Laora, Emmanouil Rovithis*

Chair: *Emmanouil Rovithis*

C 20812 **KEYNOTE:** THREE DIMENSIONAL, THREE COMPONENT SEISMIC WAVE FIELD RECONSTRUCTION FROM LIMITED SURFACE MEASUREMENTS

Boris Jeremic, Han Yang

C 20173 SOIL-FOUNDATION-STRUCTURE PROBLEMS RELATED TO TRAIN-INDUCED VIBRATIONS – THE KINEMATIC INTERACTION OF TUNNEL EXCITED PILE FOUNDATIONS AND THE INERTIAL INTERACTION OF HIGH-RISE BUILDINGS

Lutz Auersch

C 21454 ASSESSMENT OF MACRO-ELEMENTS IN THE PREDICTION OF THE RESPONSE OF OFFSHORE WIND TURBINES

Olgu Orakci, Nunzia Letizia, Stijn François, Shiao Huey Chow, Yinghui Tian, George Anoyatis

C 20763 FILTERING EFFECT FOR A PILE IN TWO-LAYER SOIL

Raffaele Cesaro, Raffaele Di Laora

C 20582 A PHYSICS INFORMED NEURAL NETWORK (PINN) APPROACH FOR SOIL-PILE INTERACTION

Michail Madianos, Panagiotis Lykourgias, Dimitrios Loupas, Maria Papanikolaou, Stijn François, George Anoyatis, Aggelos Tsikas

C 20828 ON THE SSI PERIOD AND DAMPING FOR BRIDGE PIERS ON CAISSON FOUNDATIONS

Riccardo Conti, Emmanouil Rovithis, Raffaele Di Laora

C 20568 NUMERICAL BACK-ANALYSIS OF DYNAMIC CENTRIFUGE TESTS ON THE SEISMIC BEHAVIOUR OF CAISSON FOUNDATIONS SUPPORTING BRIDGE PIERS

Domenico Gaudio, Fabrizio Murillo

C 21962 DIMENSIONLESS FACTORS GOVERNING THE LATERAL DISCONNECTION EFFECTIVENESS

Fausto Somma, Alessandro Flora

COMPDYN MS 8 - I
RECENT ADVANCES AND CHALLENGES IN GEOTECHNICAL
EARTHQUAKE ENGINEERING

Monday
11:30 - 13:30

Room 1B

MS Organizers: *Castorina Silva Vieira, Yiannis Tsompanakis*

Chair: *Nikolaos Makrakis*

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- C 20773** OFFSHORE LIFELINES UNDER THE GEOHAZARD OF SEISMIC FAULT RUPTURE PROPAGATION THROUGH SEABED SEDIMENTS
Nikolaos Makrakis, Yiannis Tsompanakis, Prodromos N. Psarropoulos
- C 20506** MATERIAL POINT METHOD AND FINITE DIFFERENCES FOR THERMO-HYDRO-MECHANICAL MODELLING OF GEOTECHNICAL STRUCTURES
Francisco Zabala
- C 20749** GEOTECHNICAL CONSIDERATIONS AND VIBRATION RESPONSE DURING ROTARY PILING FOR CONSTRUCTING BRIDGES
Rajeev Kumar Garg, Seema Garg, Ganesh Kumar Sahu, Jitendra Goyal, K.N. Ghosh
- C 21513** SEMI-ANALYTICAL SOLUTIONS FOR EVALUATING THE FIM FOR PILE FOUNDATIONS
Stefano Stacul, Nunziante Squeglia
- C 21275** PREDICAMENT OF THE 1D ASSUMPTION IN SITE RESPONSE ANALYSIS AND IMPLICATION ON VERTICAL GROUND MOTION ASSESSMENT
Junfei Huang, David McCallen

COMPDYN MS 28 - I
MONITORING, DAMAGE MODELLING AND SOIL-STRUCTURE-
INTERACTION IN CULTURAL HERITAGE CONSTRUCTIONS

Monday
11:30 - 13:30

Room 2A

MS Organizers: *Giuseppe Maddaloni, Stefania Sica, Antonino Iannuzzo, Michela Monaco*

Chair: *Stefania Sica*

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- C 21345** 3D EXPLORATION OF INTERNAL STRESSES DUE TO LATERAL LOADS AND FOUNDATION MOVEMENTS IN A SEMICIRCULAR ARCH
Antonino Iannuzzo, Antonio Gesualdo, Carlo Olivieri, Andrea Montanino
- C 20462** NUMERICAL AND OPERATIONAL MODAL ANALYSES OF A MASONRY BELL-TOWER INSERTED IN A BUILDING AGGREGATE
Alessandra De Angelis, Giuseppe Maddaloni, Maria Rosaria Pecce
- C 20860** THE ROLE OF UNDERGROUND ARCHAEOLOGICAL REMAINS ON THE SEISMIC RESPONSE OF A HISTORIC SITE
Antonella Ambrosino, Enza Zeolla, Alessandra De Angelis, Stefania Sica
- C 21247** A NOVEL FE MODEL FOR THE LEANING TOWER OF PISA
Dionis Butuc, Anna De Falco, Carlo Resta, Nunziante Squeglia, Laura Vignali
- C 21347** APPLICATION OF THE CONTINUOUS AIRY-BASED FOR STRESS SINGULARITIES (CASS) TO THE LOAD BEARING CAPACITY OF MASONRY STRUCTURES UNDER SEISMIC LOADS
Andrea Montanino, Francesca Linda Perelli, Daniela De Gregorio, Giulio Zuccaro
- C 21023** EVALUATION OF THE SEISMIC STABILITY OF UNDERGROUND CAVITIES IN NAPLES
Filomena de Silva, Stefania Fabozzi, Emilio Bilotta, Alessandro Flora

DAY 1

MONDAY 12 JUNE

C 20583 THE DOME OF THE SAN FRANCESCO DI PAOLA BASIL: A REAL GEOMETRY BASED ASSESSMENT
Claudia Cennamo, Conceta Cusano, Arsenio Cutolo, Federico Guarracino, Ida Mascolo

UNCECOMP MS 18
ADVANCED MONTE-CARLO METHODS FOR UNCERTAINTY
QUANTIFICATION AND OPTIMIZATION OF CIVIL INFRASTRUCTURE

Monday
11:30 - 13:30

Room 2B

MS Organizers: *Matt DeJong, Ziqi Wang, Jinyan Zhao, Sanjay Govindjee*
Chair: *Vissarion Papadopoulos*

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- U 19824** APPLICATION OF MULTI-FIDELITY AND RANDOMIZED QUASI-MONTE CARLO METHODS IN THE PROBABILISTIC ASSESSMENT OF EXCAVATION-INDUCED BUILDING DAMAGES
Jinyan Zhao, Matthew DeJong
- U 19749** APPLICATION OF PROBABILISTIC LEARNING ON MANIFOLDS FOR SURROGATE MODELING OF STRUCTURAL EARTHQUAKE RESPONSE
Kuanshi Zhong, Javier Navarro, Sanjay Govindjee, Gregory Deierlein
- U 19723** RELIABILITY-BASED OPTIMIZATION OF ENGINEERING SYSTEMS BY THE CROSS-ENTROPY METHOD
Oindrila Kanjilal, Iason Papaioannou, Daniel Straub
- U 19946** DATA-DRIVEN RELIABILITY OPTIMISATION OF (INFRA)STRUCTURE SYSTEMS USING BUFFERED FAILURE PROBABILITY
Ji-Eun Byun, Johannes Royset
- U 19912** EFFICIENT IMPORTANCE SAMPLING VIA STOCHASTIC OPTIMAL CONTROL FOR STOCHASTIC REACTION NETWORKS
Sophia Wiechert, Chiheb Ben Hammouda, Nadhir Ben Rached, Raúl Tempone
- U 19965** RELAXATION-BASED IMPORTANCE SAMPLING FOR RARE EVENT PROBABILITY ESTIMATION
Jianhua Xian, Ziqi Wang

UNCECOMP MS 21
INVERSE ANALYSIS FOR LARGE-SCALE, COMPUTATIONALLY
DEMANDING PROBLEMS IN HIGH-(STOCHASTIC) DIMENSIONS

Monday
11:30 - 13:30

Room 3A

MS Organizers: *Wolfgang A. Wall, Phaedon-Stelios Koutsourelakis*
Chair: *George Stefanou*

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- U 20011** **KEYNOTE:** INVERSE ANALYSIS BONUS OPTION VIA MULTIPHYSICS MODELING
Wolfgang A. Wall, Jonas Nitzler, Gil Robalo Rei, Maximilian Dinkel
- U 19999** AUTO-ENCODING VARIATIONAL NEURAL OPERATORS FOR INVERSE PROBLEMS WITH FUNCTIONAL DATA
Jacob Seidman, Georgios Kissas, George Pappas, Paris Perdikaris
- U 20004** PROBABILITY, EVIDENCE, UNCERTAINTY AND TRUSTWORTHINESS OF POLYNOMIAL CHAOS AND GAUSSIAN PROCESS SURROGATES
Sascha Ranftl, Wolfgang von der Linden

- U 19917** EFFICIENT HIGH-DIMENSIONAL BAYESIAN MULTI-FIDELITY INVERSE ANALYSIS FOR EXPENSIVE LEGACY SOLVERS
Jonas Nitzler, Wolfgang A. Wall, Phaedon-Stelios Koutsourelakis
- U 19919** AN APPROACH FOR SOLVING INVERSE PROBLEMS USING CONSTRAINED GAUSSIAN PROCESSES
Maximilian Dinkel, Carolin M. Geitner, Wolfgang A. Wall
- U 19623** MULTILEVEL BAYESIAN INFERENCE GIVEN SUMMARY STATISTICS, HIGH-DIMENSIONAL INPUTS, AND EXPENSIVE MODELS
Pieterjan Robbe, Luc Bonnet, Tiernan Casey, Khachik Sargsyan, Habib Najm

**COMPdyn MS 37 - I
DESIGN OF STRUCTURES UNDER EXTREME LOADS**

Monday
11:30 - 13:30

Room 3B

MS Organizers: *Marco Simoncelli, Flavio Stochino, Marco Zucca*

Chair: *Flavio Stochino*

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- C 20209** EVALUATION OF MAINTENANCES INTERVENTION PERIOD ON STOCK OF EXISTING RC BRIDGES SUBJECT TO DAMAGE PHENOMENA
Marco Zucca, Pietro Crespi, Flavio Stochino, Mario Lucio Puppio, Fausto Mistretta, Nicola Longarini, Mauro Sassu
- C 20123** EQUIVALENT DAMPING RATIO EVALUATION FOR HISTORICAL CHURCH REINFORCED BY CROSS LAM ROOF STRUCTURE FOR IMPROVING THE SEISMIC RESPONSE
Nicola Longarini, Pietro Crespi, Marco Zucca
- C 20674** THE INFLUENCE OF DAMPING ON PROGRESSIVE COLLAPSE ANALYSIS
Alex Sixie Cao, Andrea Frangi
- C 20972** FRAGILITY CURVES FOR STEEL INDUSTRIAL SILOS ACCOUNTING FOR FILLING LEVEL OF GRANULAR-LIKE MATERIAL
Mohammad Khalil, Sergio Ruggieri, Vito Tateo, Giuseppina Uva
- C 20469** A NUMERICAL STUDY ON FIRE RESISTANCE OF BLAST DAMAGED REINFORCED CONCRETE COLUMNS
Ravi Mudragada, Ankit Agrawal, Pradeep Bhargava

DAY 1

MONDAY 12 JUNE

COMPdyn MS 45 - I STRUCTURAL DYNAMICS, SEISMIC SAFETY AND RISK ASSESSMENT OF SPECIAL STRUCTURES

Monday
11:30 - 13:30

Room 4A

MS Organizers: *Rui Carneiro Barros, Manuel Braz-César*

Chair: *Rui Carneiro Barros*

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- C 21431** SEISMIC SAFETY ASSESSMENT AND REINFORCEMENT OF AN OLD R/C FIRE STATION IN PORTO
Maria M.F.C Leite, Rui Carneiro de Barros
- C 21430** SEISMIC COLLAPSE RISK OF A ISOLATED TRANSMISSION TOWER AND A TRANSMISSION LINE SYSTEM IN NORTHERN PORTUGAL
Fabio M. Paiva, Rui Carneiro de Barros
- C 20471** EXPERIMENTAL AND NUMERICAL DYNAMIC EVALUATION OF PROFILED STEEL DECKING SLAB IN A CONTAINER HOUSE USING MEMS
Henrique Tavares Lima, Luis Ernesto de Medeiros Alas, Mateus Narcizo de Almeida Nunes, Iálysson da Silva Medeiros, Douglas Mateus de Lima
- C 20816** MACHINE LEARNING APPROACH FOR PREDICTING FLEXURAL BEHAVIOR VARIATIONS OF I-SHAPED STEEL BEAMS DUE TO MANUFACTURING TOLERANCES
Cyrus Eshaghi, Arefeh Mazarei, Rui Carneiro de Barros, Xavier Romão, José Miguel Castro
- C 20832** RESPONSE OF A SMALL WIND TURBINE TOWER UNDER EARTHQUAKE
Anelise Dick, Rui Carneiro de Barros, Manuel Braz-César
- C 20833** COMPARATIVE STUDY OF OPTIMUM FORMULATIONS FOR TUNED MASS DAMPERS IN SMALL WIND TURBINE TOWERS
Anelise Dick, Rui Carneiro de Barros, Manuel Braz-César

COMPdyn MS 30 THE ASSESSMENT OF RESILIENCE WITH APPROACHES BASED ON NUMERICAL SIMULATIONS

Monday
11:30 - 13:30

Room 4B

MS Organizer: *Davide Forcellini*

Chair: *Davide Forcellini*

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- C 21044** 3D NUMERICAL SIMULATIONS OF MULTI-LAYERED ELASTOMERIC BEARINGS (EB) SUBJECTED TO COMBINED VERTICAL AND LONGITUDINAL LOADS
Davide Forcellini, Kostantinos Kalfas
- C 20913** SAFE DESIGN OF SUBSEA PIPELINES TO COMBINED SEISMIC AND THERMAL LOADING
Daniele Mina, Hassan Karampour, Davide Forcellini
- C 20946** SEISMIC POUNDING OF TYPICAL REINFORCED CONCRETE BUILDINGS SUBJECT TO SOIL STRUCTURE INTERACTION EFFECTS
İbrahim Öz, Kaan Kaatsiz
- C 21299** EFFECT OF NON-LINEAR SOIL STRUCTURE INTERACTION IN SEISMIC RESPONSE OF ASYMMETRIC STRUCTURES
Vivek Balachandra Kartha, Raj Mukeshbhai Patel
- C 20955** EXPERIMENTAL TESTING OF INNOVATIVE, BIOMIMETIC SEISMIC METAISOLATORS
Valentina Adinolfi, Saeedh Qaderi, Giovanni Germano, Julia de Castro Motta, Gianmario Benzoni, Ada Amendola, Massimo Ruzzene, Fernando Fraternali

C 21160 THE VULNERABILITY OF HIGHLY POPULATED BUILDINGS IN THE FACE OF EARTHQUAKE AND TSUNAMI HAZARDS

Behnam Beheshtian, Javad Hashemi, Hing-Ho Tsang

C 20485 SUPPLEMENTARY DAMPING DEVICES TO MITIGATE THE NEAR-FAULT SEISMIC EFFECTS ON THE UFREI-ISOLATED STRUCTURES

Shiv Prakash, Radhey Shyam Jangid

13:30-14:30

Lunch Break

DAY 1

MONDAY 12 JUNE

COMPdyn MS 19 - II RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS

Monday
14:30 - 16:30

Olympia

MS Organizers: *Daniela Addessi, Michele Betti, Nicola Cavalagli, Francesco Clementi, Antonio Formisano, Gabriele Milani*

Chair: *Francesco Clementi*

C 20324 **KEYNOTE:** MECHANICAL-BASED SEISMIC FRAGILITY ASSESSMENT AND RETROFIT INTERVENTION OF CLUSTERED BUILDINGS

Giovanna Longobardi, Antonio Formisano

C 20331 DYNAMIC FEATURES FOR THE SEISMIC DESIGN OF GEO-SOURCED MASONRY BUILDINGS

Noura Zarzour, Maria Paola Santisi d'Avila, Diego Mercerat, Luca Lenti, Michel Oggero

C 20638 LONG-TERM MONITORING OF A MASONRY TOWER WITH WIRELESS ACCELEROMETERS

Giacomo Zini, Francesca Marafini, Silvia Monchetti, Michele Betti, Luca Facchini, Gianni Bartoli, Maria Girardi, Gianmarco Gurioli, Cristina Padovani, Daniele Pellegrini

C 20725 GENERATIVE MODELLING AND SEISMIC ASSESSMENT OF ANCIENT TEMPLES: THE TEMPLE OF VESTA (TIVOLI)

Annalaura Vuoto, Marco Francesco Funari, Shaghayegh Karimzadeh, Paulo B. Lourenço

C 20819 MODELLING OF DISSIPATIVE MECHANISMS FOR MASONRY-LIKE MATERIALS UNDER CYCLIC LOADING

Héloïse Rostagni, Cédric Giry, Frédéric Ragueneau

C 20744 NONLINEAR BEHAVIOR OF EXISTING MASONRY STRUCTURES: AN APPLICATION TO A CASE STUDY WITH DIFFERENT STRUCTURAL CONFIGURATIONS

Roselena Sulla, Michele D'Amato, Rosario Gigliotti, Domenico Liberatore

UNCECOMP MS 6 - II SURROGATE MODELLING AND DATA-DRIVEN APPROACHES FOR UNCERTAINTY QUANTIFICATION

Monday
14:30 - 16:30

Attica

MS Organizers: *Jean-Marc Bourinet, Michael Shields, Bruno Sudret, Alexandros Taflanidis*

Chair: *Michael Shields*

U 19858 LOCALIZED APPROXIMATIONS BY POLYNOMIAL CHAOS EXPANSIONS FOR HIGHLY NON-LINEAR FUNCTIONS

Lukáš Novák, Michael Shields, Václav Sadílek, Miroslav Vořechovský

U 19834 SURROGATE MODELS FOR REAL-TIME INTERACTIVE TUNNEL ALIGNMENT DESIGN WITH UNCERTAIN DATA

Ba Trung Cao, Yaman Zendaki, Steffen Freitag, Günther Meschke

U 19599 MULTI-FIDELITY SEQUENTIAL BAYESIAN OPTIMIZATION AND RELIABILITY ASSESSMENT METHOD FOR THE DESIGN OF COMPLEX SYSTEMS

Romain Espoey, Loïc Brevault, Mathieu Balesdent, Sophie Ricci, Paul Mycek

U 19747 RECOVERING HIDDEN CONSTRAINED SUBSETS BY A GAUSSIAN PROCESS CLASSIFIER ACTIVE LEARNING METHOD BASED ON THE STEPWISE UNCERTAINTY REDUCTION STRATEGY

Morgane Menz, Miguel Munoz-Zunigo, Delphine Sinoquet

U 19748 SURROGATE-BASED BAYESIAN INVERSE MODELLING TO CHARACTERIZE AQUIFER PROPERTIES IN A SUBSIDING BASIN

Yueting Li, Claudia Zoccarato, Lorenzo Tamellini, Chiara Piazzola, Pablo Ezquerro, Guadalupe Bru, Carolina Guardiola-Albert, Roberta Boni, Pietro Teatini

U 20005 SURROGATE-AIDED BAYESIAN POSTERIOR SAMPLING

Aakash Bangalore Satish, Sang-ri Yi, Alexandros Taflanidis

UNCECOMP TS 17 - II
UNCERTAINTY QUANTIFICATION

Monday
14:30 - 16:30

Templars

Chair: *Nicola Pedroni*

U 19987 YIELD AND SENSITIVITY ANALYSIS OF MULTI-ELEMENT ANTENNA ARRAYS USING THE NON-LINEAR PARTIAL LEAST-SQUARES POLYNOMIAL CHAOS EXPANSION TECHNIQUE

Ketshabile Nfanyana, Leanne Johnson, Petrie Meyer

U 19925 FLUID-STRUCTURE INTERACTIONS IN STRUCTURAL UPDATING: A SIMPLIFIED APPROACH FOR LTI SYSTEMS

Quentin Dollon

U 19823 PROBABILISTIC MODELING AND IDENTIFICATION OF INTERCORRELATED BOUNDED RANDOM FIELDS: APPLICATION TO LINEAR ELASTIC STRUTS AND FIBERS

Hussein Rappel, Mark Girolami, Lars Beex

U 19663 BAYESIAN SOURCE IDENTIFICATION OF URBAN-SCALE AIR POLLUTION FROM POINT AND FIELD CONCENTRATION MEASUREMENTS

Elissar Al Awar, Samah El Mohtar, Mohamad Abed El Rahman Hammoud, Issam Lakkis, Abdulilah K. Alduwais, Ibrahim Hoteit

U 19677 EFFICIENT ESTIMATION OF MULTIPLE EXPECTATIONS WITH THE SAME SAMPLE BY ADAPTIVE IMPORTANCE SAMPLING AND CONTROL VARIATES

Julien Demange-Chryst, François Bachoc, Jérôme Morio

U 20026 ARTIFICIAL INTELLIGENCE-BASED UNCERTAINTY QUALIFICATION OF THE MECHANICAL PROPERTIES OF SUSTAINABLE CONCRETE SPECIMENS

Atefeh Soleymani, Hashem Jahangir, Denise-Penelope N. Kontoni, Mina Naseri Nasab

DAY 1

MONDAY 12 JUNE

COMPdyn TS 14 - II NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS

Monday
14:30 - 16:30

Kallirhoe 1

Chair: *Daigoro Isobe*

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- C 20592** ML-BASED PUNCHING STRENGTH ESTIMATIONS OF FLAT SLABS WITHOUT TRANSVERSE REINFORCEMENT UNDER LATERAL LOADING
Hadi Panahi, Aikaterini Genikomsou
- C 20279** WAVE FINITE ELEMENT METHOD FOR THE DYNAMICS OF STRUCTURES WITH CYCLIC SYMMETRY
Tien Hoang, Denis Duhamel, Gilles Foret, Le-Hung Tran
- C 20344** COMPUTATION OF THE RESPONSE OF DAMAGED RAILWAY TRACKS SUBJECTED TO CONSTANT MOVING LOADS: NUMERICAL RESULTS OBTAINED WITH THE WAVE FINITE ELEMENT METHOD AND AN ANALYTICAL RESULTS
Benjamin Claudet, Denis Duhamel, Gilles Foret, Tien Hoang, Francis Sabatier, Bertrand Findinier, Hervé Lenglin
- C 20734** TOWARDS A MODEL-ORDER REDUCTION STRATEGY FOR PARAMETRIC STUDIES OF NONLINEAR DYNAMICS PROBLEMS
Alexandre Daby-Seesaram, Amélie Fau, Pierre-Étienne Charbonnel, David Néron
- C 21236** EXPLORATION OF DYNAMIC LOADING STRUCTURAL TOPOLOGY OPTIMIZATION AND APPLICATION TO BUILDING LATERAL LOAD RESISTING FRAME
Arya Prakash Padhi, Vaibhav Bhandari, Anupam Chakrabarti, Rajib Chowdhury

COMPdyn MS 12 - II ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN DESIGN AND ASSESSMENT OF STRUCTURES

Monday
14:30 - 16:30

Kallirhoe 2

MS Organizers: *George Markou, Nikolaos P. Bakas, Vagelis Harmandaris*

Chair: *George Markou*

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- C 21297** A BIBLIOMETRIC OVERVIEW OF OPEN SCIENCE RESEARCH
Nikolaos Bakas, Andreas Athenodorou, Nana Anastasopoulou, Katerina Kyprianou, George Katsikatsos, George Markou
- C 21197** PREDICTION OF REINFORCED CONCRETE COLUMNS LIMIT STATES USING MACHINE LEARNING ALGORITHM
Anthos I. Ioannou, Nikolaos Bakas, George Markou, Ashley Megan van der Westhuizen, Stavroula J. Pantazopoulou, Michael F. Petrou, Dimos C. Charmpis
- C 20440** EXPLORING A-PRIORI AND A-POSTERIORI MODEL ORDER REDUCTION TO RESOLVE THE DYNAMIC RESPONSE OF SKELETAL STRUCTURES
George Pissas, Savvas Triantafyllou
- C 21192** DEEP NEURAL NETWORKS FOR GENERATING ATOMISTIC CONFIGURATIONS OF MULTI-COMPONENT MACROMOLECULES FROM COARSE-GRAINED MODELS
Eleftherios Christofi, Antonis Chazirakis, Charalambos Chrysostomou, Mihalios A. Nicolaou, Wei Li, Manolis Doxastakis, Vagelis A. Harmandaris
- C 22670** A PROBABILISTIC BASED ADAPTIVE REFINEMENT FOR RELIABILITY ASSESMENT USING KRIGING METAMODEL
Ioannis Prentzas, Michalis Fragiadakis

C 20932 SEISMIC RESPONSE REDUCTION USING AN ACTIVE TUNED MASS DAMPER DRIVEN BY AN ARTIFICIAL NEURAL NETWORK CONTROLLER

Nour Elhouda Ghanemi, Mahdi Abdeddaim, Abdelhafid Ounis

**COMPdyn MS 25 - I
TOWARDS SEISMIC RESILIENCE: STRATEGIES AND TECHNOLOGICAL
INNOVATION FOR SEISMIC RISK REDUCTION OF EXISTING
STRUCTURES**

*Monday
14:30 - 16:30*

Abbey

MS Organizers: *Virginio Quaglino, Paolo Calvi, Tommaso D'Antino, Eleonora Bruschi, Carlo Pettoruso*

Chair: *Tommaso D'Antino*

C 20312 ADVANCED MODELLING AND RISK ANALYSIS OF RC BUILDINGS EQUIPPED WITH ENERGY DISSIPATION DEVICES DESIGNED BY THE ITALIAN SEISMIC CODE

Eleonora Bruschi, Virginio Quaglino, Marco Furinghetti, Alberto Pavese

C 20679 SEISMIC RETROFITTING OF FRAMED STRUCTURES BY DAMPED BRACES CONSIDERING THE OUT-OF-PLANE RESPONSE OF MASONRY INFILLS

Fabio Mazza, Rodolfo Labernarda

C 20998 LOSS-BASED SEISMIC PRIORITISATION OF EXISTING RC GIRDER BRIDGES

Andrea Nettis, Giuseppina Uva

C 20258 OPTIMAL PROPERTIES OF SINGLE CONCAVE FRICTION PENDULUM BEARINGS FOR THE ISOLATION OF BRIDGES SUBJECTED TO FAR FIELD RECORDS

Elena Miceli, Diego Gino, Adolfo Ricioppo, Guglielmo Amendola, Luca Giordano, Paolo Castaldo

C 20152 FRAGILITY FUNCTION UNCERTAINTY QUANTIFICATION IN INFILLED RC FRAME BUILDINGS

Al Mouayed Bellah Nafeh, Gerard J. O'Reilly

C 21010 EFFECT OF CYCLIC LOAD ON THE TENSILE BEHAVIOR OF A PBO FRM COMPOSITE

Angelo Savio Calabrese, Alessandro Cagnoni, Veronica Bertolli, Tommaso D'Antino, Pierluigi Colombi, Carlo Poggi

C 21145 NUMERICAL MODELING OF A NOVEL STEEL-CONCRETE COMPOSITE BEAM-COLUMN JOINT SOLUTION

William Galik, Paolo Calvi

DAY 1

MONDAY 12 JUNE

COMPdyn MS 20 - II ADVANCED NUMERICAL METHODS IN DYNAMICS, COMPUTATIONAL INTERFACE MECHANICS AND COUPLED PROBLEMS

Monday
14:30 - 16:30

Ground

MS Organizers: *Jose Gonzalez, Jin-Gyun Kim, Radek Kolman, K.C. Park*

Chair: *K.C. Park*

- C 20077** **KEYNOTE:** DIRICHLET-TO-NEUMANN COUPLING FOR MIXED-DIMENSIONAL TIME-DEPENDENT WAVE PROBLEMS
Dan Givoli, Daniel Rabinovich
- C 20502** DYNAMIC ANALYSIS OF REINFORCED CONCRETE STRUCTURES MODELED WITH 1D-3D NONMATCHING FINITE ELEMENT MESHES
Francisco García Romero, José A. González, K.C. Park
- C 20965** INFLUENCE OF THE MIDFIELD PROPAGATION CONDITIONS ON ENVIRONMENTAL RAILWAY NOISE
Nhat Quang Ta, Guillaume Puel, Andrea Barbarulo, Ludovic Chamoin, Baldrík Faure
- C 20510** ASYNCHRONOUSLY IN TIME INTEGRATED INTERFACE DYNAMICS PROBLEM WHILE MAINTAINING ZERO INTERFACE ENERGY
Radim Dvořák, Radek Kolman, Ondřej Jiroušek, Jose Angel Gonzalez Perez, K.C. Park
- C 20762** TUNED LIQUID SYSTEMS WITH AN EQUIVALENT MECHANICAL MODEL FOR SLOSHING FLUIDS
Giorgia Goursand-Parente, Bonaventura Tagliaferro, Salvatore Capasso, Alejandro Crespo, Giacomo Viccione, Corrado Altomare, José Domínguez, Iván Martínez-Estévez
- C 20771** FINITE ELEMENT TECHNOLOGY-BASED SELECTIVE MASS SCALING FOR EXPLICIT DYNAMIC ANALYSES OF THIN-WALLED STRUCTURES USING SOLID ELEMENTS
Moritz Hoffmann, Anton Tkachuk, Manfred Bischoff, Bastian Oesterle

COMPdyn MS 32 - I MULTI-HAZARD RISK MANAGEMENT OF THE BUILT ENVIRONMENT: RECENT ADVANCES AND OPEN CHALLENGES

Monday
14:30 - 16:30

Room 1A

MS Organizers: *Serena Cattari, Silvia De Angeli, Carmine Galasso, Xavier Romao*

Chair: *Serena Cattari*

- C 21950** RESILIENCE ASSESSMENT OF ROAD BRIDGES IN MULTI-HAZARD ENVIRONMENT
Olga Markogiannaki, Anna Karatzetzou, Sotiria Stefanidou, Grigorios Tsinidis
- C 20705** MULTI-RISK ASSESSMENT OF A BASE ISOLATED STRUCTURE
Donatella de Silva, Antonio Bilotta, Romeo Tomeo, Emidio Nigro
- C 20623** DEVELOPMENT OF A MULTI-RISK INDEX FOR ITALY: A TOOL FOR SUPPORTING INFORMED DECISION MAKING ON DISASTER RISK REDUCTION
Gabriella Tocchi, Gemma Cremen, Carmine Galasso, Maria Polese
- C 20690** DEFINITION OF MULTI-HAZARD VULNERABILITY INDICATORS FOR CULTURAL HERITAGE BUILDINGS
Marco Lazzati, Silvia De Angeli, Giorgio Boni, Serena Cattari, Xavier Romão
- C 20454** APPLICATION OF HAZARD RISK METHODOLOGY ON HISTORICAL BUILT ENVIRONMENT IN TIMISOARA
Iasmina Onescu, Eugen Onescu, Marius Mosoarca

- C 20619** A MULTI-RISK FRAMEWORK FOR ASSESSING AND RANKING SEISMIC AND FLOOD RISKS: AN APPLICATION IN ITALY-SLOVENIA TRANSBOUNDARY REGION
*Maria Polese, **Gabriella Tocchi**, Matjaz Dolsek, Anze Babič, Marta Faravelli, Barbara Borzi, Nicola Rebora, Daria Ottonelli, Matjaz Mikos, Davide Quaroni, Rocco Masi, Andrea Prota*
- C 20963** A BUILDING CLASSIFICATION SYSTEM FOR MULTI-HAZARD RISK ASSESSMENT OF HISTORICAL RELIGIOUS BUILDINGS
Federica Del Carlo, Silvia Caprili, Tiago Miguel Ferreira, Pere Roca, Marco Uzielli

COMPdyn MS 8 - II
RECENT ADVANCES AND CHALLENGES IN GEOTECHNICAL EARTHQUAKE ENGINEERING

Monday
14:30 - 16:30

Room 1B

MS Organizers: *Castorina Silva Vieira, Yiannis Tsompanakis*

Chair: *Nikolaos Makrakis*

- C 21336** 1D HARMONIC RESPONSE OF INHOMOGENEOUS SOIL DEPOSITS WITH EXPONENTIALLY VARYING STIFFNESS: EXACT & APPROXIMATE SOLUTIONS
*Haralambos Parashakis, **Emmanouil Rovithis**, George Mylonakis*
- C 20295** A COMPARISON STUDY BETWEEN 1D AND 3D SITE RESPONSE ANALYSES BASED ON OBSERVED EARTHQUAKE ACCELERATION RECORDS
Shima Sadeghzadeh, Atilla Ansal
- C 20783** NUMERICAL INVESTIGATIONS FOR UNSATURATED SLOPE UNDER THE EXCITATION OF PULSE-LIKE AND NON-PULSE GROUND MOTIONS
Ruohan Wang, Guan Chen, Yong Liu, Michael Beer

COMPdyn MS 28 - II
MONITORING, DAMAGE MODELLING AND SOIL-STRUCTURE-INTERACTION IN CULTURAL HERITAGE CONSTRUCTIONS

Monday
14:30 - 16:30

Room 2A

MS Organizers: *Giuseppe Maddaloni, Stefania Sica, Antonino Iannuzzo, Michela Monaco*

Chair: *Antonino Iannuzzo*

- C 20870** INFLUENCE OF THE DISPLACEMENT OF THE SUPPORTS ON THE COLLAPSE BEHAVIOR OF MASONRY SEMI-CIRCULAR ARCHES
*Simona Coccia, **Fabio Di Carlo***
- C 21313** SEISMIC VULNERABILITY ASSESSMENT OF AN ITALIAN ANCIENT CHURCH ACCORDING TO CONVENTIONAL APPROACHES
Stefania Imperatore, Gian Piero Lignola, Barbara Ferracuti
- C 20682** THE ROLE OF FRICTION IN THE DYNAMIC BEHAVIOUR OF FREESTANDING MARBLE OBJECTS
Ester Sallicandro, Michela Monaco
- C 21418** AN HYBRID METHODOLOGY FOR THE DEFINITION OF LOCALIZED COLLAPSE CURVES FOR UNREINFORCED MASONRY STRUCTURES
*Daniela De Gregorio, **Francesca Linda Perelli**, Carlo Olivieri, Petros Christou*
- C 20441** STRENGTHENING OF MASONRY ARCHES: THE "SANTA MARIA DELLE GRAZIE" CHURCH
Luigi Massaro, Luciana Di Gennaro, Mariateresa Guadagnuolo, Giorgio Frunzio

DAY 1

MONDAY 12 JUNE

COMPdyn TS 24 - I SOIL-STRUCTURE INTERACTION

- C 20141** THE LATERAL CAPACITY OF CONCRETE PILES IN STIFF CLAY TO DENSE SAND
Mina Mikaeel, Andrew Gouda
- C 20307** SEISMIC ANALYSIS FOR BUILDING STRUCTURES UNDER DYNAMIC SOIL-PILE INTERACTION USING SIMPLIFIED MODELS
Jun-Yang Shi

UNCECOMP MS 14 - I GREY-BOX MODELLING FOR UNCERTAINTY QUANTIFICATION

Monday
14:30 - 16:30

Room 2B

MS Organizers: *David Moens, Augustin Persoons, Matthias Faes, Enrico Zio, George Stefanou, Matteo Broggi*
Chair: *George Stefanou*

- U 20030** RANDOM FIELD PARAMETER IDENTIFICATION AND RESPONSE VARIABILITY ANALYSIS OF COMPOSITE STRUCTURES WITH UNCERTAIN MECHANICAL PROPERTIES
Panagiotis Gavallas, George Stefanou, Dimitrios Savvas, Iason Papaioannou
- U 19556** PARAMETRIC P-BOX PROPAGATION BASED ON USING BAYESIAN OPTIMIZATION AND UNSCENTED TRANSFORM
Chen Ding, Chao Dang, Matteo Broggi, Michael Beer
- U 19593** ENHANCING TRANSFER LEARNING FOR CRASHWORTHINESS STUDIES UNDER LOW DATA AVAILABILITY THROUGH SPHERE PROJECTION
Giada Colella, Volker A. Lange, Fabian Duddeck
- U 19704** QUANTIFYING THE EPISTEMIC UNCERTAINTY LINKED TO THE DEVELOPMENT PROCESS OF AN EARLY-STAGE COMPONENT FOR CRASHWORTHINESS
Paolo Ascia, Matthias Faes, Fabian Duddeck
- U 19782** AN UNIFIED ENRICHMENT STRATEGY FOR RELIABILITY-BASED DESIGN OPTIMIZATION USING ADAPTIVE KRIGING AND ZERO-ORDER ALGORITHMS
Alessio Faraci, Pierre Beaurepaire, Nicolas Gayton
- U 19794** QUANTIFYING THE VALUE OF DOMAIN KNOWLEDGE IN PHYSICS-INFORMED MACHINE LEARNING
Aidan Hughes, Elizabeth Cross, Keith Worden, Timothy Rogers, Matthew Jones

UNCECOMP MS 11 - I
UNCERTAINTY QUANTIFICATION UNDER LIMITED DATA

Monday
14:30 - 16:30

Room 3A

MS Organizers: *Alba Sofi, David Moens, Edoardo Patelli, Matthias Faes, Michael Hanss*
 Chair: *Edoardo Patelli*

U 19952 **KEYNOTE:** INTERVAL RELIABILITY ANALYSIS OF STRUCTURES CONTROLLED BY FRACTIONAL VISCOELASTIC DAMPERS WITH UNCERTAIN PARAMETERS

Alba Sofi, Giuseppe Muscolino, Mario Di Paola

U 19746 A REDUCED ORDER MODEL APPROACH FOR FUZZY FIELD ANALYSIS

Nataly Manque, Marcos Valdebenito, Matthias Faes, Pierre Beaurepaire

U 19772 ON PROCESSING HETEROGENEOUS SOURCES OF LIMITED DATA FOR UNCERTAINTY QUANTIFICATION IN A POSSIBILISTIC FRAMEWORK

Tom Könecke, Michael Hanss

U 19792 IMPRECISE PROBABILITIES AS AN ANSWER TO THE INDETERMINACY INHERENT TO MECHANICAL TOLERANCES

Kristof A. Simady, Pierre Beaurepaire, Nicolas Gayton

U 19797 ROBUST PROBABILITY BOUNDS ANALYSIS FOR FAILURE ANALYSIS UNDER LACK OF DATA AND MODEL UNCERTAINTY

Adolphus Lye, Ander Gray, Marco de Angelis, Scott Ferson

COMPDPN MS 37 - II
DESIGN OF STRUCTURES UNDER EXTREME LOADS

Monday
14:30 - 16:30

Room 3B

MS Organizers: *Marco Simoncelli, Flavio Stochino, Marco Zucca*
 Chair: *John Bellos*

C 20213 STRUCUTRAL BEHAVIOUR OF STEEL STORAGE RACKS UNDER DIFFERENT FIRE SCENARIOS

Marco Simoncelli, Marco Zucca, Flavio Stochino, Livia Bhardi

C 20029 ROBUSTNESS OF RC FRAMES UNDER EARTHQUAKE AND BLAST CHAINED SCENARIOS

Mattia Francioli, Juliano Ferreira Martins, Francesco Petrini, Franco Bontempi

COMPDPN TS 15 - I
OPTIMUM DESIGN AND CONTROL

C 22021 **KEYNOTE:** INDOOR TRACKING USING UNMANNED AERIAL VEHICLES

Alessandro Cardoni, Raffaele Tarantini, Gian Paolo Cimellaro

C 20231 OPTIMAL DESIGN OF A TUNED MASS DAMPER INERTER USING A WHALE OPTIMIZATION ALGORITHM FOR THE CONTROL OF BUILDINGS SUBJECTED TO GROUND ACCELERATION

Mariana Castro-Osorio, Daniela Vallejo-Paniagua, Verónica Valencia-Valencia, Luis A. Lara-Valencia, John J. Blandón-Valencia

C 20099 SEISMIC PROTECTION OF NON-STRUCTURAL ELEMENTS IN RC BUILDINGS

Saraswati Setia, Gurkirat Singh

DAY 1

MONDAY 12 JUNE

COMPdyn MS 45 - II STRUCTURAL DYNAMICS, SEISMIC SAFETY AND RISK ASSESSMENT OF SPECIAL STRUCTURES

Monday
14:30 - 16:30

Room 4A

MS Organizers: *Rui Carneiro Barros, Manuel Braz-César*

Chair: *Rui Carneiro Barros, Pedro Delgado*

C 21432 STUDY OF THE SEISMIC VULNERABILITY OF A REMODELLED REINFORCED CONCRETE BUILDING IN LISBON
Raquel C. Pedreiras, Rui Carneiro de Barros

C 20834 MODELLING STRATEGIES OF INFILL MASONRY WALLS FOR SEISMIC ANALYSIS OF BUILDING STRUCTURES
Pedro Folhento, Rui Carneiro de Barros, Manuel Braz-César

COMPdyn MS 9 SEISMIC SAFETY ASSESSMENT OF STRUCTURES

MS Organizers: *Pedro Delgado, António Arêde*

C 21282 NUMERICAL MODELLING AND STRUT-AND-TIE CONCEPTS FOR SEISMIC DESIGN AND ASSESSMENT OF PRE-CAST TWO-COLUMN BENTS
Lucas Carvalho, Mário Pimentel, Pedro Delgado, António Arêde, Nelson Vila Pouca, José Rui Pinto

C 21098 THREE-DIMENSIONAL FRAME ANALYSIS OF Q- Δ RESONANCE OF CENTER-CORE BIAXIALLY SYMMETRICAL HIGH-RISE BUILDING UNDER LONG-PERIOD EARTHQUAKE MOTION
Masayuki Kohiyama, Shiori Maki

C 21152 EXPERIMENT AND SIMULATION OF Q- Δ RESONANCE USING FOUR-LAYER BENDING-SHEAR TYPE SPECIMEN
Ryohei Kai, Masayuki Kohiyama

C 20710 CONTINUOUS STRAIN FIELD ESTIMATION FOR CAST-IN-SITU REINFORCED CONCRETE SANDWICH WALLS UNDER CYCLIC LATERAL IN-PLANE LOADING
Carlos Andrés Riascos González, Paolino Cassese, Antonio Occhiuzzi, Carlo Rainieri

UNCECOMP MS 16 STOCHASTIC FINITE ELEMENT METHODS: IMPROVEMENTS AND NEW APPROACHES

Monday
14:30 - 16:30

Room 4B

MS Organizers: *Roger Ghanem, Haidi Meidani, Ruda Zhang*

Chair: *Ruda Zhang*

U 19805 **KEYNOTE:** BAYES UPDATING IN HOMOGENEOUS CHAOS SPACES
Roger Ghanem, Xiaoshu Zeng, Zhiheng Wang, Philippe Hawi

U 19844 PROBABILISTIC OPERATOR LEARNING VIA STOCHASTIC PROCESSES WITH IMPLICIT KERNELS
Ruda Zhang

U 19712 ADVANTAGES OF THE (EXTENDED) ISOGOMETRICAL BASIS FOR THE GENERAL NON-DETERMINISTIC SPECTRAL FEM FRAMEWORK
Dmytro Pivovarov, Kai Willner, Paul Steinmann

U 19721 A SPECTRAL STOCHASTIC FINITE ELEMENT FORMULATION FOR GEOMETRIC NONLINEAR SHALLOW SHELLS
Lukas Panther, Werner Wagner, Steffen Freitag

U 19993 IMPROVING ACCURACY AND COMPUTATIONAL EFFICIENCY OF OPTIMAL DESIGN OF EXPERIMENT VIA BACKWARD GREEDY APPROACH

Mehdi Taghizadeh, Dongbin Xiu, Negin Alemazkoo

16:30-17:00

Coffee Break

DAY 1

MONDAY 12 JUNE

COMPdyn MS 19 - III RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS

Monday
17:00 - 19:00

Olympia

MS Organizers: *Daniela Addessi, Michele Betti, Nicola Cavalagli, Francesco Clementi, Antonio Formisano, Gabriele Milani*

Chair: *Nicola Cavalagli*

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- C 20489** SEISMIC VULNERABILITY ASSESSMENT OF VAULTED MAYA CONCRETE TEMPLES IN BONAMPAK, CHIAPAS, MÉXICO
Humfrey Kimanya, Anna Remus, Omar Hamad, Justin Sennyondo, Dung Nguyen, Selman Tezcan, Renato Perucchio
- C 20508** PREDICTING THE UNIAXIAL COMPRESSIVE CAPACITY OF NON-STRENGTHENED AND FRP-STRENGTHENED MASONRY COLUMNS USING A FAST NUMERICAL APPROACH
Luis Carlos da Silva, Gabriele Milani, Ernesto Grande
- C 20191** LIMIT ANALYSIS MODEL FOR A FAST EVALUATION OF CHINESE MASONRY PAGODAS VULNERABILITY
Peixuan Wang, Gabriele Milani, Shengcai Li
- C 20314** HETEROGENEOUS LIMIT ANALYSIS FOR MASONRY ARCH BRIDGES WITH FULL MODELING OF BACKFILL
Yiwei Hua, Gabriele Milani
- C 20477** FINITE ELEMENT MODELING OF AN ITALIAN MASONRY ARCH BRIDGE DETECTING DAMAGE UNDER SEISMIC EXCITATIONS
Daniela Addessi, Domenico Liberatore, Andrea Battisti
- C 21294** AN APPROACH FOR DERIVING FRAGILITY CURVES OF MASONRY BUILDINGS IN AGGREGATES
Valentina Cima, Valentina Tomei, Ernesto Grande, Maura Imbimbo
- C 20305** FINITE ELEMENT MODEL FOR RUBBER SEISMIC ISOLATION WITH AND WITHOUT S-SHAPED STEEL DAMPERS
Kai Guo, Gaetano Pianese, Gabriele Milani

UNCECOMP MS 6 - III SURROGATE MODELLING AND DATA-DRIVEN APPROACHES FOR UNCERTAINTY QUANTIFICATION

Monday
17:00 - 19:00

Attica

MS Organizers: *Jean-Marc Bourinet, Michael Shields, Bruno Sudret, Alexandros Taflanidis*

Chair: *Bruno Sudret*

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- U 19890** LATENT PC-KRIGING MODEL FOR HETEROSKEDASTIC REGRESSION OF MECHANICAL RESPONSE OF STRUCTURES TO SEISMIC LOADINGS
Clément Gauchy, Cyril Feau
- U 19665** SUPERVISED LEARNING OF NONLINEAR SUPERPOSITION PRINCIPLE FOR HYDRODYNAMIC LOADING ON STRUCTURES
Xiaojuan Luo, Vijay Nardurlikar, Sangri Yi, Aakash B. Satish, Alistair Revell, Ajay B. Harish
- U 19781** THE USE OF SURROGATE MODELS TO BRIDGE THE GAP BETWEEN IN VIVO AND IN VITRO DEGRADATION OF MAGNESIUM-BASED IMPLANTS
Tamadur Albaraghteh, Alexander Hermann, Arman Shojaei, Regine Willumeit-Römer, Christian J. Cyron, Berit Zeller-Plumhoff

- U 19804** ROBUST CALIBRATION OF A HYDROLOGICAL MODEL WITH STOCHASTIC SURROGATE MODELS
Katarina Radišić, Claire Lauvernet, Arthur Vidard
- U 19814** SURROGATE MODELING VIA FUNCTIONAL TENSOR NETWORKS
Cosmin Safta, Nicholas Galioto, John Jakeman, Khachik Sargsyan, Alex Gorodetsky
- U 19822** MULTIFIDELITY SURROGATE MODELLING USING POLYNOMIAL CHAOS EXPANSIONS TO COMBINE NOISY MEASUREMENT DATA AND COMPUTER SIMULATIONS
Aikaterini Giannoukou, Stefano Marelli, Bruno Sudret

UNCECOMP TS 17 - III
UNCERTAINTY QUANTIFICATION

Monday
17:00 - 19:00

Templars

Chair: *Quentin Dollon*

- U 19655** ON THE DESCRIPTION OF UNCERTAINTY OF DIGITAL TWIN MODELS
George Tsialiamanis, Nikolaos Dervilis, David Wagg, Keith Worden
- U 19818** PROBABILISTIC MODELLING OF AIR TRAFFIC FLOWS USING DEEP ENSEMBLES
Nick Pepper, Marc Thomas, George De Ath, Richard Cannon, Richard Everson, Mark Girolami, Tim Dodwell
- U 19984** INFO-GAP ROBUSTNESS ANALYSIS ON THE RISK ASSESSMENT OF A NUCLEAR ACCIDENTAL SCENARIO
Antoine Ajenjo, Vincent Chabridon, Emmanuel Ardillon, Scott Cogan, Emeline Sadoulet-Reboul
- U 19705** UNCERTAINTY QUANTIFICATION OF A INDUSTRIAL SCALE CFD APPLICATION USING STOCHASTIC SPECTRAL METHODS
Philipp Wenig, Stephan Kelm, Markus Klein
- U 19707** COST-FREE OPTIMIZED SIMULATION AND PHYSICAL EXPERIMENT TRADE-OFF WITH VARIANCE BASED SENSITIVITY ANALYSIS
Charles Surget, Sylvain Dubreuil, Jérôme Morio, Cécile Mattrand, Jean-Marc Bourinet, Nicolas Gayton
- U 19986** BUDGET-LIMITED PARAMETRIC ESTIMATION FOR EXPENSIVE BLACK BOX ENGINEERING MODELS
Andrew Duncan, Enrico Crovini, Simon Cotter, Konstantinos Zygalakis
- U 19843** ABSTENTION IN REGRESSION
Cristina Garcia-Cardona, Jamaludin Mohd-Yusof, Tanmoy Bhattacharya

DAY 1

MONDAY 12 JUNE

COMPDYN TS 14 - III NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS

Monday
17:00 - 19:00

Kallirhoe 1

Chair: *David Connolly*

- C 21046** NUMERICAL INVESTIGATION ON STABILITY OF COLUMNS UNDER DYNAMIC LOADS WITH TWO FREQUENCIES
Jian Deng
- C 22215** PARAMETRIC ANALYSIS AND REDUCED ORDER MODEL OF RESULTING WIND LOADING ON STRUCTURAL COMPONENTS THROUGH CFD SIMULATIONS
Sotiria Stefanidou, Olga Markogiannaki, Elias Paraskevopoulos
- C 20750** LONG-TERM TIME-HISTORY ANALYSIS FOR SEISMIC PERFORMANCE ASSESSMENT OF AGED REINFORCED CONCRETE STRUCTURES: COMPUTATIONAL CHALLENGES, SOLUTIONS AND APPLICATIONS
Codi McKee, Petros Sideris, Mija Hubler
- C 20753** SEMI-ANALYTICAL CHARACTERIZATION OF A SLOSHING FLUID MASS WITH THE SMOOTHED PARTICLE HYDRODYNAMIC METHOD
Giorgia Goursand-Parente, Bonaventura Tagliaferro, Salvatore Capasso, Alejandro Crespo, Giacomo Viccione
- C 20985** INVESTIGATING THE IMPACT OF POROSITY DISTRIBUTION AND GRADING PARAMETER ON THE FREE VIBRATION OF FUNCTIONALLY GRADED BEAMS
Lazreg Hadji, Vagelis Plevris, Royal Madan
- C 20448** TEST OF AN IDEA FOR SETTING THE NONLINEARITY TOLERANCE IN NONLINEAR RESPONSE HISTORY ANALYSES ACCORDING TO PROCEDURES ORIGINATED IN THE SEISMIC CODE OF NEW ZEALAND NZS 1170.5:2004
Aram Soroushian

COMPDYN MS 12 - III ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN DESIGN AND ASSESSMENT OF STRUCTURES

Monday
17:00 - 19:00

Kallirhoe 2

MS Organizers: *George Markou, Nikolaos P. Bakas, Vagelis Harmandaris*

Chair: *Nikolaos P. Bakas*

- C 21116** MACHINE LEARNING-BASED IDENTIFICATION OF VULNERABILITY FACTORS FOR MASONRY BUILDINGS IN AGGREGATE: THE HISTORICAL CENTRE OF CASENTINO HIT BY THE 2009 L'AQUILA EARTHQUAKE
Silvia Pinasco, Sergio Lagomarsino, Caterina Carocci, Andrea Coraddu, Luca Oneto, Serena Cattari
- C 20613** DEVELOPING FUNDAMENTAL PERIOD FORMULAE FOR STEEL FRAMED STRUCTURES THROUGH MACHINE LEARNING AND AUTOMATED ALGORITHMS
Duan Calitz, George Markou, Nikolaos Bakas, Manolis Papadrakakis
- C 20449** SEISMIC PERFORMANCE EVALUATION OF EXISTING RC FRAME STRUCTURES BASED ON ARTIFICIAL NEURAL NETWORKS
Tuya Wang, Huanjun Jiang, Okyay Altay
- C 20261** WHICH SIGNIFICANT DURATION OF GROUND MOTIONS TO USE? INVESTIGATIONS ON ARTIFICIAL NEURAL NETWORKS PREDICTING BUILDING SEISMIC COLLAPSE
Konstantinos Tsalouchidis, Christoph Adam

- C 20406** AUTOMATIC IDENTIFICATION OF BUILDING FEATURES FOR SEISMIC DAMAGE ASSESSMENT ON A LARGE SCALE
Pietro Carpanese, Marco Donà, Francesca da Porto

**COMPDYN MS 25 - II
TOWARDS SEISMIC RESILIENCE: STRATEGIES AND TECHNOLOGICAL
INNOVATION FOR SEISMIC RISK REDUCTION OF EXISTING
STRUCTURES**

Monday
17:00 - 19:00

Abbey

MS Organizers: *Virginio Quaglino, Paolo Calvi, Tommaso D'Antino, Eleonora Bruschi, Carlo Pettoruso*
Chair: *Eleonora Bruschi*

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- C 20303** DESIGN, TESTING AND MODELLING OF A NOVEL FRICTION DAMPER WITH ENHANCED RESISTANCE TO REPEATED SEISMIC LOADS
Virginio Quaglino, Eleonora Bruschi, Carlo Pettoruso, Mauro Sartori
- C 21050** SHEAR DEFICIENT RC BEAMS RETROFITTED WITH INORGANIC MATRIX COMPOSITES
Dario De Domenico, Natale Maugeri, Paolo Longo, Matteo Mazzeo, Giuseppe Ricciardi, Antonino Quattrocchi, Roberto Montanini, Luigi Calabrese
- C 20285** VARIABLE ORIFICE DAMPER IMPLEMENTATION FOR SEISMIC SEMI-ACTIVE CONTROL OF CIVIL STRUCTURES
Andrea Troise, Eleonora Bruschi, Marco Martino Rosso, Angelo Alosio, Alessandro Rizzo, Nikos D. Lagaros, Virginio Quaglino, Giuseppe Carlo Marano
- C 20257** EVALUATION OF THE EFFECT OF MASONRY INFILLS ON RESPONSE OF RC BUILDINGS EQUIPPED WITH FPS DEVICES: A CASE STUDY
Diego Gino, Elena Miceli, Adolfo Ricioppo, Guglielmo Amendola, Luca Giordano, Paolo Castaldo
- C 20294** FULL-SCALE SHAKE TABLE TESTS OF A R.C. BUILDING EQUIPPED WITH AN ACTIVE MASS DAMPER: EXPERIMENTAL RESULTS AND NUMERICAL SIMULATIONS
Giovanni Rebecchi, Fabio Menardo, Matteo Rosti, Alberto Bussini, Paolo Martino Calvi
- C 21804** DIRECT LOSS-BASED SEISMIC DESIGN: STATE OF THE ART AND CURRENT CHALLENGES
Roberto Gentile
- C 20310** DISPLACEMENT-BASED DESIGN OF HYSTERETIC DAMPERS FOR SEISMIC RETROFIT OF FRAMES
Eleonora Bruschi, Virginio Quaglino, Luca Zoccolini

DAY 1

MONDAY 12 JUNE

COMPdyn TS 2 - I ALGORITHMS FOR STRUCTURAL HEALTH MONITORING

Monday
17:00 - 19:00

Ground

Chair: *Álvaro Cunha*

- C 20790** **KEYNOTE:** SEVEN YEARS OF CONTINUOUS DYNAMIC MONITORING OF BAIXO SABOR DAM
*Sérgio Pereira, Filipe Magalhães, Jorge Gomes, **Álvaro Cunha**, José V. Lemos*
- C 22019** DYNAMIC IDENTIFICATION OF A HISTORICAL MASONRY BUILDING: THE CASE STUDY OF PALAZZO ROSCIANO
*Raffaele Tarantini, Alessandro Cardoni, **Gian Paolo Cimellaro**, Marco Domaneschi, Enrico Pribaz, Gianluca Rupolo*
- C 22675** APPLICATION OF THE WAVELET TRANSFORM INVERSE ANALYSIS FOR MODAL IDENTIFICATION AND DAMAGE DETECTION
Pierre Argoul, Michalis Fragiadakis
- C 20149** COMPRESSION AND RECONSTRUCTION OF AUTOCOVARANCE FUNCTIONS FOR DAMAGE DETECTION AND LOCALIZATION UNDER VARIABLE ENVIRONMENTAL CONDITIONS
Jyrki Kullaa
- C 20286** KURTOSIS AND SKEWNESS BASED COMPARISON OF HERMITE POLYNOMIAL AND JOHNSON TRANSFORMATIONS
Ayşe Su Giz, Ata Mugan
- C 20317** FEASIBILITY STUDY OF MICROTREMOR SIGNALS FOR STRUCTURAL HEALTH MONITORING ON REAL STEEL STRUCTURES
Chih-chun Ou, Jun Iyama

COMPdyn MS 32 - II MULTI-HAZARD RISK MANAGEMENT OF THE BUILT ENVIRONMENT: RECENT ADVANCES AND OPEN CHALLENGES

Monday
17:00 - 19:00

Room 1A

MS Organizers: *Serena Cattari, Silvia De Angeli, Carmine Galasso, Xavier Romao*

Chair: *Silvia De Angeli*

- C 22335** ASSESSMENT AND RETROFIT STUDY OF MASONRY – TIMBER FRAMED BUILDING FOR COMBINED FOUNDATION SETTLEMENT AND SEISMIC LOADING
Constantine Spyrakos
- C 20347** EMPIRICAL MULTI-VARIABLE TSUNAMI DAMAGE MODELS BASED ON THE 2011 GREAT EAST JAPAN DATASET: ANALYSIS OF THE PERFORMANCES AT DIFFERENT SPATIAL SCALES
*Mario Di Bacco, **Anna Rita Scorzini**, Anawat Suppasri*
- C 20602** DIRECT VISUAL INSPECTION OF IDA RESULTS FOR DERIVATION OF FRAGILITY CURVES BASED ON OPTIMAL INTENSITY MEASURE SELECTION
***Ante Pilipović**, Romano Jevtić Rundek, Mario Uroš, Marta Šavor Novak*
- C 21447** IMPULSIVE ACTIONS DUE TO SEISMIC JERK AND DESIGN OF REINFORCEMENTS TO COUNTERACT THEIR EFFECTS IN MASONRY BUILDINGS
*Massimo Mariani, **Francesco Pugi***
- C 20604** SCRIPTED POSTPROCESSING OF ABAQUS OUTPUT DATA IN APPLICATION TO SEISMIC ENGINEERING
Romano Jevtić Rundek, Ante Pilipović, Mario Uroš, Marija Demšić, Marta Šavor Novak

C 21134 MULTI SCALE URBAN MODELLING TO IMPROVE THE RECOVERABILITY OF CITIES EXPOSED TO MULTIPLE NATURAL HAZARDS

Soheil Mohammadi, Giorgio Boni, Francesca Pirlone, Serena Cattari, Silvia De Angeli

C 21165 LARGE-SCALE VULNERABILITY ANALYSIS OF HISTORICAL MASONRY BUILDINGS

Valentina Buonocunto, Giorgio Serino, Fulvio Parisi

**COMPDYN TS 9 - I
GEOTECHNICAL ENGINEERING**

Monday
17:00 - 19:00

Room 1B

Chair: *Zehra Cagnan*

C 21077 SEISMIC SAFETY OF TUNNELS UNDER NEAR-FAULT EARTHQUAKES

Swetha Veeraraghavan

C 20531 INVESTIGATING THE SOIL STRESS LEVELS FOR DIFFERENT PILE GEOMETRIES UNDER DIFFERENT LOADING CONFIGURATIONS

Daniel Rademan, George Markou

C 20074 SENSITIVITY ANALYSIS FOR DERIVATION OF 1D VS PROFILES USING INVERSE QUARTER-WAVELENGTH THEORY

Mehmet Ozişin, Zehra Cagnan

C 20541 FRAGILITY CURVES FOR BRIDGES SUBJECTED TO THREE-DIMENSIONAL SEISMIC ENVIRONMENTS

Jimena Rosas, Juan Manuel Mayoral, Mauricio Anaya

C 20628 MODELLING OF RIGID INCLUSIONS FOUNDATIONS TO INVESTIGATE THE FAILURE ENVELOPE IN THE V-M-H SPACE

Ramon Alcalá Ochoa, Zheng Li, Panagiotis Kotronis, Giulio Sciarra

C 20245 EFFECT OF THE SOIL–PILE–STRUCTURE INTERACTION IN A DYNAMIC ANALYSIS CONSIDERING A LINEAR BEHAVIOR

Amar Alyaman, Fernando Lopez Caballero, Daniel Dias, Hussein Mroueh, Marwan Sadek, Eric Antoinet

C 20609 EVALUATION OF SEISMIC SITE EFFECTS IN A REAL SLOPE THROUGH 2D FE NUMERICAL ANALYSES

Annamaria di Lernia, Carmela Buono, Gaetano Elia

**COMPDYN TS 24 - II
SOIL-STRUCTURE INTERACTION**

Monday
17:00 - 19:00

Room 2A

Chair: *Masato Saitoh*

C 21350 EFFECT OF SOIL-STRUCTURE INTERACTION FOR LOW-RISE BUILDINGS UNDER GEOTHERMALLY INDUCED EARTHQUAKES

Aditi Kumawat, Francesca Taddei, Gerhard Müller

C 20565 A 2D MACRO-ELEMENT FOR EFFICIENT NONLINEAR ANALYSIS OF PILE FOUNDATIONS UNDER SEISMIC LOADING

Thomas Lhermitte, Florent Prunier, David Bertrand, Stéphane Grange, Pierre Wyniecki, Evan Monroig, Thomas Jochyms

DAY 1

MONDAY 12 JUNE

- C 20854** CROSS INTERACTION FOR A SMALL GROUP OF THREE SHALLOW FOUNDATIONS
Enza Zeolla, Filomena de Silva, Stefania Sica
- C 21219** SCALING AND MODELING OF AN IMPACT PILE DRIVING 1G LABORATORY SCALE TEST
Tamara Wehbe, George Anoyatis, Hadrien Rattez, Stijn François
- C 20415** COUPLING OF THE ANALYTICAL SOLUTION FOR THE TIMOSHENKO BEAM WITH A FULLY SATURATED HALFSpace BY APPLICATION OF THE WAVE BASED METHOD
Mirjam Lainer, Gerhard Müller

UNCECOMP MS 14 - II GREY-BOX MODELLING FOR UNCERTAINTY QUANTIFICATION

Monday
17:00 - 19:00

Room 2B

MS Organizers: *David Moens, Augustin Persoons, Matthias Faes, Enrico Zio, George Stefanou, Matteo Broggi*
Chair: *Augustin Persoons*

- U 19806** PERFORMING RELIABILITY ANALYSIS ON STOCHASTIC SIMULATORS
Anderson Pires, Maliki Moustapha, Stefano Marelli, Bruno Sudret
- U 19851** PHYSICS-DATA HYBRID DRIVEN GE-GDEE FOR HIGH-DIMENSIONAL NONLINEAR DYNAMICAL SYSTEMS
Yi Luo, Pol Spanos, Michael Beer, Jianbing Chen
- U 19909** A SELF-LEARNING DIGITAL TWIN FOR PROCESS CONTROL OF FAST PROCESSES UNDER UNCERTAINTY
Miriam B. Dodt, Augustin Persoons, Matthias G. R. Faes, David Moens

UNCECOMP TS 13 SIMULATION OF RANDOM FIELDS

- U 19815** AIRCRAFT AS WEATHER SENSORS: ONLINE REFINEMENT OF WEATHER FORECASTS FOR USE IN TACTICAL AIR TRAFFIC CONTROL
Jan Povalá, Marc Thomas, John Korna, Richard Cannon, Tim Dodwell, Richard Everson, Mark Girolami
- U 19893** MOISTURE TRANSFER IN UNSATURATED SOILS: STOCHASTIC REPRESENTATION OF HETEROGENEITY THROUGH GAUSSIAN RANDOM FIELDS
Evan Ricketts, Peter Cleall, Tony Jefferson, Pierre Kerfriden

**UNCECOMP MS 11 - II
UNCERTAINTY QUANTIFICATION UNDER LIMITED DATA**
**Monday
17:00 - 19:00**
Room 3A

MS Organizers: *Alba Sofi, David Moens, Edoardo Patelli, Matthias Faes, Michael Hanss*
Chair: *Alba Sofi*

- U 19809** BOUNDING LIMITED DATA SETS OF POWER SPECTRAL DENSITY FUNCTIONS FOR UNCERTAINTY QUANTIFICATION
Marco Behrendt, Matthias G.R. Faes, Marcos A. Valdebenito, Michael Beer
- U 19855** CERTIFIED INTERVAL MODEL UPDATING USING SCENARIO OPTIMISATION
Robin Callens, David Moens, Matthias Faes

**UNCECOMP MS 4
RELIABILITY ANALYSIS AND RARE EVENT SIMULATION**

MS Organizers: *Max Ehre, Iason Papaioannou, Elisabeth Ullmann, Michael Shields*

- U 19681** BAYESIAN POST-PROCESSING OF THE MOVING PARTICLES METHOD FOR RARE EVENT ESTIMATION
Iason Papaioannou, Daniel Straub
- U 19535** REALIBILITY ANALYSIS OF CATEGORICAL PERFORMANCE FUNCTIONS VIA ADAPTIVE SEQUENTIAL SAMPLING WITH DETECTION OF FAILURE SURFACES
Miroslav Vořechovský
- U 19968** GLOBAL RELIABILITY SENSITIVITY ANALYSIS OF MODELS WITH DEPENDENT INPUTS USING FAILURE SAMPLES
Max Ehre, Iason Papaioannou, Daniel Straub
- U 19943** A FAULT-TREE-BASED IMPORTANCE SAMPLING STRATEGY FOR PIECEWISE DETERMINISTIC MARKOV PROCESSES
Guillaume Chennetier, Hassane Chraibi, Anne Dutfoy, Josselin Garnier

**COMPdyn TS 15 - II
OPTIMUM DESIGN AND CONTROL**
**Monday
17:00 - 19:00**
Room 3B

Chair: *Spyridon Diamantopoulos*

- C 20227** MODAL ANALYSIS OF NON-CONSERVATIVE EULER-BERNOULLI BEAMS COUPLED TO LINEAR VISCOUSLY DAMPED OSCILLATORS
John Bellos
- C 20136** CONTROL OF THE STRUCTURAL RESPONSE OF A HIGH-RISE BUILDING UNDER WIND LOAD USING A TUNED MASS DAMPER INERTER (TMDI)
Daniela Vallejo-Paniagua, Mariana Castro-Osorio, Verónica Valencia-Valencia, Luis A. Lara-Valencia, John J. Blandón-Valencia
- C 20336** OPTIMAL PLACEMENT METHOD OF OUTRIGGER WITH BRB IN A CORE WALL SYSTEM STRUCTURE
Hamid Nikzad, Shinta Yoshitomi
- C 20135** CONTROL OF STRUCTURES SUBJECTED TO DYNAMIC LOADS USING MAGNETORHEOLOGICAL DAMPERS
Verónica Valencia-Valencia, Mariana Castro-Osorio, Daniela Vallejo-Paniagua, Sebastián Echavarría-Montaña, Luis Lara-Valencia

DAY 1

MONDAY 12 JUNE

- C 20326** VARIATION STUDY OF THE CONSTRUCTION COST OF A 15-STORY R/C BUILDING BASED ON THE SEISMIC RISK ZONE
Maria Kalaitzi, Theodoros Chrysanidis

COMPDYN MS 31
BEYOND DISCONTINUUM-BASED ANALYSIS: NOVEL APPROACHES FOR DISCRETE ELEMENT STRUCTURAL MODELLING OF COMPOSITE MATERIALS

Monday
17:00 - 19:00

Room 4A

MS Organizers: *D. Malomo, A. Mehrotra, N. Kassotakis, G. Gabbianelli, B. Pulatsu*

Chair: *Nicko Kassotakis*

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- C 21109** THREE-DIMENSIONAL DISCRETE ELEMENT MODELLING OF RUBBLE MASONRY STRUCTURES FROM GEOSPATIAL DATA
Nicko Kassotakis, Vasilis Sarhosis, Ajit Pillai, Lars Johanning
- C 20683** IN-PLANE RESPONSE OF A MODULAR RETROFIT SYSTEM FOR URM WALLS USING DEM
Nicolò Damiani, Matthew J. DeJong, Luca Albanesi, Guido Magenes, Andrea Penna, Paolo Morandi
- C 20811** NONLINEAR ANALYSIS OF A LARGE RC CANTILEVER GRANDSTAND OF SAN SIRO MEAZZA STADIUM IN MILAN USING THE APPLIED ELEMENT METHOD
Nicola Scattarreggia, Martina Cogliano, Gian Michele Calvi, Matteo Moratti
- C 20983** SENSITIVITY ANALYSIS OF DRY-JOINT STONE MASONRY WALLS USING DISCRETE ELEMENT METHOD
Ciro Candonone, Fulvio Parisi

UNCECOMP MS 10
UNCERTAINTY QUANTIFICATION FOR SCIENTIFIC MACHINE LEARNING

Monday
17:00 - 19:00

Room 4B

MS Organizers: *Paris Perdikaris, M. Giselle Fernández-Godino*

Chair: *Paris Perdikaris, M. Giselle Fernández-Godino*

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- U 19825** LEVERAGING LOCAL SCALE DEEP AUTOENCODER-BASED MODELS TO IMPROVE EARLY TIME PREDICTIONS IN GLOBAL ATMOSPHERIC TRANSPORT
M. Giselle Fernández-Godino, Wai Tong Chong, Donald D. Lucas
- U 19955** LEARNING TO SIMULATE FLUID FLOW AROUND AIRFOILS USING GRAPH NEURAL NETWORKS
Nils Bock, Daigo Maruyama
- U 19961** QUANTIFYING UNCERTAINTIES IN RESIDUAL NEURAL NETWORKS AND NEURAL ODES
Khachik Sargsyan, Joshua Hudson, Oscar Diaz-Ibarra, Marta D'Elia, Habib Najm
- U 19989** A CONNECTION BETWEEN PROBABILITY, PHYSICS AND NEURAL NETWORKS
Sascha Ranftl
- U 20052** IBUQ: INFORMATION BOTTLENECK BASED UNCERTAINTY QUANTIFICATION FOR NEURAL FUNCTION REGRESSION AND NEURAL OPERATOR LEARNING
Ling Guo

U 19537 PHYSICS-INFORMED INFORMATION FIELD THEORY FOR MODELING PHYSICAL SYSTEMS WITH UNCERTAINTY QUANTIFICATION
Alex Alberts, Ilias Bilionis

U 19533 LEARNING PERRON-FROBENIUS OPERATORS WITH PINNS FOR UNCERTAINTY QUANTIFICATION
Nishant Panda, Jehanzeb Chaudhry

COMPdyn MS 19 - IV
RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION
OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST
NATURAL AND ANTHROPIC RISKS

Tuesday
8:30 - 10:30

Olympia

MS Organizers: *Daniela Addessi, Michele Betti, Nicola Cavalagli, Francesco Clementi, Antonio Formisano, Gabriele Milani*

Chair: *Nicola Cavalagli*

C 21113 **KEYNOTE:** DIFFERENT MODELING APPROACHES APPLIED TO A RESILIENT MASONRY STRUCTURE
Matti Schiavoni, Ersilia Giordano, Francesca Roscini, Francesco Clementi

C 20969 EFFECTS OF AGING AND DETERIORATION ON THE SEISMIC FRAGILITY OF MASONRY ARCH BRIDGES
Giovanni Tecchio, Sara Barbisan, Elisa Saler, Francesca da Porto

C 21323 SIMULATION OF IN PLANE REINFORCED MASONRY WALLS BEHAVIOUR BY MEANS OF SIMPLIFIED METHOD
Riccardo Piazzon, Paolo Zampieri, Carlo Pellegrino

C 21341 'HYBRID' FULL MODELS FOR SEISMIC ASSESSMENT OF MASONRY AGGREGATES THROUGH PUSHOVER ANALYSIS
Maurizio Acito, Martina Buzzetti, Giuseppe Alfredo Cundari, Gabriele Milani

C 21173 NUMERICAL INVESTIGATION ON THE FLANGE EFFECT IN UNREINFORCED MASONRY WALL SYSTEMS THROUGH NONLINEAR FINITE ELEMENT MODELLING
Elia Acconcia, Valentina Buonocunto, Fulvio Parisi

UNCECOMP MS 6 - IV
SURROGATE MODELLING AND DATA-DRIVEN APPROACHES
FOR UNCERTAINTY QUANTIFICATION

Tuesday
8:30 - 10:30

Attica

MS Organizers: *Jean-Marc Bourinet, Michael Shields, Bruno Sudret, Alexandros Taflanidis*

Chair: *Jean-Marc Bourinet*

U 19802 UNCERTAINTY QUANTIFICATION FOR PARAMETERIZED STOCHASTIC PROCESSES
Joy N. Mueller, Khachik Sargsyan, Habib N. Najm

U 19774 PROBABILISTIC LEARNING INFERENCE FOR MODEL UPDATING IN STOCHASTIC STRUCTURAL DYNAMICS WITH A SINGLE TARGET AND LIMITED DATA
Olivier Ezvan, Christian Soize, Christophe Desceliers

U 19866 ADVANCED ADAPTIVE DESIGN OF EXPERIMENTS FOR EXPECTATION COMPUTATION AND APPLICATION TO THE ESTIMATION OF FATIGUE BASED DAMAGE OF AN OFFSHORE WIND TURBINE
Alexis Cousin, Nicolas Delépine, Martin Guiton, Miguel Munoz Zuniga, Timothée Perdrizet

U 19926 MULTI-OUTPUT GAUSSIAN PROCESS SURROGATE MODELS FOR INVERSE UNCERTAINTY QUANTIFICATION IN RANDOM NEUTRONICS
Paul Lartaud, Philippe Humbert, Josselin Garnier

U 19939 LEARNING FUNCTIONS DEFINED OVER SETS OF VECTORS WITH KERNEL METHODS
Babacar Sow, Rodolphe Le Riche, Julien Pelamatti, Sanaa Zannane, Merlin Keller

U 19944 EFFICIENT GLOBAL SENSITIVITY ANALYSIS USING ACTIVE LEARNING OF GAUSSIAN PROCESS
Yujin Kim, Sangri Yi, Junho Song

**UNCECOMP TS 17 - IV
UNCERTAINTY QUANTIFICATION**
**Tuesday
8:30 - 10:30**
Templars

 Chair: *George Tsialiamanis*

- U 19708** MULTISCALE UNCERTAINTY QUANTIFICATION IN FRICTION INTERFACES FOR STRUCTURAL NONLINEAR DYNAMICS
Enora Denimal, Jie Yuan
- U 19873** PREDICTIVE MAINTENANCE DECISION MAKING ON THE BASIS OF REMAINING USEFUL LIFE PROGNOSTICS
Antonios Kamariotis, Konstantinos Tatsis, Kai Goebel, Eleni Chatzi, Daniel Straub
- U 19897** EXPERIMENTAL INVESTIGATION OF THE UNCERTAINTY OF DISORDERED FIBER-REINFORCED INJECTION-MOLDED COMPONENTS
Benedikt Rohrmüller, Franziska Kneisel, Jörg Hohe, Carla Beckmann
- U 19902** INVESTIGATION OF A VALIDATION APPROACH CONSIDERING UNCERTAINTIES FOR COMPONENTS IN AUTOMOTIVE CRASH SIMULATION MODELS
Reza Barzanooni, Michael Pabst, Christian Boegle, Fabian Duddeck
- U 19827** REMAINING SAFE RESIDUAL LIFE ASSESSMENT UNDER LIMITED PRIOR INFORMATION AND HETEROGENEOUS DATA
Ioannis-Christoforos Koune, Alice Cicirello
- U 19995** MODEL DISTANCE BASED MULTIVARIATE GLOBAL-LOCAL RESPONSE SENSITIVITY ANALYSIS FOR UNCERTAIN SYSTEMS
K. Vidhya, George Greegar

**COMPDYN TS 14 - IV
NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS**
**Tuesday
8:30 - 10:30**
Kallirhoe 1

 Chair: *Jian Deng*

- C 21059** THE EVALUATION OF THE OPTIMAL COLLISION CONDITIONS BETWEEN FOLDED PAPER STRUCTURES
Gyehee Lee
- C 21439** ZONAL FINITE LINE METHOD FOR THERMAL STRESS AND DYNAMICS RESPONSE ANALYSES OF COMPOSITE STRUCTURES
Xiao-Wei Gao, Hua-Yu Li
- C 20765** STRATEGY FOR GLOBAL PARAMETRIC OPTIMIZATION IN NONLINEAR VIBRATION: APPLICATION ON A GANTRY CRANE
Quentin Ragueneau, Luc Laurent, Antoine Legay, Thomas Larroque, Romain Crambuer
- C 20808** A DATA-DRIVEN APPROACH USING NEURAL NETWORKS FOR REAL-TIME MODELING AND SIMULATION OF STRUCTURES WITH MANY WELDED POINTS UNDER IMPACT
Afsal Pulikkathodi, Elisabeth Lacazedieu, Ludovic Chamoin, Juan-Pedro Berro Ramirez, Laurent Rota, Malek Zarroug
- C 20902** SEISMIC NUMERICAL MODELLING OF ELECTRICAL CABINETS
Derek Rodriguez, Simone Peloso, Emanuele Brunesi, Daniele Perrone, Andre Filiatrault

- C 21260** COMPARISON OF POD-UDEIM AND POD-ECSW MODEL ORDER REDUCTION IN THE CASE OF DAMAGING RC STRUCTURES SUBJECTED TO EARTHQUAKES
Bastien Bodnar, Walid Larbi, Magdalini Titirla, Jean-François Deü, Fabrice Gatuingt, Frédéric Ragueneau

**COMPdyn MS 1 - I
 NOVEL TECHNIQUES AND APPROACHES FOR SEISMIC PROTECTION OF STRUCTURES WITH ISOLATION AND/OR ENERGY DISSIPATION DEVICES**

Tuesday
 8:30 - 10:30

Kallirhoe 2

MS Organizers: *Enrico Tubaldi, Laura Ragni, Dario De Domenico, Daniele Losanno, Hamid Ahmadi*
 Chair: *Enrico Tubaldi*

- C 20665** **KEYNOTE:** A NEW APPROACH FOR MODELING AND ANALYZING SELF-CENTERING SYSTEMS
Ohad Idels, Oren Lavan
- C 20737** FINITE ELEMENT MODELING OF THE SHAKE-TABLE RESPONSE OF A BRIDGE MODEL COMPRISING ROCKING COLUMNS
Antonios A. Katsamakas, Michalis F. Vassiliou
- C 21082** INFLUENCE OF DESIGN PARAMETERS ON THE SEISMIC RELIABILITY OF BASE ISOLATED SYSTEMS
Fabio Micozzi, Fabrizio Scozzese, Laura Ragni, Andrea Dall'Asta
- C 21125** SEISMIC RETROFITTING OF PRECAST INDUSTRIAL BUILDINGS THROUGH ENERGY DISSIPATION DEVICES
Davide Bellotti, Francesco Cavalieri, Roberto Nascimbene
- C 20852** SEISMIC RETROFIT OF INDUSTRIAL V BRACED STEEL STRUCTURES THROUGH ASYMMETRIC RE-CENTERING DISSIPATIVE DEVICES
Agnese Natali, Francesco Morelli

**COMPdyn MS 38 - I
 TIMBER-BASED SYSTEMS FOR NEW AND EXISTING STRUCTURES IN SEISMIC AREA: RECENT DEVELOPMENTS AND FUTURE TRENDS**

Tuesday
 8:30 - 10:30

Abbey

MS Organizers: *Antonio Sandoli, Valentina Tomei, Martina Sciomenta, Massimo Fragiaco*
 Chair: *Valentina Tomei*

- C 21039** AN INSIGHT ON THE ROLE OF THE DESIGN PROCEDURES ON DAMAGE TOLERANCE AND COST OF CLT BUILDINGS IN SEISMIC AREAS
Antonio Sandoli, Bruno Calderoni, Carla Ceraldi, Giovanni Fabbrocino
- C 21203** THE USE OF STRUCTURAL TIMBER IN EUROPE: AN OVERVIEW ON RECENT DEVELOPMENTS
Valentina Tomei, Martina Sciomenta, Antonio Sandoli
- C 21261** DEVELOPMENT OF A HOLISTIC PARAMETRIC FRAMEWORK FOR MULTI-PERFORMANCE LIFE-CYCLE EVALUATION OF POST-TENSIONED TIMBER BUILDINGS
Giada Formichetti, Michele Matteoni, Stefano Pampanin
- C 20422** TIMBER CARPENTRY WITHOUT STEEL CONNECTORS
Luigi Massaro, Roberto Serpieri, Giorgio Frunzio, Luciana Di Gennaro

C 21248 CYCLIC BEHAVIOIR OF AN INNOVATIVE JOINT PROTOTYPE FOR CLT PANELS
Antonio Tancredi, Italo Marchionni, M.G. Masciotta, Giuseppe Brando

C 20311 EFFECT OF THE STRUCTURAL INTERACTIONS IN MULTI-STOREY CLT SHEAR WALLS
Elisabetta Maria Ruggeri, Giuseppe D'Arenzo, Marinella Fossetti

COMPdyn TS 2 - II
ALGORITHMS FOR STRUCTURAL HEALTH MONITORING

Tuesday
8:30 - 10:30

Ground

Chair: *Álvaro Cunha*

C 20801 EVOLUTION OF THE MODAL PARAMETERS DUE PROGRESSIVE DEGRADATION OF AN RC BEAM-COLUMN JOINT
Angelo Aloisio, Amedeo Gregori, Lorenzo Bizzarri, Caterina D'Agostino, Riccardo Cirella, Rocco Alaggio

C 21318 LASER SCANNING OF JUMA MACHIT'S COURTYARD AND DETAILED NUMERICAL STUDY ACCOUNTING FOR ROOF MEMBERS COMPROMISED BY TERMITE INFESTATION
Shakhzod Takhirov, Bakhodir Rakhmonov, Ravshanbek Nafasov, Abbos Samandarov, Sevara Sultanova, Sultan Kudratov, Mirzokhid Akhmedov, Ravshan Shamansurov

C 20727 COST-EFFECTIVE HIERARCHICAL DAMAGE DETECTION TECHNIQUE FOR MONITORING MASONRY BRIDGES
Benjamin Streichenberger, Guillaume Perrin, Julien Waeytens, Emmanuel Bourgeois, Philippe Lévèque

C 21001 SYTEM IDENTIFICATION OF A VERTICAL SHAFT BEARING TOWARD THE DIGITAL TWIN DEVELOPMENT OF HYDROELECTRIC GENERATING UNITS
Esmail Ghorbani, Quentin Dollon, Frederick Gosselin

C 21074 DEEP LEARNING-BASED BRIDGE DAMAGE DETECTION BY COMBINING LOCAL AND GLOBAL VARIABLES
Ana Fernandez-Navamuel, David Pardo, Filipe Magalhães, Diego Zamora-Sanchez, Ángel J. Omella, David Garcia-Sanchez

C 22671 IDENTIFICATION OF PARTIAL DIFFERENTIAL EQUATIONS IN STRUCTURAL MECHANICS THEORY THROUGH K-SPACE ANALYSIS AND DESIGN
Thomas Brion, Pascal Fossat, Mohamed Ichchou, Olivier Bareille, Abdel-Malek Zine, Christophe Droz

C 21092 PROPAGATION OF EPISTEMIC UNCERTAINTY IN MODAL PARAMETERS AND ITS INFLUENCE ON DAMAGE QUANTIFICATION
Saranika Das, Koushik Roy

COMPdyn MS 3 - I
PROTECTION OF MUSEUM'S COLLECTIONS COMPUTATIONAL
APPROACHES AND INNOVATIVE INTERVENTIONS

Tuesday
8:30 - 10:30

Room 1A

MS Organizers: *Stefania Viti, Marco Tanganelli*

Chair: *Marco Tanganelli*

- C 20124** SEISMIC VULNERABILITY OF MUSEUMS' COLLECTIONS: A CASE-STUDY
Silvia Lelli, Maria Gatto, Marco Tanganelli, Stefania Viti
- C 20338** SAN NICCOLO'S TOWER-GATE, FLORENCE – ITALY: MASONRY CHARACTERISATION AND STRUCTURAL ANALYSIS
Massimo Coli, Giorgio Lacanna, Paola Vannucchi, Emanuele Marchetti, Marco Tanganelli, Francesco Trovatelli, P. Papeschi, Anna Livia Ciuffreda, Giorgio Caselli, Costanza Stramaccioni
- C 20726** SEISMIC PROTECTION OF CULTURAL HERITAGE BUILDING CONTENTS BY KINEMATIC ISOLATION DEVICES
Gabriele Guerrini, Francesco Graziotti, Maria Rota, Andrea Penna
- C 20507** CONTINUOUS SEISMOMETRIC MONITORING OF THE NATIONAL ARCHAEOLOGICAL MUSEUM "GAIO CILNIO MECENATE" IN AREZZO, ITALY
Riccardo Mario Azzara, Martina Occhipinti, Angelo D'Ambrisi, Marco Tanganelli, Francesco Trovatelli, Nicoletta Vettori
- C 21223** STRUCTURE FROM MOTION SURVEY OF STATUE FOR FINITE ELEMENT MODELLING
Maria Aurora Vincenti, Michele Arturo Caponero, Miriam Lamonaca, Giuseppe Occhipinti, Omar AlShawa, Luigi Sorrentino

COMPdyn TS 9 - II
GEOTECHNICAL ENGINEERING

Tuesday
8:30 - 10:30

Room 1B

Chair: *Swetha Veeraraghavan*

- C 21137** **KEYNOTE:** MULTISCALE MODELING OF COUPLED THERMO-HYDRO-MECHANICAL ANALYSIS OF HETEROGENEOUS POROUS MEDIA WITH MICRO-DYNAMIC EFFECTS
Amir R. Khoei, Saeed Saeedmonir
- C 21265** PRELIMINARY STUDY FOR SEISMIC ASSESSMENT OF THE UNDERGROUND FACILITIES AT POINT 5 OF THE LARGE HADRON COLLIDER (LHC) AT CERN
Ugo Carmando, Ahmed Mubarak, Antonio Bilotta, Emilio Bilotta, Jonathan Knappett, Saverio La Mendola, Martin Gastal, Pieter Mattelaer, Luca Sironi, Davide Merlini, Matteo Falanesca, Gianluca Bella, Filippo Gianelli, Marco Andreini
- C 20857** FRAGILITY CURVES FOR A SMALL ZONED EARTH DAM
Mariagrazia Tretola, Stefania Sica
- C 20859** EFFECT OF SOIL-STRUCTURE INTERACTION ON THE DYNAMIC IDENTIFICATION OF A PRESTRESSED CONCRETE BRIDGE
Antonella Ambrosino, Alessandra De Angelis, Maria Rosaria Pecce, Stefania Sica
- C 21246** MODEL CALIBRATION AND NONLINEAR SITE RESPONSE ANALYSIS FOR MEDIUM COMPACTED SATURATED VOLCANIC SAND
Seyed Javad Fattahi, Yaser Jafarian, Maria Konstadinou, Elin asta Olafsdottir, Sigurdur Erlingsson, Bjarni Bessason, Rajesh Rupakhety

C 21054 SHEAR RATE EFFECT ON GRAIN CRUSHING OF SANDS. A LABORATORY STUDY BY THE BROOMHEAD APPARATUS

Petros Sidiropoulos, Constantinos A. Stamatopoulos, Vassilis P. Panoskaltsis

**COMPdyn TS 13 - I
NONLINEAR DYNAMICS**

Tuesday
8:30 - 10:30

Room 2A

Chair: *Terje Haukaas*

C 20068 **KEYNOTE:** SENSITIVITY TO DAMPING IN NONLINEAR DYNAMIC ANALYSIS

Terje Haukaas

C 20376 QUANTIFYING UNCERTAINTIES IN NONLINEAR DYNAMICAL SYSTEMS WITH THE FOURIER GENERALIZED POLYNOMIAL CHAOS METHOD

Lars Menzel, Ulrich Römer, Michael Müller

C 21377 INVESTIGATION OF THE SEISMIC BEHAVIOR OF BUILDINGS WITH U-BOOT SLABS

Denise-Penelope N. Kontoni, Ali Ghamari, Mojtaba Noorollahi

C 21370 THE SEISMIC RESPONSE OF MIXED REINFORCED CONCRETE–STEEL LOW-RISE BUILDINGS UNDER NEAR-FAULT EARTHQUAKES

Paraskevi K. Askouni, George A. Papagiannopoulos

C 20836 EQUAL DISPLACEMENT CONCEPT FOR INELASTIC ANALYSIS OF STRUCTURES

John Judd

**UNCECOMP MS 20
VVUQ FOR COMPLEX MULTIPHYSICS PROBLEMS**

Tuesday
8:30 - 10:30

Room 2B

MS Organizers: *Filipe S. Pereira, Jim Ferguson, Aaron Koskelo, Brandon Wilson*

Chair: *Filipe S. Pereira*

U 19711 CHALLENGES ESTIMATING THE ACCURACY OF SCALE RESOLVING SIMULATIONS OF TURBULENCE: CONSTANT VS. VARIABLE PHYSICAL RESOLUTION

Filipe Pereira, Brandon Wilson, Aaron Koskelo, Luis Eca

U 19904 VERIFICATION METHODS FOR PLANAR SHOCK REFLECTIONS OVER WEDGES

Allyson Leffler, Jim Ferguson, Jasper Thrussell, Steven Anderson

U 19852 SENSITIVITY ANALYSIS FOR EFFECTIVE CONDUCTIVITY OF ANISOTROPIC FIBROUS MATERIALS

Kunkun Tang, Francesco Panerai, Jonathan Freund

U 19842 TRANSITION AND MULTIPHYSICS IN 3D ICF CAPSULE IMPLOSIONS

Fernando Grinstein, Vincent Chiravalle, Brian Haines, Filipe Pereira, Robert Greene

U 19928 MODEL SELECTION OF REDUCED KINETICS MODELS FOR LARGE-SCALE TURBULENT COMBUSTION SIMULATION

Kunkun Tang, Tulio Ricciardi, Jonathan Freund

DAY 2

TUESDAY 13 JUNE

U 19953 USING SELF-SIMILAR SOLUTIONS AS A VERIFICATION TOOL FOR COMPUTATIONAL PHYSICS

Steven Anderson

COMPdyn MS 22 - I
HYSTERESIS PHENOMENA IN STRUCTURAL DYNAMICS AND
EARTHQUAKE ENGINEERING: EXPERIMENTS, MODELING, AND
DESIGN

Tuesday
8:30 - 10:30

Room 3A

MS Organizers: *N. Vaiana, A. Charalampakis, G. Tsiatas, P. Tsopelas*

Chair: *N. Vaiana*

C 20862 **KEYNOTE:** MITIGATION OF STRUCTURE VIBRATIONS BY ADDING A HYSTERETIC ELEMENT

Fabrizio Vestroni, Paolo Casini

C 21084 NONLINEAR DYNAMIC ANALYSIS OF RIGID BODIES SUPPORTED BY RATE-INDEPENDENT HYSTERETIC ELEMENTS

Nicolò Vaiana, Luciano Rosati

C 21081 WORK AND ENERGY COMPONENTS IN MECHANICAL SYSTEMS WITH COMPLEX HYSTERETIC BEHAVIOR

Raffaele Capuano, Nicolò Vaiana, Luciano Rosati

C 21042 SIMPLIFIED-MICRO MODELLING OF UNREINFORCED AND JOINT REPOINTED BRICK MASONRY

Maja Gosheva, Sergey Churilov, Elena Dumova-Jovanoska, Veronika Shendova, Lidija Krstevska

C 20958 ON THE RESPONSE OF SDOF RATE-INDEPENDENT HYSTERETIC MECHANICAL SYSTEMS SUBJECTED TO SHOCK EXCITATION

Diego Francisco Ledezma-Ramirez, Pablo Ernesto Tapia-Gonzalez, Nicolò Vaiana

COMPdyn MS 35
RECENT ADVANCES IN GROUND- AND STRUCTURE-BORNE NOISE
AND VIBRATION ASSESSMENT & PREDICTION

Tuesday
8:30 - 10:30

Room 3B

MS Organizers: *Lukas Moschen, Anastasios Sextos, Grigorios Tsinidis*

Chair: *Anastasios Sextos, Grigorios Tsinidis*

C 22710 EVALUATING THE DYNAMIC PERFORMANCE OF BUILDINGS EXPOSED TO GROUND-BORNE VIBRATIONS: PREDICTIONS, MEASUREMENTS AND VALIDATION

Nikolaos Lesgidis, Lukas Moschen, Thomas Jaquet, Anastasios Sextos

C 20898 LOW-COST HYBRID DESIGN STRATEGIES: LARGE-SCALE SHAKING TABLE TESTS AND CHALLENGES OF IMPLEMENTATION

Anastasios Tsiavos, Anastasios Sextos

C 20252 CONCRETING UNDER TRAFFIC: IN-DEPTH INVESTIGATION OF THE EFFECTS OF VIBRATIONS ON YOUNG CONCRETE

Christian Gasser, Soufiane El-Yassini, Alfred Lechner, Lukas Hausner, Alois Vorwagner

C 20809 EFFECT OF THE LENGTH OF SEISMIC METASURFACES ON VIBRATION MITIGATION PERFORMANCE

David Carneiro, Pieter Reumers, Geert Lombaert, Geert Degrande

- C 20818** INFLUENCE OF DYNAMIC AND GEOMETRICAL PROPERTIES OF SEISMIC METASURFACES ON VIBRATION MITIGATION
Zohre Kabirian, Pieter Reumers, Geert Lombaert, Geert Degrande
- C 21520** DYNAMIC ANALYSIS OF RAILWAY BRIDGES CONSIDERING THE NONLINEAR AMPLITUDE-DEPENDENT SYSTEM BEHAVIOUR - SIMULATION AND IN-SITU TESTS
Michael Reiterer, Andrei Firus

UNCECOMP MS 15
**MULTISCALE AND ENHANCED METHODS FOR RANDOMLY
STRUCTURED COMPOSITE MATERIALS**

Tuesday
8:30 - 10:30

Room 4A

MS Organizers: *George Stefanou, Victor Eremeyev, Emanuele Reccia, Patrizia Trovalusci, Marco Pingaro*
Chair: *Patrizia Trovalusci*

- U 20022** STATISTICAL HOMOGENIZATION PROCEDURE FOR ESTIMATION OF MECHANICAL PROPERTIES OF CERAMIC MATRIX COMPOSITES (CMC) CONSIDERING GRANULOMETRIC DISTRIBUTIONS OF PHASES
Marco Pingaro, Maria Laura De Bellis, Emanuele Reccia, Patrizia Trovalusci, Tomasz Sadowski
- U 20065** COMPUTATION OF THE SPATIALLY VARYING MECHANICAL PROPERTIES OF GRAPHENE NANOPATELETS WITH RANDOM STRUCTURAL DEFECTS
Panagiotis Gavallas, Dimitrios Savvas, George Stefanou
- U 19777** STOCHASTIC HOMOGENIZATION ANALYSIS OF A MICROSCOPICALLY HETEROGENEOUS RESIN STRUCTURE FABRICATED BY FDM METHOD WITH THREE-DIMENSIONAL RANDOM FIELD MODELING OF MICROSTRUCTURE
Sei-ichiro Sakata, Takayoshi Kikkawa, Yuki Aikawa
- U 19571** VIRTUAL MODELLING AIDED PHASE FIELD METHOD FOR DYNAMIC FRACTURE MECHANICS
Yiyang Liu, Yuan Feng, Di Wu, Wei Gao
- U 19947** INFLUENCE OF RANDOM SINGLE-CRYSTAL ELASTICITY TENSOR AND SPATIALLY CORRELATED CRYSTALLOGRAPHIC ORIENTATIONS ON THE ULTRASONIC SCATTERING IN CUBIC POLYCRYSTALS
Ningyue Sheng, Shahram Khazaie, Mathilde Chevreuril, Sylvain Fréour
- U 19967** STUDY ON RANDOM FIELD MODELING FOR STRENGTH ESTIMATION OF FIBER REINFORCED COMPOSITES BY PERIDYNAMICS CONSIDERING MICROSCOPIC IN-SITU MEASUREMENT
Yuki Arai, Sei-ichiro Sakata

Chair: *Ambrosios-Antonios Savvides*

- C 20926** A NEURAL NETWORK PERSPECTIVE FOR THE PREDICTION OF FAILURE STRESS-STRAIN FIELD AT THE ULTIMATE LOAD OF FOOTING SETTLEMENTS OF CLAYEY SOILS
Ambrosios-Antonios Savvides, Leonidas Papadopoulos
- C 22282** ANALYSIS OF RANDOMLY EXCITED ROCKING STRUCTURES USING THE STOCHASTIC LINERIZATION METHOD
Spyridon Diamantopoulos, Hera Yanni, Ioannis Mitseas, Michalis Fragiadakis
- C 20924** THE EFFECT OF A DOUBLE ECCENTRIC LOADED FOOTING SETTLEMENT ON FAILURE ON CLAYEY SOILS: AN UNCERTAINTY QUANTIFICATION ESTIMATION WITH THE MODIFIED CAM CLAY YIELD FUNCTION
Ambrosios-Antonios Savvides, Manolis Papadrakakis
- C 20479** PARAMETER ESTIMATION OF NONLINEAR AEROELASTIC SYSTEMS USING BAYESIAN MODEL UPDATING AND ADVANCED KRIGING SURROGATE MODEL
Michael McGurk, Jie Yuan
- C 22279** STOCHASTIC GENERATION OF ARTIFICIAL ACCELEROGRAMS USING THE CONTINUOUS WAVELET TRANSFORM METHOD
Hera Yanni, Michalis Fragiadakis, Ioannis P. Mitseas
- C 21296** ESTIMATION OF THE SEISMIC RESPONSE OF BUILDINGS THROUGH TRANSFER FUNCTIONS. A PROBABILISTIC APPROACH
Rodolfo Javier Tirado Gutiérrez, Yeudy Felipe Vargas Alzate, Ramón González Drigo, Ana Maria Zapata Franco
- C 20923** THE OBLIQUE LOADED FOOTING SETTLEMENT FAILURE ON COHESIVE GEOMATERIALS: A STOCHASTIC INVESTIGATION USING THE MODIFIED CAM CLAY YIELD MODEL
Ambrosios-Antonios Savvides, Manolis Papadrakakis

10:30-11:00
Coffee Break

**COMPDPN
SEMI-PLENARY LECTURES**
**Tuesday
11:00 - 13:00**
Olympia

 Chair: *Jamie E. Padgett*
C 21493 ROBUST MONITORING FOR ENGINEERED SYSTEMS: TOWARD AUGMENTED TWINS
Eleni Chatzi
C 21495 A SIMULTANEOUS SPACE-TIME GALERKIN APPROACH TO THE INVERSE DYNAMICS OF NONLINEARLY ELASTIC STRUCTURES
Peter Betsch
C 21489 APPLICATIONS OF SUBDOMAIN COUPLING METHODS TO NONSMOOTH TRANSIENT STRUCTURAL DYNAMICS AND WAVE PROPAGATION PROBLEMS
Michael Brun
**COMPDPN
SEMI-PLENARY LECTURES**
**Tuesday
11:00 - 13:00**
Attica

 Chair: *Jack Baker*
C 22199 SEMI-ANALYTICAL METHODS FOR THE SIMULATION OF ELASTIC WAVES
Hauke Gravenkamp
C 21494 ISOGOMETRIC ANALYSIS: ADVANCES AND APPLICATIONS WITH A SPECIAL FOCUS ON DYNAMIC PROBLEMS
Alessandro Reali
C 21490 INVESTIGATING THE CAPABILITIES OF FLEXIBLE JOINTS FOR ENHANCING THE PERFORMANCE OF MASONRY INFILLED FRAMES
Enrico Tubaldi
**UNCECOMP
SEMI-PLENARY LECTURES**
**Tuesday
11:00 - 13:00**
Templars

 Chair: *Sondipon Adhikari*
U 20088 FROM STOCHASTIC NONLINEAR CONSTITUTIVE MODELS ON COMPLEX GEOMETRIES TO MODEL-FORM UNCERTAINTIES IN ATOMISTIC COMPUTATIONS: A TOUR OF STOCHASTIC MODELING ON CONSTRAINED SPACES
Johann Guilleminot
U 19549 DEVELOPMENT OF HISTORY-DEPENDENT SURROGATE MODELS IN THE CONTEXT OF STOCHASTIC MULTI-SCALE SIMULATIONS FOR ELASTO-PLASTIC COMPOSITES
Juan Manuel Calleja Vázquez, Van-Dung Nguyen, Ling Wu, Ludovic Noels
U 20370 FROM DATA AND MODELS TO DECISIONS GUIDED BY POSTERIOR BELIEF
Paris Perdikaris

DAY 2

TUESDAY 13 JUNE

UNCECOMP SEMI-PLENARY LECTURES

Tuesday
11:00 - 13:00

Kallirhoe 1

Chair: *Haim Waisman*

U 20530 SURROGATE MODELLING FOR STOCHASTIC SIMULATORS

Bruno Sudret

U 20529 UQ FOR ML AND ML FOR UQ: WHY UNCERTAINTY QUANTIFICATION AND MACHINE LEARNING GO HAND-IN-HAND

Michael Shields

U 20554 DECISION-ORIENTED SENSITIVITY ANALYSIS

Daniel Straub

SPECIAL TECHNOLOGICAL SESSION LECTURES

Tuesday
11:00 - 13:00

Kallirhoe 2

Chair: *Constantine Spyrakos*

C 20941 SIMCENTER TOOLS FOR COMPUTATIONAL DYNAMICS, UNCERTAINTY QUANTIFICATION, AND REGIONAL-SCALE EARTHQUAKE HAZARD SIMULATION

Gregory G. Deierlein, Frank McKenna, Adam Zsarnóczy, Laura Lowes, Matthew J. Schoettler, Sanjay Govindjee, Matthew DeJong

C 22665 PARALLELIZATION TECHNIQUES FOR SCALING GRADIENT BOOSTING AND DEEP LEARNING ON SUPERCOMPUTERS

Nikolaos Bakas

U 20555 DATA DRIVEN COMPUTATIONAL MECHANICS AT EXASCALE

Vissarion Papadopoulos

13:00-14:00
Lunch Break

COMPdyn MS 19 - V
RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION
OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST
NATURAL AND ANTHROPIC RISKS

Tuesday
 14:00 - 16:00

Olympia

MS Organizers: *Daniela Addessi, Michele Betti, Nicola Cavalagli, Francesco Clementi, Antonio Formisano, Gabriele Milani*

Chair: *Francesco Clementi*

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- C 20161** **KEYNOTE:** FINITE ELEMENT ANALYSIS OF HIGH-DAMPING UNBONDED FIBER REINFORCED ELASTOMERIC ISOLATORS (UFREIS) OF DIFFERENT SHAPE FACTORS
*Gaetano Pianese, **Gabriele Milani**, Antonio Formisano*
- C 21031** A TYPOLOGICAL-MECHANICAL APPROACH TO ASSESS LARGE-SCALE SEISMIC FRAGILITY OF MASONRY BUILDINGS IN HISTORICAL CENTRES
*Chiara Tosto, Valeria Leggieri, Sergio Ruggieri, **Giuseppina Uva***
- C 21343** COMPARISON OF THE RECORDED SEISMIC SIGNALS FOR THE 2012 EMILIA AND 2016 CENTRAL ITALY SEISMIC SEQUENCES WITH THE DESIGN EARTHQUAKES BASED ON THE PSHA APPROACH
*Maurizio Acito, **Martina Buzzetti**, Claudio Chesi, Gabriele Milani*
- C 21369** SEISMIC RESPONSE OF DIFFERENT MASONRY BUILDING AGGREGATE CONFIGURATIONS BY A REFINED FE MICROMODEL
*Marilisa Di Benedetto, Fabio Di Trapani, **Sofia Villar**, Massimo Petracca, Guido Camata*
- C 21423** INVESTIGATING THE SEISMIC RESPONSE OF URM WALLS WITH IRREGULAR OPENING LAYOUT THROUGH DIFFERENT MODELING APPROACHES
***Francesco Parisse**, Valentina Buonocunto, Cristina Cantagallo, Alice Di Primio, Enrico Di Domenico, Nicolò Lo Presti, Elia Acconcia, Francesco Cannizzaro, Giovanni Castellazzi, Antonio Maria D'Altri, Sandro Liseni, Carlo Filippo Manzini, Rui Marques, Giuse*
- C 20956** SEISMIC VULNERABILITY ANALYSIS OF S. SEBASTIANO CHURCH DAMAGED DURING THE 2016 CENTRAL ITALY SEISMIC SEQUENCE
***Michol Rampado**, Elvis Cescatti, Francesco Rossetto, Francesca da Porto, Claudio Modena*

UNCECOMP MS 6 - V
SURROGATE MODELLING AND DATA-DRIVEN APPROACHES
FOR UNCERTAINTY QUANTIFICATION

Tuesday
 14:00 - 16:00

Attica

MS Organizers: *Jean-Marc Bourinet, Michael Shields, Bruno Sudret, Alexandros Taflanidis*

Chair: *Michael Shields*

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- U 19857** ON PHYSICALLY CONSTRAINED NON-INTRUSIVE POLYNOMIAL CHAOS EXPANSION
***Lukáš Novák**, Himanshu Sharma, Michael Shields*
- U 19971** GAUSSIAN-PROCESS BASED GLOBAL SENSITIVITY ANALYSIS FOR COMPLEX MODELS OF ACTIVE BIOMECHANICAL SYSTEMS
***Sebastian Brandstaeter**, Barbara Wirthl, Jonas Nitzler, Wolfgang A. Wall*
- U 19983** OTISCREAM: A PYTHON MODULE FOR STATISTICAL IDENTIFICATION OF PENALIZING CONFIGURATIONS IN COMPUTER EXPERIMENTS
***Vincent Chabridon**, Bertrand Iooss, Amandine Marrel*
- U 19619** ENHANCED UNIVERSAL KRIGING FOR TRANSFORMED INPUT PARAMETER SPACES
***Matthias Fischer**, Carsten Proppe*

U 20319 TOWARDS RELIABLE AUTOMATED DRIVING SYSTEMS: SURROGATE MODELING USING SPARSE GRIDS AND GAUSSIAN PROCESSES

Naya Baslan, Julian Schmidt, Alexander Kersch, Dirk Pflüger

U 19726 BAYESIAN OPTIMIZATION IN HIGH-DIMENSION VIA A COMBINATION OF KRIGING SUB-MODELS

Tanguy Appriou, Didier Rullière, David Gaudrie

UNCECOMP TS 17 - V
UNCERTAINTY QUANTIFICATION

Tuesday
14:00 - 16:00

Templars

Chair: *Enora Denimal*

U 19790 COMPARING ADAPTIVE SAMPLING ALGORITHMS ON PROBABILISTIC EVALUATIONS OF RARE SCENARIOS

Jan Soedingrekso, Tanja Eraerds, Martina Kloos, Jörg Peschke, Josef Scheuer

U 19940 QUANTIFYING UNCERTAINTY OF PHYSICS-INFORMED NEURAL NETWORKS FOR CONTINUUM MECHANICS APPLICATIONS

Damien Bonnet-Eymard, Augustin Persoons, Matthias Faes, David Moens

U 19949 SPECTRAL DENSITY ESTIMATION OF STOCHASTIC PROCESSES UNDER MISSING DATA AND UNCERTAINTY QUANTIFICATION WITH BAYESIAN DEEP LEARNING

Yu Chen, Edoardo Patelli, Benjamin Edwards, Michael Beer

U 19964 MECHANICAL CHARACTERIZATION OF POLYPROPYLENE COMPOSITES REINFORCED WITH ARGAN NUT SHELL PARTICLES

Oumaima Belcadi, Nicolas Desilles, Christophe Gautrelet, Fatima Ezzahra Arrakhiz, Leila Khalij, Emmanuel Pagnacco, Hassan El Minor

U 19978 BAYESIAN UNCERTAINTY QUANTIFICATION FOR TRANSIENT HEAT CONDUCTION PROBLEMS WITH TEMPERATURE-DEPENDENT CONDUCTIVITY

Rodrigo L. S. Silva, Clemens Verhoosel, Erik Quaeghebeur

U 19997 COMPARISON OF DATA DRIVEN SYSTEM IDENTIFICATION TECHNIQUES FOR DIFFERENT NON-LINEAR DYNAMICAL SYSTEMS

Pushpa Pandey, Hamed Haddad Khodaparast, Michael Ian Friswell, Tanmoy Chatterjee, Tom Deighan

U 19963 ADAPTIVE SPARSE INTERPOLATION FOR ACCELERATING NONLINEAR STOCHASTIC REDUCED-ORDER MODELING WITH TIME-DEPENDENT BASES

Hessam Babaee, Mohammad Naderi

COMPdyn MS 42 - I
COMPUTATIONAL METHODS FOR INVERSE PROBLEMS IN
STRUCTURES AND GEOPHYSICS

Tuesday
14:00 - 16:00

Kallirhoe 1

MS Organizers: *Dan Givoli, Haim Waisman*

Chair: *Dan Givoli, Haim Waisman*

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- C 20803** TOPOLOGY OPTIMIZATION OF STRUCTURES WITH ENHANCED FRACTURE AND BUCKLING RESISTANCE
Jonathan Russ, Haim Waisman
- C 20863** AN INVERSION PROCEDURE FOR FULLY CHARACTERIZING ELASTIC SCATTERERS FROM ITS FFP MEASUREMENTS
Izar Azpiroz, Helene Barucq, Julien Diaz, Rabia Djellouli
- C 20632** STRUCTURAL DEFORMATION RECONSTRUCTION USING THE HYBRID SHELL-BEAM INVERSE FINITE ELEMENT METHOD: THEORY & NUMERICAL RESULTS
Rinto Roy, Marco Esposito, Marco Gherlone, Cecilia Surace
- C 20653** STRUCTURAL DEFORMATION RECONSTRUCTION USING THE HYBRID SHELL-BEAM INVERSE FINITE ELEMENT METHOD: EXPERIMENTAL APPLICATION ON A THIN-WALLED STIFFENED PANEL
Marco Esposito, Rinto Roy, Marco Gherlone, Cecilia Surace
- C 20548** FULL-WAVEFORM INVERSION OF SEISMIC INPUT MOTIONS AT A DOMAIN REDUCTION METHOD BOUNDARY IN A PML-TRUNCATED DOMAIN
Bruno Guidio, Chanseok Jeong
- C 20607** DAMAGE DETECTION VIA ENRICHED SPECTRAL ELEMENT SIMULATION; A COMPARISON OF INVERSE SOLVERS
Paul Sieber, Sergio Nicoli, Konstantinos Agathos, Pawel Kudela, Wieslaw Ostachowicz, Eleni Chatzi
- C 20494** INVERSE IDENTIFICATION OF CABLE FORCES USING ITS MODAL BEHAVIOR BY DIRECT AND NON-CONTACT VIBRATION MEASUREMENTS
Max Johannes Alois Fritzsche, Maximilian Michael Rupp, Steven R. Lorenzen, Lucia Hofmann, Lia Birmele, Jens Schneider

COMPdyn MS 1 - II
NOVEL TECHNIQUES AND APPROACHES FOR SEISMIC PROTECTION
OF STRUCTURES WITH ISOLATION AND/OR ENERGY DISSIPATION
DEVICES

Tuesday
14:00 - 16:00

Kallirhoe 2

MS Organizers: *Enrico Tubaldi, Laura Ragni, Dario De Domenico, Daniele Losanno, Hamid Ahmadi*

Chair: *Dario De Domenico, Laura Ragni*

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- C 21026** **KEYNOTE:** RETROFITTING OF EXISTING BUILDINGS USING FRICTION DAMPERS ACCORDING TO THE NEW EUROCODE 8
Andreas Kappos, Abdullah Chaar
- C 20714** NUMERICAL MODELLING OF MASONRY-INFILLED RC FRAMES WITH RUBBER JOINTS
Prateek Kumar Dhir, Enrico Tubaldi, Hamid Ahmadi, Bartolomeo Panto
- C 20472** SEISMIC PROTECTION OF SUBSTANDARD RC FRAMES THROUGH SELF-CENTERING DISSIPATIVE BRACES
Dario De Domenico, Luca Facconi, Emanuele Gandelli, Alberto Gioitta, Paolo Longo, Natale Maugeri

DAY 2

TUESDAY 13 JUNE

- C 20677** FINITE ELEMENT MODELING OF THE ROLLING BEHAVIOR OF A POLYURETHANE SPHERE FOR LOW-COST SEISMIC ISOLATION APPLICATIONS
Sergio Reyes, Michalis Vassiliou, Konstantinos Agathos, Dimitrios Konstantinidis
- C 21189** A GLANCE AT OPTIMAL CONFIGURATIONS OF LARGE MASS TUNED MASS DAMPERS IN SOIL-STRUCTURE SYSTEMS
Pasquale Roberto Marrazzo, Davide Noè Gorini, Elide Nastri, Rosario Montuori

COMPDYN MS 38 - II
TIMBER-BASED SYSTEMS FOR NEW AND EXISTING STRUCTURES IN SEISMIC AREA: RECENT DEVELOPMENTS AND FUTURE TRENDS

Tuesday
14:00 - 16:00

Abbey

MS Organizers: *Antonio Sandoli, Valentina Tomei, Martina Sciomenta, Massimo Fragiaco*
Chair: *Antonio Sandoli*

- C 21172** A PARAMETRIC STUDY ON THE CYCLIC RESPONSE OF POST-TENSIONED LOW DAMAGE TIMBER WALLS WITH DISSIPATIVE DEVICES
Valentina Tomei, Maria Zucconi, H. Monsef, Barbara Ferracuti
- C 20840** EXPERIMENTAL AND NUMERICAL RESPONSE ASSESSMENT OF BALLOON-STYLE CROSS LAMINATED TIMBER BUILDINGS IN THE US
Maria Koliou, John van de Lindt, Benjamin Hayes, Pouria Bahmani, Milad Roohi
- C 20480** EXPERIMENTAL AND NUMERICAL ASSESSMENT OF AN IMPROVED PLYWOOD-BASED IN-PLANE RETROFITTING METHOD FOR TIMBER FLOORS IN HIGHLY SEISMIC AREAS
Michele Mirra, Andrea Gerardini
- C 20758** LIGHT TIMBER FRAME WALLS WITH CLADDING– NUMERICAL INVESTIGATION OF THE SEISMIC PERFORMANCE OF A MULTI-STORY BUILDING BASED ON TEST RESULTS
Lukas Rauber, Cristian Vulcu, Vera Wilden, Georgios Balaskas, Benno Hoffmeister
- C 21093** SEISMIC FRAGILITY ANALYSIS TO ASSESS THE IMPACT OF TIMBER VERTICAL ADDITIONS ON EXISTING RC BUILDINGS: A CASE STUDY
Andrea Bartolotti, Michele Sartori, Ivan Giongo

UNCECOMP MS 3 - I
BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE AND ENGINEERING

Tuesday
14:00 - 16:00

Ground

MS Organizers: *Oindrila Kanjilal, Iason Papaioannou, Daniel Straub, Geert Lombaert, Costas Papadimitriou*
Chair: *Oindrila Kanjilal, Costas Papadimitriou*

- U 19586** BAYESIAN INFERENCE OF VISCO-ELASTIC VISCO-PLASTIC MATERIAL MODEL PARAMETERS FOR SLS-PRINTED POLYAMIDE LATTICES
Ling Wu, Cyrielle Anglade, Lucia Cobian, Miguel A Monclus, Anna Hössinger-Kalteis, Zoltan Major, Fatma Karayagiz, Thomas Lück, Ludovic Noels
- U 19800** A GRADIENT-FREE ROBUST OPTIMAL SENSOR PLACEMENT FOR THE ESTIMATION OF MODEL PARAMETERS WITH APPLICATION TO A COMPUTATIONAL FLUID DYNAMICS PROBLEM
Grégory Dergham

- U 19722** AN IMPORTANCE SAMPLING APPROACH TO EFFICIENT GRADIENT-BASED DIMENSION REDUCTION IN STOCHASTIC SYSTEMS
Joanna Zou, Dallas Foster, Youssef Marzouk
- U 19724** BAYESIAN UNCERTAINTY QUANTIFICATION FOR THE SQUEEZE FLOW OF SOFT MATTER
Aricia Rinkens, Clemens Verhoosel, Nick Jaensson
- U 19770** BAYESIAN UPDATING OF GLOBAL RESPONSE SENSITIVITY INDICES IN AN INSTRUMENTED STRUCTURE
Bibhas Paul, A. S. Nisha, C. S. Manohar

COMPdyn MS 3 - II
PROTECTION OF MUSEUM'S COLLECTIONS COMPUTATIONAL APPROACHES AND INNOVATIVE INTERVENTIONS

Tuesday
14:00 - 16:00

Room 1A

MS Organizers: *Stefania Viti, Marco Tanganelli*
Chair: *Stefania Viti*

- C 20601** ROCKING RESPONSE AND VULNERABILITY OF THE PULPIT BY GIOVANNI PISANO IN PISTOIA (ITALY)
Gianni Bartoli, Michele Betti, Luca Facchini, Silvia Monchetti
- C 20313** ARBITRARY LAGRANGIAN EULERIAN ANALYSIS OF THE NEPTUNE FOUNTAIN IN FLORENCE SUBJECTED TO BLAST LOADS
Piermatteo Cicolini, Marco Domaneschi, Marco Tanganelli
- C 20820** THE STUDY OF DONATELLO'S SCULPTURE OF SAN MARCO IN ORSANMICHELE (FLORENCE), THROUGH A THREE-DIMENSIONAL DIGITAL RECONSTRUCTION IN VISIBLE AND UV LIGHT
Michelangelo Micheloni, Anna Livia Ciuffreda, Gabriela Simoni, Mattia Faiulo
- C 20706** HUMAN-INDUCED VIBRATIONS ON MUSEUM ARTEFACTS: LITERATURE REVIEW AND CALCULATION EXAMPLE
Elena Sara Saeed, Linda Giresini, Olimpia Niglio, Francesco Graziotti

COMPdyn MS 11
THE ROLE OF THE STRUCTURAL MONITORING TO PREDICT THE PRIOR DAMAGE OR THE FACTUAL DEGRADATION PATTERN IN ORDER TO UPDATE THE SEISMIC VULNERABILITY OF EXISTING BUILDINGS

Tuesday
14:00 - 16:00

Room 1B

MS Organizers: *Carlo Del Gaudio, Andrea Miano, Fabio Di Carlo, Diego Alejandro Talledo*
Chair: *Andrea Miano*

- C 21278** FRAGILITY CURVES ASSESSMENT OF AN EXISTING TYPOLOGICAL RC BUILDING SUBJECTED TO THE COMBINED ACTION OF SLOW-MOVING SETTLEMENTS AND EARTHQUAKE
Andrea Miano, Annalisa Mele, Carlo Del Gaudio, Gerardo Mario Verderame, Andrea Prota
- C 21356** A METHODOLOGY FOR THE EVALUATION OF MORPHOLOGY-BASED CONSTITUTIVE LAWS OF CORRODED STEEL REBARS
Fabio Di Carlo, Diego Alejandro Talledo, Luisa Berto, Paolo Isabella, Alberto Meda, Zila Rinaldi, Irene Rocca, Anna Saetta
- C 21307** ESTIMATION OF THE COMBINED SEISMIC-FIRE RISK: A CRITICAL REVIEW AND FUTURE RESEARCH AGENDA
Donatella de Silva, Andrea Miano, Andrea Prota, Emidio Nigro

DAY 2

TUESDAY 13 JUNE

- C 21245** URBAN SETTLEMENTS MONITORING USING EGMS DATA THROUGH ADAFINDER TOOL
Annalisa Mele, Michele Crosetto, Andrea Miano, Andrea Prota
- C 21239** DAMAGE EVALUATION IN MASONRY INFILLED RC BUILDINGS FROM SHM DATA
Alessandro Lubrano Lobianco, Marta Del Zoppo, Marco Di Ludovico
- C 20639** TYPOLOGICAL SEISMIC LOSSES ASSESSMENT BY DAMAGED MASONRY BUILDINGS AFTER L'AQUILA 2009 AND EMILIA 2012 EARTHQUAKES
Matteo Tatangelo, Lorenzo Audisio, Michele D'Amato, Rosario Gigliotti

COMPDYN TS 13 - II NONLINEAR DYNAMICS

Tuesday
14:00 - 16:00

Room 2A

Chair: *Carlo Pettoruso*

- C 21000** STEADY-STATE RESPONSE OF A HIGH-STRENGTH MOMENT-RESISTING STEEL FRAME-SELF-CENTERING STEEL PLATE SHEAR WALL SYSTEM
Chuangdong Xie, Xiantie Wang, George Vasdravellis
- C 20776** GROUND MOTION PROCESSING IN ROCKING STRUCTURES
Medhat Elmorsy, Michalis F. Vassiliou

COMPDYN TS 3 - I BRIDGE DYNAMICS

- C 20183** ASSESSMENT OF THE SEISMIC VULNERABILITY AND MODELLING OF EXISTING BRIDGE WITH DIFFERENT LEVELS OF ACCURACY: STRENGTHS AND WEAKNESSES
Carlo Pettoruso, Virginio Quaglino
- C 21132** AN INTERFACE FOR CHECKING DYNAMIC COMPATIBILITY OF ROLLING STOCK WITH EXISTING RAILWAY BRIDGES
Muriel Ragueneau, Huyen Nguyen, Vincent Mathouraparsad
- C 21234** DYNAMIC AMPLIFICATION OF TRAFFIC LOADS ON ROAD BRIDGES EVALUATED USING PROBABILISTIC TRAFFIC SIMULATIONS
Marian Ralbovsky, Maciej Kwapisz, Alois Vorwagner, Stefan Lachinger
- C 20736** STOCHASTIC MODEL UPDATING OF A RC TIED-ARCH BRIDGE
Andrea Gennaro, Amedeo Caprino, Valentina Pernechele, Filippo Lorenzoni, Francesca da Porto

COMPDYN MS 22 - II
HYSTERESIS PHENOMENA IN STRUCTURAL DYNAMICS AND
EARTHQUAKE ENGINEERING: EXPERIMENTS, MODELING, AND
DESIGN

Tuesday
 14:00 - 16:00

Room 3A

MS Organizers: *N. Vaiana, A. Charalampakis, G. Tsiatas, P. Tsopelas*

Chair: *Fabrizio Vestroni*

C 20626 CLASSIFICATION AND PHENOMENOLOGICAL MODELING OF HYSTERESIS PHENOMENA IN ENERGY DISSIPATION DEVICES

Ciro Napolitano, Nicolò Vaiana, Luciano Rosati

C 21131 SIMULATION OF THE HYSTERETIC BEHAVIOR OF TIMBER CONNECTIONS BY THE VAIANA-ROSATI MODEL: PRELIMINARY RESULTS

Agnese Spedicato, Nicolò Vaiana, Luciano Rosati

COMPDYN TS 11
INVERSE PROBLEMS IN STRUCTURAL DYNAMICS

C 20669 OPTIMISED STRUCTURAL MODELLING FOR INVERSE ANALYSIS PARAMETER IDENTIFICATION RELYING ON DYNAMIC MEASUREMENTS

Aram Cornaggia, Tomasz Garbowski, Giuseppe Cocchetti, Rosalba Ferrari, Egidio Rizzi

C 20156 A NEW PHYSICS-GUIDED DATA ASSIMILATION FRAMEWORK FOR ONLINE STRUCTURAL MONITORING: APPLICATION TO SHAKING-TABLE TESTS

Matthieu Diaz, Pierre-Etienne Charbonnel, Ludovic Chamoin

C 20782 SPARSE SYSTEM IDENTIFICATION OF DYNAMICAL SYSTEMS FROM OUTPUT-ONLY MEASUREMENTS

Tapas Tripura, Souvik Chakraborty

C 21212 INVERSE ANALYSIS INVESTIGATION BY GAUSSIAN PROCESSES OPTIMISATION OF A HISTORICAL CONCRETE BRIDGE RELYING ON DYNAMIC MODAL MEASUREMENTS

Tomasz Garbowski, Giuseppe Cocchetti, Aram Cornaggia, Rosalba Ferrari, Egidio Rizzi

COMPDYN MS 10
RECENT ADVANCES IN SEISMIC ISOLATION OF STRUCTURES WITH
NOVEL VIBRATION CONTROL APPROACHES

Tuesday
 14:00 - 16:00

Room 3B

MS Organizers: *Evangelos J. Sapountzakis, Konstantinos A. Kapasakalis*

Chair: *Konstantinos Kapasakalis*

C 20730 PERFORMANCE EVALUATION OF NEGATIVE STIFFNESS-BASED VIBRATION CONTROL DEVICES FOR SEISMIC PROTECTION OF BUILDING STRUCTURES

Konstantinos Kapasakalis, Antonios Mantakas, Moris Kalderon, Maria Antoniou, Evangelos Sapountzakis

C 20434 3D NUMERICAL INVESTIGATION OF AN EXTENDED KDAMPER ABSORBER FOR SEISMIC RETROFITTING OF LOW-RISE BUILDINGS

Antonios Mantakas, Konstantinos Kapasakalis, Moris Kalderon, Maria Antoniou, Ioannis Antoniadis, Evangelos Sapountzakis

C 20430 EXPERIMENTAL STUDY OF PHONONIC STRUCTURES WITH DDA ENHANCED UNIT-CELLS

Moris Kalderon, Antonios Mantakas, Kyriakos Alexandros Chondrogiannis, Ioannis Antoniadis

C 21222 EVALUATION OF THE INTER-STORY ISOLATION SYSTEM APPLIED TO AN EXISTING RC SCHOOL BUILDING

Enrico Bernardi, Marco Donà, Marco Ceresara, Marco Gaspari, Francesca da Porto

DAY 2

TUESDAY 13 JUNE

- C 20652** ON THE VIBRATION ATTENUATION PERFORMANCE OF A GEOMETRICALLY NONLINEAR DEVICE MOUNTED TO A MULTI-STOREY STRUCTURE
Kyriakos Alexandros Chondrogiannis, Vasilis Dertimanis, Eleni Chatzi
- C 21220** EVALUATION OF THE INTER-STORY ISOLATION SYSTEM APPLIED TO AN EXISTING MASONRY SCHOOL BUILDING
Enrico Bernardi, Marco Donà, Sergio Sut, Elisa Saler, Amedeo Caprino, Francesca da Porto
- C 20794** ENERGY DISSIPATION MECHANISMS OF A STEEL REINFORCED MULTI-LAYERED PENTAMODE BRIDGE BEARING
Olga Sapountzaki E., Andreas Kampitsis E., Nikolaos Lagaros D.

UNCECOMP TS 15 STOCHASTIC FRACTURE AND DAMAGE

Tuesday
14:00 - 16:00

Room 4A

Chair: *Adnan Ibrahimbegovic, Panos Pantidis*

- U 19736** **KEYNOTE:** STOCHASTIC IDENTIFICATION OF FRACTURE AND BOND PROPERTIES FOR REINFORCED CONCRETE FROM MEASUREMENTS
Adnan Ibrahimbegovic, Simona Dobrilla, Hermann Matthies
- U 20012** MECHANICAL PROPERTIES ESTIMATION OF STANDARD AND LIGHTWEIGHT CONCRETE THROUGH THE ELASTIC WAVES PROPAGATION
Jacopo Marazzani, Nicola Cavalagli, Marco Breccolotti, Vittorio Gusella
- U 19755** I-FENN: AN INTEGRATED FEM-PINN FRAMEWORK AND ITS APPLICATION ON NON-LOCAL CONTINUUM DAMAGE
Panos Pantidis, Mostafa Mobasher
- U 19766** BAYESIAN UPDATING OF CONSTITUTIVE LAWS FOR FINITE ELEMENT SIMULATION USING FULL FIELD MEASUREMENTS
Abbas Jafari, Eleni Chatzi, Jörg F. Unger

UNCECOMP TS 6 METHODS FOR IMPROVING THE EFFICIENCY OF MONTE CARLO SIMULATION

- U 19546** A FULLY PARALLELIZED AND BUDGETED MULTILEVEL MONTE CARLO METHOD (BMLMC)
Niklas Baumgarten, Christian Wieners
- U 19832** COMPARISON OF SURROGATE MODELING AND SAMPLING STRATEGIES FOR EFFICIENT BAYESIAN MODEL CALIBRATION
Leon Riccius, Iuri Rocha, Frans van der Meer

**COMPDYN TS 25
SOLUTION STRATEGIES FOR DYNAMIC PROBLEMS**

Tuesday
14:00 - 16:00

Room 4B

Chair: *Matthew Bonney*

C 21008 MATRIX EQUATIONS MODELS FOR SOLVING THE DYNAMIC RESPONSE OF INELASTIC CANTILEVER STRUCTURES
Assaf Shmerling

C 20280 MODULAR DEPLOYMENT OF MICROPROCESSOR-CONTROLLED DATA ACQUISITION AND CONTROL WITHIN A DIGITAL TWIN
Matthew Bonney, Matthew Tipuric, David Wagg, Ian Stothers

C 20197 OPERATIONAL MODAL ANALYSIS OF NON-REDUNDANT WOOD FRAME BUILDING
Dipendra Gautam, Simon Olafsson, Rajesh Rupakhety

C 20189 DYNAMIC NUMERICAL SIMULATION FOR THE WOVEN FABRICS BY THE CONTINUUM DAMAGE MECHANICS AND DOMAIN DECOMPOSITION
Sangmin Lee, Seung-Hoon Kang, DuHyun Gong, SangJoon Shin

C 21143 DEVELOPMENT OF FREQUENCY BASED SUBSTRUCTURING COMBINING A DNN BASED SURROGATE MODEL
Muhammad Faizan Baqir, Jin-Gyun Kim

16:00-16:30
Coffee Break

DAY 2

TUESDAY 13 JUNE

COMPdyn MS 19 - VI:
RECENT ADVANCES AND CHALLENGES FOR THE PRESERVATION
OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST
NATURAL AND ANTHROPIC RISKS

Monday
16:30 - 18:30

Olympia

MS Organizers: *Daniela Addessi, Michele Betti, Nicola Cavalagli, Francesco Clementi, Antonio Formisano, Gabriele Milani*

Chair: *Antonio Formisano*

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- C 21508** A PROCEDURE FOR THE PROBABILISTIC ASSESSMENT OF MASONRY STRUCTURES UNDER TSUNAMI
*Panagiotis G. Asteris, Marco F. Ferrotto, **Liborio Cavaleri***
- C 20159** COMPRESSIVE BEHAVIOUR OF A CIRCULAR UNBONDED FIBER-REINFORCED ELASTOMERIC ISOLATOR (UFREI)
*Gaetano Pianese, **Gabriele Milani**, Antonio Formisano*
- C 21426** DAMAGE PATTERN ANALYSIS OF THE BASILICA DI COLLEMAGGIO USING AEM MICRO-MODELING
Cosimo Pellecchia, Alessandro Cardoni, Gian Paolo Cimellaro, Ahmed Amir Khalil
- C 21340** PROPOSAL OF A GENERAL METHODOLOGICAL APPROACH FOR THE SEISMIC ASSESSMENT OF HISTORICAL MASONRY AGGREGATES
*Maurizio Acito, **Martina Buzzetti**, Giuseppe Alfredo Cundari, Gabriele Milani*
- C 20980** ON THE IN-PLANE FLEXURAL RESPONSE OF CANTILEVER UNREINFORCED CLAY BRICKWORK MASONRY WALL PANELS
Hisham Tariq, Mohammad Amir Najafgholipour, Vasilis Sarhosis, Gabriele Milani
- C 21032** SEISMIC FRAGILITY EVALUATION OF TYPOLOGICAL MASONRY AGGREGATES ACCOUNTING FOR LOCAL COLLAPSE MECHANISMS
*Valeria Leggieri, Francesco Salvatore Liguori, **Sergio Ruggieri**, Antonio Bilotta, Antonio Madeo, Siro Casolo, Giuseppina Uva*

COMPdyn MS 6 - I
EXPERIMENTAL MEASUREMENTS AND NUMERICAL SIMULATION IN
THE FIELD OF EARTHQUAKE ENGINEERING AND STRUCTURAL
DYNAMICS – NEW STRUCTURES AND STRUCTURAL RETROFITTING

Tuesday
16:30 - 18:30

Attica

MS Organizers: *George C. Manos, Konstantinos Katakalos*

Chair: *Konstantinos Katakalos*

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- C 20741** DYNAMIC ANALYSIS AND EXPERIMENTAL VERIFICATION OF THE MECHANICAL CHARACTERISTICS OF VARIABLE CROSS-SECTION INDUSTRIAL PYLONS
*Konstantinos Katakalos, George Manolis, George Manos, Lazaros Melidis, **Georgios Dadoulis**, Vasil Kavardzikov, Georgi Stoilov*
- C 20887** TESTING OF CONCRETE OR METAL HOLLOW POLES EMPLOYING PSEUDO-DYNAMIC OR FATIGUE LOADS
*George Manos, Dimitrios Mpoufidis, Lazaros Melidis, **Konstantinos Katakalos***
- C 20888** OUT OF PLANE BEHAVIOR OF THERMAL INSULATED MASONRY WALLS AS PART OF BUILDING RETROFITTING
*George Manos, Konstantinos Katakalos, **Lazaros Melidis**, Anthimos Anastasiadis*
- C 20918** PRELIMINARY EXPERIMENTAL TESTS ON STEEL-CONCRETE HYBRID COUPLED WALL SUBCOMPONENTS
*Francesco Morelli, **Agnese Natali**, Fabrizio Scozzese, Nicola Ceccolini, Alessandro Zona*

- C 21017** EXPERIMENTAL AND NUMERICAL STUDY ON THE INFLUENCE OF LARGE LONGITUDINAL REBAR RATIOS ON THE CRACKING CHARACTERISTICS OF R/C ELEMENTS
Theodoros Chrysanidis

COMPdyn TS 31 - I
SEISMIC RISK AND DAMAGE ASSESSMENT

Tuesday
16:30 - 18:30

Templars

Chair: *Matthew DeJong, Lorenzo Hofer*

- C 20511** SEISMIC RISK ASSESSMENT OF ELEVATED RAILWAY INFRASTRUCTURE INCLUDING TRAIN-STRUCTURE INTERACTION
Miguel Gomez, Matthew DeJong

- C 22214** A NEW METHODOLOGY FOR COMBINED SEISMIC AND ENERGY ASSESSMENT OF BUILDINGS
Sotiria Stefanidou, Olga Markogiannaki, Anna Karatzetzou, Charoula Zaki, Anna Diamanti

- C 21409** SEISMIC RISK ANALYSIS OF DISTRIBUTION LINEAR INFRASTRUCTURES
Mariano Angelo Zanini, Chiara Vianello, Flora Faleschini, Lorenzo Hofer, Carlo Pellegrino, Giuseppe Maschio

- C 21274** PERFORMANCE EVALUATION OF A MASONRY ARCH BRIDGE UNDER COMBINED SCOUR AND TRAFFIC LOADING
Prateek Kumar Dhir, Daniele Losanno, Fabrizio Scozzese, Enrico Tubaldi, Fulvio Parisi

- C 20092** SEISMIC ASSESSMENT OF HISTORICAL COMPLEX TOWERS. THE CASE STUDY OF THE GIRALDA TOWER
Emilio Romero-Sánchez, María-Victoria Requena-García-Cruz, Antonio Morales-Esteban

- C 20659** ESTIMATION OF SEISMIC DESIGN FACTORS FOR RC-SMRF BUILDINGS IN SEISMIC RISK FRAMEWORK
Suman Banerjee, Devendra Singh, Saurabh Shiradhonkar

COMPdyn MS 42 - II
COMPUTATIONAL METHODS FOR INVERSE PROBLEMS IN STRUCTURES AND GEOPHYSICS

Tuesday
16:30 - 18:30

Kallirhoe 1

MS Organizers: *Dan Givoli, Haim Waisman*

Chair: *Dan Givoli, Haim Waisman*

- C 20070** ADAPTIVE SPECTRAL DECOMPOSITIONS FOR INVERSE MEDIUM PROBLEMS
Daniel Baffet, Yannik Gleichmann, Marcus Grote

- C 20515** IMPROVING COMPLEX PERFORMANCE OBJECTIVES OF TOPOLOGY-OPTIMIZED DESIGNS THROUGH INTERACTIVE HUMAN INPUT
Dat Ha, Gillian Schiffer, Josephine Carstensen

- C 20205** TOPOLOGY OPTIMIZATION OF THIN-WALLED BEAMS PRODUCED BY EXTRUSION
Ameer Marzok, Haim Waisman

- C 20062** FLAW IDENTIFICATION IN AN ELASTIC SHEET
Amit Sayag, Dan Givoli

DAY 2

TUESDAY 13 JUNE

C 20201 ADAPTIVE VOXEL-BASED HIGH-ORDER FULL WAVEFORM INVERSION FOR VOID IDENTIFICATION USING A FINITE CELL APPROACH

Tim Bürchner, Philipp Kopp, Stefan Kollmannsberger, Ernst Rank

C 20418 INVERSE DYNAMICS OF FLEXIBLE MECHANICAL SYSTEMS GOVERNED BY QUASI-LINEAR HYPERBOLIC PARTIAL DIFFERENTIAL EQUATIONS

Timo Ströhle, Peter Betsch

COMPdyn MS 1 - III
NOVEL TECHNIQUES AND APPROACHES FOR SEISMIC PROTECTION OF STRUCTURES WITH ISOLATION AND/OR ENERGY DISSIPATION DEVICES

Tuesday
16:30 - 18:30

Kallirhoe 2

MS Organizers: *Enrico Tubaldi, Laura Ragni, Dario De Domenico, Daniele Losanno, Hamid Ahmadi*

Chair: *Laura Ragni, Daniele Losanno*

C 20711 OPTIMUM DESIGN OF ROCKING WALL COUPLED WITH BUILDING UNDER STOCHASTIC SEISMIC GROUND MOTION

Michela De Angelis, Giuseppe Quaranta, Giulia Angelucci, Stefano Pampanin, Fabrizio Mollaioli

C 21083 BUILDING BACK BETTER: THE CASE STUDY OF THE FAZZINI COLLEGE

Laura Gioiella, Fabio Micozzi, Laura Ragni, Andrea Dall'Asta

C 21353 RETROFITTING OF R.C. FRAME BUILDINGS WITH DOUBLE CON-CAVE CURVED SURFACE ISOLATOR SLIDERS CHARACTERIZED BY OVER-STROKE DISPLACEMENT CAPACITY

Felice Carlo Ponso, Antonio Di Cesare, Nicla Lamarucciola

C 21085 DEVELOPMENT OF A TUNED LIQUID PARTICLE DAMPER WITH OPTIMISED DAMPING CHARACTERISTICS

Sebastian Völkel, Kersten Latz

C 20438 SEISMIC ISOLATION OF COMPOSITE BRIDGE WITH SKEWED DECK

Mohammad Mahdi Mohammadi Dehnavi, Alessandra De Angelis, M.R. Pecce

COMPdyn MS 39
SHM FOR TRANSPORT INFRASTRUCTURE RESILIENCE

Tuesday
16:30 - 18:30

Abbey

MS Organizers: *Marco Domaneschi, Eleni Chatzi, Yan Xu, Stergios Aristoteles Mitoulis*

Chair: *Marco Domaneschi*

C 21306 RESTORATION OF A LANDMARK BALANCED CANTILEVER BRIDGE CONSIDERING DIFFERENT RESILIENCE AND SUSTAINABILITY STRATEGIES

Marco Domaneschi, Stergios Aristoteles Mitoulis, Raffaele Cucuzza, Valentina Villa, Roberta Di Bari, Gopika Siva

C 20960 SYSTEM IDENTIFICATION OF LONG-SPAN BRIDGES VIA SYNCHRO-SQUEEZED ADAPTIVE WAVELET TRANSFORM BASED OPTIMIZED MULTIPLE ANALYTICAL MODE DECOMPOSITION

Hongya Qu, Mwenda Lomthundzi, Yan Xu, An Chang

C 20962 MTINSAR, STRUCTURAL INFORMATION AND ENVIRONMENTAL DATA TO ESTIMATE DEFORMATIONS OVER TIME OF SIMPLY SUPPORTED CONCRETE GIRDER BRIDGES: A FRAMEWORK PROPOSAL

Mirko Calò, Sergio Ruggieri, Andrea Nettis, Vincenzo Massimi, Vincenzo Barbieri, Sergio Samarelli, Giuseppina Uva

C 20220 CONSIDERING THE EFFECT OF SPATIALLY INHOMOGENEOUS CORROSION STUDY ON THE SEISMIC PERFORMANCE OF BRIDGE PIERS

Yin Gu, Qixin Fan, Xiangdong Dai, Bin Huang, Tao Xu

**UNCECOMP MS 3 - II
BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE
AND ENGINEERING**

Tuesday
16:30 - 18:30

Ground

MS Organizers: *Oindrila Kanjilal, Iason Papaioannou, Daniel Straub, Geert Lombaert, Costas Papadimitriou*

Chair: *Iason Papaioannou, Costas Papadimitriou*

U 19859 ADAPTIVE DOUBLE-LOOP MONTE CARLO GRADIENT ESTIMATORS FOR BAYESIAN OPTIMAL EXPERIMENTAL DESIGN

Andre Carlon, Joakim Beck, Raul Tempone

U 19795 EVALUATION OF MODEL BIAS IDENTIFICATION APPROACHES BASED ON BAYESIAN INFERENCE AND APPLICATIONS TO DIGITAL TWINS

Daniel Andrés Arcones, Martin Weiser, Faidon-Stelios Koutsourelakis, Jörg F. Unger

U 19796 A NOVEL VARIATIONAL BAYESIAN APPROACH TO STOCHASTIC SUBSPACE IDENTIFICATION

Brandon O'Connell, Max Champneys, Elizabeth Cross, Timothy Rogers

U 19861 SEQUENTIAL MONTE CARLO WITH A GENERALIZED PRECONDITIONED CRANK NICHOLSON MCMC FOR HIGH-DIMENSIONAL BAYESIAN MODEL UPDATING

Barbara Carrera, Iason Papaioannou

U 19899 INFLUENCE OF THE CHOICE OF THE SEISMIC INTENSITY MEASURE ON FRAGILITY CURVES ESTIMATION IN A BAYESIAN FRAMEWORK BASED ON REFERENCE PRIOR

Antoine Van Biesbroeck, Clément Gauchy, Cyril Feau, Josselin Garnier

U 19920 OPTIMISATION UNDER UNCERTAINTY OF ALL-SOLID-STATE-BATTERY TORTUOSITIES BASED ON MULTIMODAL PARTICLE SIZE DISTRIBUTIONS AND NON-DIFFERENTIABLE STOCHASTIC FORWARD MODELS

Gil Robalo Rei, Christoph P. Schmidt, Wolfgang A. Wall

**COMPDYN TS 19 - I
REPAIR AND RETROFIT OF STRUCTURES**

Tuesday
16:30 - 18:30

Room 1A

Chair: *Konstantinos G. Megalooikonomou, Francesco Nigro*

C 20021 INELASTIC TIME-HISTORY ANALYSES OF FRP-RETROFITTED BRIDGE COLUMNS SUBJECTED TO NEAR-FIELD GROUND MOTIONS

Konstantinos G. Megalooikonomou

C 20551 SEISMIC RESPONSE ASSESSMENT OF AN EXISTING RC STRUCTURE RETROFITTED WITH STEEL EXOSKELETONS

Francesco Nigro, Gaetano Della Corte, Enzo Martinelli

C 20780 SEISMIC ASSESSMENT AND STRENGTHENING OF THE REMAINING BEIRUT PORT SILOS DAMAGED AFTER THE 2020 AUGUST BLAST- A CASE STUDY

Sahar Ismail, Wassim Raphael, Fouad Kaddah

- C 21262** SYNTHETIC DATA GENERATION FOR THE CREATION OF BRIDGE DIGITAL TWINS WHAT-IF SCENARIOS
Alejandro Jiménez Rios, Vagelis Plevris, Maria Nogal
- C 21067** ECONOMIC EFFECTS OF SEISMIC RETROFIT STRATEGY ON RC SCHOOL BUILDINGS BASED ON COST-BENEFIT ANALYSIS
Insub Choi, HakJong Chang, JunHee Kim
- C 21523** RETROFITTING DAMAGED BUILDINGS UNDER SEISMIC MAINSHOCK-AFTERSHOCK SEQUENCE
Benyamin Mohebi, Farzin Kazemi, Neda Asgarkhani
- C 21158** SEISMIC UPGRADING OF TELECOMMUNICATION CENTER IN SKOPJE, NORTH MACEDONIA
Veronika Shendova, Aleksandar Zurovski, A. Zlateski, E. Delova, G. Jekic, Roberta Apostolska, Z. Bozinovski

COMPdyn MS 13

MONITORING AND LIFE CYCLE PERFORMANCE OF RAILWAY BRIDGES

Tuesday
16:30 - 18:30

Room 1B

MS Organizers: *Eftychia Apostolidi, Eleni Chatzi, Alfred Strauss*

Chair: *Eftychia Apostolidi, Charikleia Stoura*

- C 20349** INDIRECT MONITORING OF RAILWAY BRIDGES USING THE CONTINUOUS TRACK MONITORING SYSTEM CTM2.0
Steven Robert Lorenzen, Klaus Ulrich Wolter, Maximilian Michael Rupp, Günther Grunert, Eftychia Apostolidi, Jens Schneider
- C 20624** ON-BOARD MONITORING OF RAIL BRIDGE DYNAMICS BASED ON FUSION OF SUBSPACE IDENTIFICATION WITH RAIL ROUGHNESS EFFECTS
Charikleia Stoura, Vasilis Dertimanis, Eleni Chatzi
- C 20409** A MACHINE LEARNING LEVERAGED AND MINIMAL HARDWARE-BASED TRAIN AND LOAD RECOGNITION SYSTEM
Jascha Brötzmann, Christian-Dominik Thiele, Maximilian Rupp, Mingchen Xing, Uwe Rüppel
- C 20708** QUICK BRIDGE WEIGH-IN-MOTION: A VALIDATION UNDER REAL OPERATING CONDITIONS
Henrik Riedel, Andrei Firus, Steven Lorenzen, Maximilian Michael Rupp, Max Johannes Alois Fritzsche, Michael Vospernig, Eftychia Apostolidi, Jens Schneider
- C 21257** CASE STUDY: IMPACT OF ROUTE SPECIFIC LOAD MODELS AND NUMERICAL MODEL CALIBRATION ON FATIGUE LIFETIME ASSESSMENT OF AN EXISTING RAILWAY BRIDGE
Stefan Lachinger, Sebastian Pissermayr, Marian Ralbovsky, Alois Vorwagner
- C 21499** NOVELTY DETECTION OF RAILWAY BRIDGES USING POWER DENSITY SPECTRUM AND MACHINE LEARNING: A CASE STUDY ON THE KW 51 BRIDGE IN BELGIUM
Maximilian Michael Rupp, Leon Schmeiser, Kevin Gerhard, Jascha Brötzmann, Steven Robert Lorenzen, Henrik Riedel, Jens Schneider
- C 21959** MONITORING OF A RAILWAY BRIDGE RECURRING TO COSTUMIZED SENSORS
Chanalisa Salvi, Carlos Moutinho, Borja Conde, Manuel Cabaleiro, Elsa Caetano

**COMPDYN TS 3 - II
BRIDGE DYNAMICS**
**Tuesday
16:30 - 18:30**
Room 2A

 Chair: *Olga Markogiannaki, Vassilis K. Papanikolaou*

- C 22588** A DAMAGE DETECTION APPROACH TO ASSESS THE PERFORMANCE LEVEL OF R/C BRIDGES USING VIBRATIONAL RESPONSE MEASUREMENTS
*Konstantinos Mixios, **Olga Markogiannaki**, Sotiria Stefanidou, Vassilis K. Papanikolaou*
- C 22213** DESIGNING A LOW-COST WIRELESS SENSING SYSTEM FOR REAL TIME DAMAGE ASSESSMENT OF R/C BRIDGES
Vassilis K. Papanikolaou, Konstantinos Mixios, Sotiria Stefanidou, Olga Markogiannaki
- C 21320** IMPROVING RELIABILITY OF UZBEKISTAN'S TRANSPORTATION INFRASTRUCTURE UNDER IMPACT OF NATURAL HAZARDS BY ANALYSIS OF ITS VULNERABILITY, MONITORING AND MODELING
Ulugbek Shermukhamedov, Zukhritdin Ergashev, Shakhzod Takhirov, Abdurakhim Abdullaev
- C 21024** OPTIMIZED DYNAMIC DESIGN RULES FOR HIGH-SPEED BRIDGES BY USING DIGITAL TWIN
Vincent Mathouraparsad, Muriel Ragueneau, Huyen Nguyen
- C 20995** THE EFFECT OF GROUND MOTION INCIDENCE ANGLE FOR SCOURED HIGHWAY BRIDGES
Serenay Ateş, Özgür Avşar
- C 21048** EXTENDED MODIFIED BRIDGE SYSTEM METHOD FOR VEHICLE-BRIDGE INTERACTION: TREATMENT OF ROTATIONAL DEGREES OF FREEDOM
Hossein Homaei, Elias G. Dimitrakopoulos
- C 20552** INTERACTION STUDY OF CWR TRACK WITH BALLASTED VIADUCT AT ROHTAK- GOHANA RAILWAY LINE UNDER TRAFFIC AND THERMAL LOADINGS
Nupur Saxena, Samit Ray-Chaudhuri

**COMPDYN TS 32
SEISMIC RELIABILITY ANALYSIS**
**Tuesday
16:30 - 18:30**
Room 2B

 Chair: *Jafar Jafari-Asl*

- C 20842** ASSESSING BUILDING'S POST-EARTHQUAKE FUNCTIONAL RECOVERY ACCOUNTING FOR UTILITY SYSTEMS DISRUPTION
*Negar Mohammadgholibeyki, **Maria Koliou**, Abbie Liel*
- C 21156** FAILURE PROBABILITY ESTIMATION: INSIGHT OR NUMBERS?
Karl Breitung
- C 20586** KOOPMAN OPERATOR FOR TIME-DEPENDENT RELIABILITY ANALYSIS
N. Navaneeth, Souvik Chakraborty
- C 20671** OPERATOR LEARNING FRAMEWORK FOR UNCERTAINTY QUANTIFICATION AND RELIABILITY ANALYSIS
Shailesh Garg, Souvik Chakraborty
- C 20435** EFFICIENT RELIABILITY METHOD FOR PROBABILISTIC INTEGRITY ASSESSMENT OF CORRODED PIPELINES
Jafar Jafari-Asl, Mohamed El Amine Ben Seghier
- C 20501** RELIABILITY ANALYSIS OF EMBEDDED BASE CONNECTIONS
Pablo Torres-Rodas, Fernando Gomez

**COMPDYN MS 2 - I
ADVANCES IN THE DYNAMIC RESPONSE ANALYSIS, MONITORING,
AND MITIGATION OF WIND TURBINES**

Tuesday
16:30 - 18:30

Room 3A

MS Organizers: *Agathoklis Giaralis, Giuseppe Failla*

Chair: *Giuseppe Failla*

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- C 20211** SEISMIC RESPONSE MITIGATION OF ONSHORE WIND TURBINES SUBJECTED TO PULSE-LIKE GROUND MOTIONS USING A TWO-TERMINAL TUNED INERTER DAMPER
Gioacchino Alotta, Chiara Biondo, Agathoklis Giaralis, Giuseppe Failla
- C 20236** MONITORING MOORING(MONIMOOR) LINES OF FLOATING STRUCTURES USING DEEP LEARNING BASED APPROACHES
Smriti Sharma, Vincenzo Nava, Nicolas Gorostidi
- C 20431** AN IMPLEMENTATION OF MULTI-SUPPORT SEISMIC INPUT MOTION INTO OPENFAST FOR THE EARTHQUAKE ANALYSIS OF OFFSHORE WIND TURBINES
Carlos Romero-Sánchez, Luis A. Padrón
- C 20597** DESIGN AND PERFORMANCE OF A PASSIVE VIBRATION CONTROL DEVICE FOR HAWT
Ettore Sorge, Carlos Riascos, Nicola Caterino, Cristoforo Demartino, Christos Thomas Georgakis
- C 20788** SEISMIC PERFORMANCE ASSESSMENT OF FLOATING OFFSHORE WIND TURBINES SUPPORTED BY TENSION LEG PLATFORMS
Sadra Amani, Athul Prabhakaran, Subhamoy Bhattacharya
- C 21120** SUBSTRUCTURE OPTIMIZATION OF A 10MW FLOATING WIND TURBINE FOR INSTALLATIONS IN ITALIAN SEAS
Giulio Ferri, Enzo Marino

**COMPDYN MS 36
EXPERIMENTAL TESTING ON SEISMIC ISOLATION AND ENERGY
DISSIPATION DEVICES**

Tuesday
16:30 - 18:30

Room 3B

MS Organizers: *Marco Furinghetti, Alberto Pavese, Paolo Castaldo*

Chair: *Marco Furinghetti, Paolo Castaldo*

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- C 20298** STATIC AND DYNAMIC EXPERIMENTAL VALIDATIONS OF THE LATERAL IMPACT RESILIENT DOUBLE CONCAVE FRICTION PENDULUM (LIR-DCFP) BEARING
Gaspar Auad, Paolo Castaldo, José L. Almazán, Diego Quizanga
- C 21210** ANALYSIS OF THE FORCE RESPONSE OF BEARING DEVICES FOR BRIDGE STRUCTURES
Marco Furinghetti, Simone Reale, Matt J. Fox, Yuan Fan, Chiara Casarotti, Alberto Pavese
- C 20718** SHAKE-TABLE TESTING OF LOW-COST, HIGH-PERFORMANCE SEISMIC ISOLATORS BASED ON ROLLING RUBBER SPHERES
Antonios A. Katsamakas, Michalis F. Vassiliou
- C 20841** BEHAVIOR OF COMPLEX CURVED SURFACE SLIDER IN DESIGN AND EXPERIMENTAL SITUATION
Frederik Bomholt, Toshihisa Mano
- C 21140** EXPERIMENTAL TESTS OF VARIOUS TYPES OF SEISMIC ISOLATION SYSTEMS
Mohammed Mohammed, Scott Darling, Ahmed Ibrahim, Ahmed Atiek

C 21461 EXPERIMENTAL AND FINITE ELEMENT ANALYSIS OF THE CYCLIC BEHAVIOUR OF LINEAR DISSIPATIVE DEVICES

Salvatore Pagnotta, Muhammad Ahmed, Piero Colajanni

UNCECOMP MS 1
UNCERTAINTY QUANTIFICATION IN VIBRATION BASED
MONITORING AND STRUCTURAL DYNAMICS SIMULATIONS

Tuesday
16:30 - 18:30

Room 4A

MS Organizers: *Eleni Chatzi, Manolis Chatzis, Vasilis Dertimanis, Geert Lombaert, Costas Papadimitriou*

Chair: *Eleni Chatzi*

U 19820 UTILIZING DISTRIBUTED FIBER OPTIC STRAIN DATA FOR BAYESIAN CALIBRATION OF A CARGO DECK MODEL

Patrick Brewick

U 19615 PHYSICS-CONSTRAINED TRANSFER LEARNING WITH BAYESIAN MULTILEVEL MODELS

Lawrence Bull, Matthew Jones, Andrew Duncan, Elizabeth Cross, Mark Girolami

U 19579 THE USE OF HAMILTONIAN MONTE CARLO FOR BAYESIAN MODEL UPDATING WITH STRUCTURAL RELIABILITY METHODS

Danko Jerez, Hector Jensen, Cristóbal Figueroa, Michael Beer

U 19731 CORRELATED GAUSSIAN PROCESS LATENT FORCE MODELS FOR RECOVERING MULTIPLE FORCES

Matthew Jones, Timothy Rogers

U 19801 A LATENT RESTORING FORCE APPROACH TO THE IDENTIFICATION OF HYSTERETIC SYSTEMS

Joe D Longbottom, Elizabeth J Cross, Timothy J Rogers, Max Champneys

U 19924 TUNING OF KALMAN FILTER NOISE PARAMETERS FOR UNCERTAINTY QUANTIFICATION IN INPUT-STATE ESTIMATION OF MDOF SYSTEMS

Marios Panias, Luigi Caglio, Sebastian T. Glavind, Amirali Sadeqi, Michael Havbro Faber, Henrik Stang, Evangelos Katsanos

U 20017 RESPONSE RECONSTRUCTION IN BRIDGES USING ON-BOARD MEASUREMENTS FROM PASSING VEHICLES

Filippos Filippitzis, Ho Man Siu, Charikleia Stoura, Costas Papadimitriou, Elias G. Dimitrakopoulos

DAY 3

WEDNESDAY 14 JUNE

UNCECOMP MS 7 - I UNCERTAINTY QUANTIFICATION, DATA ASSIMILATION, MACHINE LEARNING, AND THEIR INTEGRATIONS FOR EFFECTIVE PREDICTIVE MODELS?

Wednesday
9:00 - 11:00

Olympia

MS Organizers: *Didier Lucor, Rossella Arcucci, Bojana Rosic*

Chair: *Didier Lucor*

-
- U 19650** DATA LEARNING: INTEGRATING DATA ASSIMILATION AND MACHINE LEARNING FOR DIGITAL TWINS
Rossella Arcucci
- U 19744** BAYESIAN ANOMALY DETECTION IN FRACTIONAL DIFFUSION PROBLEMS
Hasnaa Alzahrani, George Turkiyyah, Olivier Le Maître, Omar Knio
- U 19836** MULTI-FIDELITY GAUSSIAN PROCESS SURROGATE MODELING FOR FLOW THROUGH STENOSIS
Shaima Magdaline Dsouza, Saleh Rezaeiravesh, Philipp Schlatter, Lisa Prah Wittberg, Christian Gasser
- U 19568** NEW DEPENDENT MEASURES OF ASSOCIATION BETWEEN DYNAMIC MODEL OUTPUTS AND INPUTS
USING KERNELS
Matieyendou Lamboni
- U 19684** GENERALIZED KALMAN FILTER BASED REINFORCEMENT LEARNING
Vasos Arnaoutis, Bojana Rosic
- U 19688** DATA ASSIMILATION FOR THE HELMHOLTZ PROBLEM WITH STATISTICAL REDUCED ORDER MODELING
Lucas Hermann, Ulrich Römer
- U 19702** SOLVING PARAMETRIC PDES VIA PARSIMONIOUS DISCRETISATIONS: APPLICATION TO UNCERTAINTY
QUANTIFICATION AND DATA ASSIMILATION
Damiano Lombardi, Miguel Fernandez, Sébastien Riffaud

COMPDYN MS 6 - II EXPERIMENTAL MEASUREMENTS AND NUMERICAL SIMULATION IN THE FIELD OF EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS – NEW STRUCTURES AND STRUCTURAL RETROFITTING

Wednesday
9:00 - 11:00

Attica

MS Organizers: *George C. Manos, Konstantinos Katakalos*

Chair: *Konstantinos Katakalos*

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- C 21175** EXPERIMENTAL AND NUMERICAL STUDY OF THE PERFORMANCE OF EXISTING PRESTRESSED
CYLINDRICAL CONCRETE PIPES STRENGTHENED WITH REINFORCED CONCRETE OR CARBON-
REINFORCED FIBER POLYMER JACKETS
George Manos, Lazaros Melidis, Vassilios Soulis, Konstantinos Katakalos
- C 21194** STRUCTURAL HEALTH MONITORING(SHM) OF POLYFYTOS BRIDGE AND EVALUATION OF ITS DYNAMIC
PROPERTIES
*Alexandros Chortis, Ioannis Ramandanis, Georgios Dadoulis, Lazaros Melidis, George Manos,
Konstantinos Katakalos*
- C 20889** THE SEISMIC PERFORMANCE OF THE DAMAGED BELL TOWER OF KOUROUKLATA IN KEFALONIA,
GREECE DURING THE 2014 EARTHQUAKE SEQUENCE – A PROPOSAL FOR RETROFITTING
George Manos, Lampros Kotoulas
- C 20380** STRUCTURAL HEALTH MONITORING OF THE FATIGUE BEHAVIOR OF FRP STRENGTHENED RC BEAMS
Barbara Charalambidi, Konstantinos Providakis, Konstantinos Katakalos, Alexandros Charalampidis

- C 20599** C-FRP ROPES AS EXTERNAL STRENGTHENING REINFORCEMENT OF RC COLUMNS
Emmanouil Golias, Grigorios Manoukas, Constantin Chalioris, Chris Karayannis

COMPdyn TS 31 - II
SEISMIC RISK AND DAMAGE ASSESSMENT

Wednesday
9:00 - 11:00

Templars

Chair: *Paolo Lonetti, Alessandro Cardoni*

- C 20971** NUMERICAL ANALYSIS OF BRIDGE STRUCTURES UNDER EXTREME WAVE-INDUCED LOADS
Fabrizio Greco, Paolo Lonetti, Umberto De Maio
- C 21410** SEISMIC VULNERABILITY ASSESSMENT OF AN URBAN NATURAL GAS NETWORK
Alessandro Cardoni, Sebastiano Marasco, Gian Paolo Cimellaro
- C 21408** A CAT BOND-BASED SOLUTION FOR SEISMIC RISK TRANSFER IN ITALY
Lorenzo Hofer, Mariano Angelo Zanini, Paolo Gardoni
- C 20090** A MODEL FOR THE STRUCTURAL AND SEISMIC ASSESSMENT OF THE MOSQUE-CATHEDRAL OF CORDOBA
Maria-Victoria Requena-Garcia-Cruz, Emilio Romero-Sánchez, Antonio Morales-Esteban, N. Fernández-Pérez
- C 21003** TYPOLOGICAL FRAGILITY ASSESSMENT OF PRESTRESSED CONCRETE GIRDER BRIDGES SUBJECTED TO TRAFFIC LOADS AFFECTED BY CORROSION
Alessandro Nettis, Andrea Nettis, Sergio Ruggieri, Giuseppina Uva
- C 21204** THE CHALLENGES AND ADVANTAGES OF MACRO MODELING IN ANSYS SOFTWARE FOR SEISMIC VULNERABILITY ASSESSMENT OF HISTORIC MASONRY STRUCTURES
Hatice Ayşegül Demir, Kutay Yüçetürk, Engin Aktaş, Mine Hamamcioğlu-Turan

COMPdyn MS 17 - I
STEEL JOINTS BEHAVIOR UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS

Wednesday
9:00 - 11:00

Kallirhoe 1

MS Organizers: *Roberto Tartaglia, Mario D'Aniello, Massimo Latour*

Chair: *Roberto Tartaglia, Mario D'Aniello*

- C 21327** BEHAVIOUR OF JOINTS WITH FRICTION DAMPERS UNDER COLUMN LOSS SCENARIO
Roberto Tartaglia, Mario D'Aniello, Roberto Carlevaris, Raffaele Landolfo
- C 21182** EFFECT OF CONSTRUCTION DETAILS ON THE IN-PLANE SEISMIC RESPONSE OF DRYWALL FAÇADES
Alessia Campiche
- C 20703** EXPERIMENTAL RESPONSE OF A LARGE-SCALE STEEL STRUCTURE EQUIPPED WITH INNOVATIVE COLUMN BASES
Elena Elettore, Fabio Freddi, Massimo Latour, Vincenzo Piluso, Gianvittorio Rizzano
- C 20656** STEEL BRACING SYSTEMS TO REDUCE THE SEISMIC VULNERABILITY OF LWS SUSPENDED CEILINGS: EXPERIMENTAL CHARACTERISATION
Alessandro Prota, Amirhossein Nikpour

DAY 3

WEDNESDAY 14 JUNE

C 21241 ON THE INFLUENCE OF SEMIRIGID JOINTS ON THE SEISMIC RESPONSE OF ONE STOREY STEEL STRUCTURES

Greta Agata Veneri, Gianfranco De Matteis, Giuseppe Brando

C 20605 STRENGTH OF CONNECTIONS BETWEEN SHS COLUMNS AND THROUGH PLATES

*Atsushi Sato, Massimo Latour, Amparo de la Peña, **Sabatino Di Benedetto**, Antonella Bianca Francavilla, Gianvittorio Rizzano*

COMPdyn MS 7 - I
SUSTAINABLE STRENGTHENING INTERVENTIONS TO PREVENT FAILURE IN UNREINFORCED MASONRY STRUCTURES AND INFRASTRUCTURES

Wednesday
9:00 - 11:00

Kallirhoe 2

MS Organizers: *Claudia Casapulla, Linda Giresini, Omar Alshawa, Francesca Taddei, Ehsan Noroozinejad*

Chair: *Linda Giresini, Francesca Taddei*

C 21288 A TWO-STEP APPROACH FOR THE SEISMIC ASSESSMENT OF MASONRY STRUCTURES ACCOUNTING FOR THE ACTUAL MASONRY PATTERN

*Simon Szabò, **Marco F. Funari**, Antonio Maria D'Altri, Stefano de Miranda, Paulo B. Lourenço*

C 21385 INVESTIGATION OF THE EFFECT OF TIE-RODS IN ROCKING MASONRY FAÇADES INCLUDING THE DYNAMIC SOIL-STRUCTURE INTERACTION

Francesca Taddei, Linda Giresini, Gerhard Müller

C 20475 ISO-CLASS CURVES FOR THE ASSESSMENT OF SEISMIC/ENERGY RETROFITTING OF AN EXISTING MASONRY BUILDING THROUGH A TIMBER FRAME SYSTEM

Linda Giresini, Francesca Corona, Gabriele Guerrini, Francesco Graziotti

C 20822 EXPERIMENTAL PULL-OUT BEHAVIOR OF HELICOIDAL STEEL BARS IN MASONRY

*Manuela Scamardo, Sara Cattaneo, **Pietro Crespi***

C 20645 TWO-BODIES VERTICAL SPANNING WALL RESTRAINED BY AN ELASTIC TIE ROD

Giacomo Destro Bisol, Sanjeev Prajapati, Omar AlShawa, Luigi Sorrentino

COMPdyn TS 5 - I
DYNAMICS OF CONCRETE AND MASONRY STRUCTURES

Wednesday
9:00 - 11:00

Abbey

Chair: *Shenghan Zhang, Huan He*

C 20635 INVESTIGATION ON THE DYNAMIC BEHAVIOR OF WEAKLY CONNECTED MODULAR BUILDINGS

Shenghan Zhang, Jun Chen

C 20791 VERIFICATION OF MATERIAL MODELS FOR MASONRY WALLS IN NONLINEAR PUSHOVER ANALYSIS

Huan He, Sander J. H. Meijers

C 20457 VULNERABILITY ASSESSMENT OF BUILDINGS BASED ON THE PSEUDO-DYNAMIC TESTING METHOD WITH SUB-STRUCTURING: APPLICATION TO PROGRESSIVE COLLAPSE

Jean-Baptiste Charrié, David Bertrand, Cédric Desprez, Stéphane Grange

C 20680 MODELING OF FRAMES WITH HYBRIDFEM, A PSEUDO-DISCRETE-FINITE MODEL INCLUDING NONLINEAR GEOMETRIC EFFECTS AND NONLINEAR MATERIALS

Igor Bouckaert, Michele Godio, João Pacheco de Almeida

- C 20105** PERFORMANCE COMPARISON OF MASONRY WALLS WITH RECTANGULAR BRICKS AND INTERLOCKING BRICKS – STATIC LOADING TEST AND DYNAMIC ANALYSIS USING DEM -
Aiko Furukawa, Junji Kiyono

COMPdyn MS 2 - II**ADVANCES IN THE DYNAMIC RESPONSE ANALYSIS, MONITORING, AND MITIGATION OF WIND TURBINES**

Wednesday

9:00 - 11:00

GroundMS Organizers: *Agathoklis Giaralis, Giuseppe Failla*Chair: *Agathoklis Giaralis*

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- C 20909** LONG-TERM STRUCTURAL HEALTH MONITORING OF ONSHORE WIND TURBINES USING FIBER OPTIC STRAIN SENSING
James Xu, Linqing Luo, Chien-Chih Wang, Kenichi Soga, Matthew DeJong
- C 21259** INTEGRATED WEIGHT-MINIMAL DESIGN OF TOWER, MONOPILE SUBSTRUCTURE, AND DYNAMIC VIBRATION ABSORBER IN A 15MW BENCHMARK OFFSHORE WIND TURBINE
Agathoklis Giaralis, Zixiao Wang, Tim Camp, Jean-Christophe Gilloteaux
- C 20234** REDESIGNING THE TRANSITION PIECE FOR MITIGATING THE SEISMIC RESPONSE OF OFFSHORE WIND TURBINES
Rohollah Rostami, Alessandro Tombari
- C 20370** SHORT-TERM DAMPING IDENTIFICATION OF WIND TURBINE BLADE MODES UNDER ENVIRONMENTAL AND OPERATIONAL VARIABILITY USING GAUSSIAN PROCESS TIME SERIES MODELS
Kristian Ladefoged Ebbenhøj, Konstantinos Tatsis, Philippe Couturier, Jon Juel Thomsen, Eleni Chatzi
- C 20378** VIBRATION-BASED VIRTUAL SENSING FOR FATIGUE-LIFE PREDICTION – BASELINE AND POTENTIAL
Mads Greve Pedersen, Isaac Farreras Alcover, Yi Lui, Jenni Rinker, Sandro Diord Rescinho Amador, Simon Rex, Jan Becker Høgsberg
- C 20429** SEISMIC RESPONSE OF MONOPILE-SUPPORTED OFFSHORE WIND TURBINES EMBEDDED IN DIFFERENT SEABED PROFILES INCLUDING DYNAMIC SOIL-STRUCTURE INTERACTION
Eduardo Rodríguez-Galván, Guillermo M. Álamo, Cristina Medina, Luis A. Padrón, Juan J. Aznárez, Orlando Maeso

COMPdyn TS 19 - II**REPAIR AND RETROFIT OF STRUCTURES**

Wednesday

9:00 - 11:00

Room 1AChair: *Konstantinos G. Megalooikonomou*

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- C 20533** NUMERICAL INVESTIGATION OF RETROFITTING WAFFLE SLABS WITH CARBON FIBRE REINFORCED POLYMER PLATES
Michael Jung, George Markou
- C 20785** THE CHURCH OF SANTA MARIA DELLE GRAZIE AL CALCINAIO: FROM DIAGNOSTIC STUDIES TO ARCHITECTURAL AND STRUCTURAL REHABILITATION PROJECT
Michelangelo Micheloni, Anna Livia Ciuffreda, Gabriela Simoni, Federico Salvini

DAY 3

WEDNESDAY 14 JUNE

- C 21159** DEVELOPING THE METHODOLOGY OF REGIONAL-SCALE RETROFITTING STRATEGY FOR SOFT STORY BUILDINGS
SangJin Hahn, Insub Choi, HakJong Chang, JunHee Kim

COMPdyn TS 10 IMPACT DYNAMICS

- C 20699** DYNAMICAL RESPONSE OF MOTOR-DRIVEN PUMPS SUBJECTED TO AIRCRAFT IMPACT INDUCED VIBRATIONS – COMPARISON WITH SEISMIC RESPONSE
Sylvie Audebert, Damien Rousseu
- C 20982** DYNAMIC RESPONSE OF TREES SUBJECT TO A LANDSLIDE-INDUCED AIR BLAST: IMPLICATIONS FOR AIR BLAST RISK ASSESSMENTS
Yu Zhuang, Perry Bartelt, Aiguo Xing, Alexander Bast
- C 22306** INVESTIGATION OF THE EFFECTIVE OF BUMPER WALLS AGAINST SEISMIC POUNDING
Vasiliki N. Tsotoulidi, Konstantinos V. Spiliopoulos

COMPdyn TS 17 - I PERFORMANCE-BASED EARTHQUAKE ENGINEERING

Wednesday
9:00 - 11:00

Room 1B

Chair: *Alper Ilki, Simona Bianchi*

- C 20826** NUMERICAL SEISMIC PERFORMANCE INVESTIGATION OF AAC INFILL WALLS WITH FLAT-TRUSS BED-JOINT REINFORCEMENT
Ömer Faruk Halici, Alper Ilki
- C 21303** IMPACT OF EARTHQUAKES VS. HEAT WAVES ON THE SOCIO-ECONOMIC LOSSES OF BUILDINGS
Simona Bianchi, Jonathan Ciurlanti, Alessandra Luna Navarro, Eleonora Brembilla
- C 20374** NUMERICAL INVESTIGATIONS ON DYNAMIC BEHAVIOUR OF LUMPED MASS MODEL OF NON-STRUCTURAL ELEMENTS AND 3D RC BUILDINGS
S. Saranya, Palissery Sunitha
- C 20542** CALIBRATING MODEL PARAMETERS FOR THE HYSTERETIC RESPONSE SIMULATION OF REINFORCED CONCRETE COLUMNS WITH CIRCULAR AND RECTANGULAR SECTION
Yewon Park, Chang Seok Lee, Jong-Su Jeon
- C 20562** COMPARISON OF SEISMIC RESPONSES OF DUCTILE REINFORCED CONCRETE MOMENT RESISTING FRAMES USING NONLINEAR AND EQUIVALENT LINEAR SITE RESPONSE ANALYSIS
Minsun Kim, Jong-Su Jeon

COMPDYN MS 24 - I
ADVANCES IN SEISMIC ASSESSMENT AND INTEGRATED
RETROFITTING FOR ENVELOPES OF RC

Wednesday
9:00 - 11:00

Room 2A

MS Organizers: *André Furtado, Marco Donà, Maria Teresa de Risi*

Chair: *Marco Donà, Maria Teresa de Risi*

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- C 21157** INTEGRATED SEISMIC AND ENERGY RETROFITTING OF BUILDING ENVELOPES WITH NOVEL PREFABRICATED TEXTILE CAPILLARY TUBE PANELS
*Eun-Rim Baek, Daniel Pohoryles, Stylianos Kallioras, **Dionysios Bournas**, Tae-Hyeong Kim*
- C 21206** ANALYTICAL MODEL FOR PREDICTING OOP LATERAL BEHAVIOR OF MASONRY INFILL WALLS
Marco Gaspari, Sara Mozzon, Marco Donà, Nicolò Verlato, Francesca da Porto
- C 20474** ON THE INFLUENCE OF CLIMATE AND SEISMIC HAZARD CONDITIONS IN THE IDENTIFICATION OF OPTIMAL RETROFITTING STRATEGIES FOR RC BUILDINGS
Rita Couto, Gianrocco Mucedero, Rita Bento, Ricardo Monteiro
- C 20695** INVESTIGATION OF SEISMIC BEHAVIOUR OF EXISTING MASONRY INFILLS THROUGH COMBINED CYCLIC IN-PLANE AND DYNAMIC OUT-OF-PLANE TESTS
Maithree Kurukulasuriya, Riccardo Milanese, Guido Magenes, Davide Bolognini, Luca Grottoli, Filippo Dacarro, Paolo Morandi

UNCECOMP MS 2 - I
LEARNING FROM SMALL DATA: DATA-DRIVEN METHODS AND
MACHINE LEARNING FOR UNCERTAINTY QUANTIFICATION IN
ENGINEERING APPLICATIONS

Wednesday
9:00 - 11:00

Room 2B

MS Organizers: *Dimitrios G. Giovanis, Audrey Olivier, Michael Shields, Lori Graham-Brady*

Chair: *Audrey Olivier*

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- U 20010** **KEYNOTE:** SIMULTANEOUS DENOISING AND ROVERY OF DYNAMICAL SYSTEM EQUATIONS FROM NOISY MEASUREMENTS
Alireza Doostan, Jacqueline Wentz, Jeffery Hokanson
- U 19845** BAYESIAN NEURAL NETWORKS WITH PHYSICS-AWARE REGULARIZATION FOR TRAVEL TIME MODELING FROM IMBALANCED DATA
Audrey Olivier, Sevin Mohammadi, Andrew Smyth, Matt Adams
- U 19542** FORMULATION OF A HIGH DIMENSIONAL OPTIMIZATION PROBLEM USING PROBABILISTIC LEARNING TOOL IN A TURBOMACHINERY DETUNING CONTEXT
Evangéline Capiez-Lernout, Christian Soize
- U 19539** RELEVANCE VECTOR MACHINE ANALYSIS AND CLASSIFICATION FOR INDUSTRIAL APPLICATIONS
Panos Tsilifis, Piyush Pandita, Sandipp Krishnan Ravi, Ambarish Kulkarni
- U 20020** UNCERTAINTIES IN THE SYNTHETIC DATA GENERATION FOR THE CREATION OF BRIDGE DIGITAL TWINS
Alejandro Jiménez Rios, Vagelis Plevris, Maria Nogal

DAY 3

WEDNESDAY 14 JUNE

COMPdyn MS 26 - I
NON-DETERMINISTIC MODEL UPDATING AND HEALTH
MONITORING WITH UNCERTAINTY TREATMENT

Wednesday
9:00 - 11:00

Room 3A

MS Organizers: *Sifeng Bi, Matthias Faes, Marcos Valdebenito, Yongtao Bai, Matteo Broggi, Michael Beer*
Chair: *Sifeng Bi, Marcos Valdebenito*

- C 20423** **KEYNOTE:** ON THE APPLICATION OF MULTIDOMAIN LINE SAMPLING FOR RELIABILITY AND SENSITIVITY ANALYSIS IN STOCHASTIC LINEAR DYNAMICS
Marcos Valdebenito, Matthias Faes, Mauricio Misraji, Danko Jerez, Michael Beer
- C 20940** STOCHASTIC AND UNCERTAINTY ANALYSIS AND MONITORING OF REINFORCED CONCRETE HIGHWAY BRIDGE DECKS
Yunping Xi
- C 20567** APPLICATION OF DIRECTIONAL IMPORTANCE SAMPLING FOR ESTIMATION OF FIRST EXCURSION PROBABILITIES OF NONLINEAR CONSERVATIVE SDOF SYSTEMS SUBJECT TO GAUSSIAN STOCHASTIC LOADING
Mauricio Misraji, Matthias Faes, Marcos Valdebenito
- C 20678** BAYESIAN UPDATING OF WOODEN STRUCTURAL PARAMETERS AND SEISMIC DAMAGE CLASSIFIER USING NEURAL NETWORK
Rikuto Mizobuchi, Masayuki Kohiyama, Takuzo Yamashita
- C 21018** A COMPARISON OF SAMPLING-BASED BAYESIAN MODEL UPDATING APPROACHES APPLIED UPON A NEW BENCHMARK AEROSPACE TESTBED
Ewan Smith, Kui He, Sifeng Bi

COMPdyn MS 40
APPLICATION OF DEEP LEARNING AND IOT IN NUMERICAL
MODELLING AND HEALTH MONITORING OF
STRUCTURES/INFRASTRUCTURES

Wednesday
9:00 - 11:00

Room 3B

MS Organizers: *Ramin Ghiasi, Abdollah Malekjafarian, Mohammad Noori, Eleni Chatzi*
Chair: *Ramin Ghiasi*

- C 20155** INDIRECT MONITORING OF RAILWAY TRACKS WITH DATA COLLECTED FROM IN-SERVICE TRAIN USING UNSUPERVISED ANOMALY DETECTION METHOD
Ramin Ghiasi, Muhammad Arslan Khan, Abdollah Malekjafarian
- C 20207** REDUCING IMPEDING FACTORS FOR ENHANCED RESILIENCE THROUGH MACHINE LEARNING BASED STRUCTURAL HEALTH MONITORING
Islam Mantawy
- C 20436** POMDP BASED RAILWAY MAINTENANCE PLANNING VIA DEEP REINFORCEMENT LEARNING
Giacomo Arcieri, Cyprien Hoelzl, Oliver Schwery, Daniel Straub, Konstantinos G. Papakonstantinou, Eleni Chatzi
- C 21865** EFFECTIVE TECHNIQUE FOR STRUCTURES DAMAGE DETECTION BASED ON THE STRUCTURAL FREQUENCY MAPS
Wael A. Altabey, Mohammad Noori, Zhishen Wu, Ahmad Silik, Nabeel S. D. Farhan
- C 20187** DEEP LEARNING-BASED CRACK, LOCATION AND AREA IDENTIFICATION FOR A PIPELINE BY THE CONVOLUTIONAL NEURAL NETWORK BASED ON CRACK CONTOUR NETWORK METHOD
Wael A. Altabey, Mohammad Noori, Zhishen Wu

**COMPdyn MS 14
ADVANCES IN OPTIMIZATION AND CONTROL OF STRUCTURES
UNDER DYNAMIC LOADS**

Wednesday
9:00 - 11:00

Room 4A

MS Organizers: *Giulia Angelucci, Giuseppe Quaranta, Bruno Briseghella, Izuru Takewaki*

Chair: *Giulia Angelucci, Giuseppe Quaranta*

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- C 20610** OPTIMAL TOPOLOGICAL DESIGN OF STRUCTURES SUBJECTED TO NON-STATIONARY STOCHASTIC EXCITATIONS
Giulia Angelucci, Giuseppe Quaranta, Fabrizio Mollaioli
- C 20991** VARIABLES FOR VIBRATION CONTROL IN STEEL-DECK COMPOSITE FLOORS UNDER HUMAN-INDUCED ACTIVITIES
Gelacio Juárez-Luna, Félix Josué Gallegos Correa, Omar Caballero Garatachea, Luis Ángel Peralta González
- C 20789** PERFORMANCE ASSESSMENT OF PINNED ROCKING CORE WALLS IN STEEL MULTI-STORY BUILDINGS SUBJECTED TO STRONG SEISMIC GROUND MOTIONS
Michela De Angelis, Giulia Angelucci, Giuseppe Quaranta, Fabrizio Mollaioli
- C 21334** SEISMIC PERFORMANCE ASSESSMENT OF GRID-SHELL DOMES EQUIPPED WITH DAMPERS
Alireza Hosseini, Bruno Briseghella, Gian Felice Giaccu, Luigi Fenu
- C 20329** ANALYTICAL INVESTIGATION OF THE INFLUENCE OF SEISMICITY ON THE CONSTRUCTION COST OF THE R/C LOAD-BEARING STRUCTURE OF A 5-STORY BUILDING WITH SPRING SUPPORTS
Aggelos Michalitsianos, Diogenis Rogkogos, Theodoros Chrysanidis

**COMPdyn TS 27 - I
STEEL STRUCTURES**

Wednesday
9:00 - 11:00

Room 4B

Chair: *Francesco Salvatore Liguori*

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- C 21036** NUMERICAL STUDY ON CYCLIC RESPONSE OF PREQUALIFIED CARBON NEUTRALITY DISMANTLE CONNECTION
Jaehoon Bae, Youngju Kim, Jaehyeok Doh, Jintak Oh, Sanghoon Kim
- C 20490** MECHANICAL-BASED SEISMIC VULNERABILITY ANALYSIS OF INDUSTRIAL STEEL STRUCTURES WITH MASONRY INFILLS
Francesco Salvatore Liguori, Antonio Madeo, Antonio Formisano
- C 21142** INELASTIC TORSIONAL BUCKLING OF A SYMMETRIC THREE-DIMENSIONAL MOMENT-RESISTING FRAME SUBJECTED TO HORIZONTAL FORCE IN THE DIAGONAL DIRECTION
Iori Fukuda, Kohju Ikago, Takahito Maeda, Atsushi Nishimoto, Yoshikazu Araki
- C 20658** NUMERICAL ANALYSIS ON A REVERSIBLE CONNECTION FOR STEEL MODULAR BUILDINGS
Annarita Palmiotta, Michele D'Amato, Rosario Gigliotti
- C 21141** SEISMIC PERFORMANCE OF SPECIAL STEEL MOMENT FRAMES USING DETAILED VS SIMPLE HYSTERIC CURVES
Emilia Clavijo, Jorge Molina, Nicolas Coello, Xavier Vintimilla, Francisco Flores, Pablo Quinde
- C 21107** SEISMIC EFFECT ON THE MICADO STRUCTURAL SOLUTION. A NUMERICAL ANALYSIS
Ali Dalalbashi, Jorge Pinto, Cristina Reis, F. Pimenta, N. Oliveira Ferreira, N. Bento Pereira

DAY 3

WEDNESDAY 14 JUNE

11:00-11:30
Coffee Break

COMPdyn PLENARY LECTURES

Wednesday
11:30 - 13:30

Olympia

Chair: *Vissarion Papadopoulos*

C 21492 RECENT ADVANCES IN GROUND MOTION SELECTION FOR SEISMIC ANALYSIS
Jack Baker

C 22185 CHALLENGES OF APPLYING HIGH PERFORMANCE COMPUTING TO STRUCTURAL SEISMIC RESPONSE ANALYSIS
Muneo Hori

C 21442 NEW STANDARDS FOR SEISMIC ASSESSMENT OF BUILT CULTURAL HERITAGE: ONGOING WORK
Paulo B. Lourenço

UNCECOMP PLENARY LECTURES

Wednesday
11:30 - 13:30

Attica

Chair: *George Stefanou*

U 20382 THE PHASE FIELD FRACTURE METHOD: DOMAIN-DECOMPOSITION, ADAPTIVE RE-MESHING, AND STOCHASTIC ANALYSIS
Haim Waisman

C 21487 INERTIAL AMPLIFIER FOR VIBRATION CONTROL AND MITIGATION: DESIGN AND ANALYSIS
Sondipon Adhikari

U 19576 UNDERSTANDING AND MANAGING IDENTIFICATION PRECISION IN OPERATIONAL MODAL ANALYSIS
Siu-Kui Au

13:30-14:30
Lunch Break

**UNCECOMP MS 7 - II
UNCERTAINTY QUANTIFICATION, DATA ASSIMILATION, MACHINE
LEARNING, AND THEIR INTEGRATIONS FOR EFFECTIVE PREDICTIVE
MODELS?**

Wednesday
14:30 - 16:30

Olympia

MS Organizers: *Didier Lucor, Rossella Arcucci, Bojana Rosic*

Chair: *Hermann Matthies, Bojana Rosic*

U 20365 **KEYNOTE:** MATERIAL SYMMETRY ADAPTED PROBABILISTIC MODELLING OF ELASTICITY TENSORS
Hermann Matthies, Sharana Shivanand, Bojana Rosić

U 19710 BAYESIAN SPARSE SELF-ORGANIZED MAPS
Bojana Rosic, Bram van de Weg, Lars Greve

U 19564 NON-INTRUSIVE OPERATOR INFERENCE FOR SOFT ROBOT REDUCED ORDER MODEL
Minke Berghuis, Andjelka Stanic, Bojana Rosic

U 19732 PHYSICS-CONSTRAINED SURROGATE MODELLING FOR DYNAMICAL SYSTEMS IN THE FREQUENCY
DOMAIN
Julius Schultz, Ulrich Römer

U 19762 DATA-DRIVEN DOMAIN DECOMPOSITION DESCRIBING NONLINEAR MECHANICAL RESPONSE OF
BATTERY CELLS
Timm Gödde, Bojana Rosić

U 19750 PREDICTION UNCERTAINTY FLATTENING FOR PERFORMANCE IMPROVEMENT OF DEEP LEARNING
Chao Liu, Xinlei Zhou, Xizhao Wang

**COMPDYN MS 6 - III
EXPERIMENTAL MEASUREMENTS AND NUMERICAL SIMULATION IN
THE FIELD OF EARTHQUAKE ENGINEERING AND STRUCTURAL
DYNAMICS – NEW STRUCTURES AND STRUCTURAL RETROFITTING**

Wednesday
14:30 - 16:30

Attica

MS Organizers: *George C. Manos, Konstantinos Katakalos*

Chair: *Konstantinos Katakalos*

C 20884 EARTHQUAKE RETROFITTING OF “SOFT-STORY” RC BUILDINGS
George Manos, Konstantinos Katakalos, Vassilios Soulis, Lazaros Melidis

C 20844 ASSESSING THE PERFORMANCE OF EXISTING RC BEAM-COLUMN JOINTS
Emmanouil Golias, Demitrios Cotsovos

C 20831 EXPERIMENTAL AND NUMERICAL INVESTIGATION OF THE SEISMIC RESPONSE OF CONFINED MASONRY
WALLS
Nemanja Krtinić, Matija Gams, Marko Marinković

C 21169 NUMERICAL INVESTIGATION OF R/C COLUMNS BEFORE AND AFTER FRP STRENGTHENING UNDER
SEISMIC TYPE LOADINGS UTILIZING A NOVEL ANCHORING SYSTEM
Georgia Kotanidou, Lazaros Melidis, Konstantinos Katakalos

C 21193 GEOMETRY OPTIMIZATION OF ARCHED STONE STRUCTURES UNDER GRAVITY AND SEISMIC TYPE
LOADINGS
Alexandros Chortis, Lazaros Melidis, Konstantinos Katakalos, Amaryllis Iliadi Manou

C 20563 MACHINE-LEARNING-BASED DAMAGE DETECTION IN LIGHTWEIGHT STRUCTURES
Georgios Dadoulis, George Manolis, Konstantinos Katakalos, Kosmas Dragos, Kay Smarsly

DAY 3

WEDNESDAY 14 JUNE

COMPDYN TS 31 - III SEISMIC RISK AND DAMAGE ASSESSMENT

Wednesday
14:30 - 16:30

Templars

Chair: *Mariano Di Domenico, Marco Andreini*

- C 21344** ANALYTICAL ASSESSMENT OF SEISMIC DAMAGE AND USABILITY OF RC RESIDENTIAL BUILDINGS BY PERIOD ELONGATION
Mariano Di Domenico, Paolo Ricci, Gerardo M. Verderame
- C 20712** SEISMIC VULNERABILITY ASSESSMENT OF CONCRETE BLOCK CONFIGURATIONS FOR RADIATION SHIELDING
Luca Sironi, Marco Andreini, Ziran Zhou, José Andrade, Pierino Lestuzzi, Edward Andò, Frédéric Dubois, Filippo Dacarro, Davide Bolognini
- C 20967** SEISMIC FRAGILITY AND EXPECTED DAMAGE OF MASONRY SCHOOL BUILDINGS IN ITALY
Elisa Saler, Francesca da Porto
- C 21097** REDUCED ORDER MODELS TO ESTIMATE SEISMIC RISK OF UNREINFORCED MASONRY DWELLINGS
Ana Maria Zapata-Franco, Yeudy Felipe Vargas-Alzate, José Ramón Gonzalez-Drigo, Rodolfo Javier Tirado-Gutiérrez
- C 21314** EARTHQUAKE NATECH RISK: NUMERICAL ANALYSIS OF FLOATING ROOF AND SEALING SYSTEM IN CYLINDRICAL STORAGE TANKS
Michela Salimbeni, Maurizio De Angelis, Mariano Ciucci
- C 21407** METRICS FOR EVALUATING THE SEISMIC VULNERABILITY OF TELECOMMUNICATION NETWORKS
Alessandro Cardoni, Gian Paolo Cimellaro

COMPDYN MS 17 - II STEEL JOINTS BEHAVIOR UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS

Wednesday
14:30 - 16:30

Kallirhoe 1

MS Organizers: *Roberto Tartaglia, Mario D'Aniello, Massimo Latour*

Chair: *Roberto Tartaglia, Mario D'Aniello*

- C 20893** DESIGN FOR ROBUSTNESS OF A PILOT BUILDING EQUIPPED WITH DISSIPATIVE FREE FROM DAMAGE STEEL CONNECTIONS
Tudor Golea, Roberto Tartaglia, Massimo Latour, Mario D'Aniello, Jean-François Demonceau, Raffaele Landolfo, Vincenzo Piluso
- C 20439** SEISMIC ASSESSMENT OF THE STEEL MOMENT RESISTING FRAME EQUIPPED WITH FRICTION BEAM-TO-COLUMN JOINTS
Mario D'Aniello, Arash Poursadrollah
- C 20585** SEISMIC STRENGTHENING OF AN EXISTING RC FRAME BUILDING DESIGNED FOR GRAVITY LOADS
Alessandro Prota, Gianmaria Di Lorenzo
- C 20855** SINGLE AND MULTI-HAZARD ROBUSTNESS ASSESSMENT OF MULTI-STORY STEEL FRAME BUILDINGS
Florea Dinu, Calin Neagu, Dan Dubina
- C 20629** FATIGUE STRENGTH EVALUATION OF RIVETED SHEAR SPLICES
Annarosa Lettieri

COMPdyn MS 7 - II
SUSTAINABLE STRENGTHENING INTERVENTIONS TO PREVENT FAILURE IN UNREINFORCED MASONRY STRUCTURES AND INFRASTRUCTURES

Wednesday
14:30 - 16:30

Kallirhoe 2

MS Organizers: *Claudia Casapulla, Linda Giresini, Omar Alshawa, Francesca Taddei, Ehsan Noroozinejad*

Chair: *Linda Giresini, Omar Alshawa*

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- C 20470** EQUIVALENCE OF DAMPING PROPERTIES OF DISSIPATIVE DEVICES FOR MITIGATING THE SEISMIC RISK OF RIGID BLOCKS
Linda Giresini, Omar Alshawa, Luca Umberto Argiento, Claudia Casapulla
- C 20282** FRAGILITY CURVES FOR ROCKING MASONRY FAÇADES OF CHURCHES: A SENSITIVITY STUDY OF VULNERABILITY PARAMETERS
Luca Umberto Argiento, Claudia Casapulla, Francesca Ceroni
- C 20817** NUMERICAL DYNAMIC ANALYSIS OF A MASONRY TRIUMPHAL ARCH: COMPARISON OF DIFFERENT STRENGTHENING CONFIGURATIONS
Vieri Cardinali, Barbara Pintucchi, Marco Tanganelli, Francesco Trovatelli
- C 20979** OUT-OF-PLANE RESPONSE OF MASONRY CHURCH FACADES INCLUDING P-DELTA EFFECTS
Valeria Cusmano, Bartolomeo Pantò, Claudia Casapulla, Ivo Calì
- C 20094** FRAGILITY ASSESSMENT OF RC BUILDINGS IN SOUTHERN SPAIN BASED ON NEURAL NETWORK PREDICTIONS
Jaime de Miguel-Rodríguez, María Victoria Requena-García-Cruz, Emilio Romero-Sánchez, Antonio Morales-Esteban

COMPdyn TS 5 - II
DYNAMICS OF CONCRETE AND MASONRY STRUCTURES

Wednesday
14:30 - 16:30

Abbey

Chair: *Junji Kiyono, Amedeo Gregori*

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- C 20085** INVESTIGATION OF FAILURE OCCURRENCE MECHANISM OF HISTORIC MASONRY BUILDINGS AND PERFORMANCE OF REINFORCEMENT MEASURES USING DEM
Junji Kiyono, Aiko Furukawa
- C 20814** NUMERICAL MODELLING OF POORLY DETAILED EXISTING RC BEAM-COLUMN JOINTS
Michele Angiolilli, Amedeo Gregori, Lorenzo Bizzarri, Caterina D'Agostino, Edoardo Ciuffetelli, Alfredo Peditto, Pasqualino Gualtieri
- C 20724** ENERGY LOSS MECHANISMS OF ROCKING BLOCKS: EXPERIMENTAL OBSERVATIONS
Georgios Vlachakis, Carla Colombo, Anastasios I. Giouvanidis, Nuno Mendes, Nathanaël Savalle, Paulo B. Lourenço
- C 20768** DYNAMIC BEHAVIOUR OF A STRENGTHENED POINTED ARCH TESTED ON A SHAKING TABLE
Paulo Šćulac, Nina Čeh, Matej Cukarić
- C 20779** MATERIAL TESTING OF MICRO-CONCRETE AND 3D-PRINTED REINFORCEMENT FOR USE IN SMALL-SCALE SEISMIC TESTING OF RC STRUCTURES
Medhat Elmorsy, Rafal Wrobel, Christian Leinenbach, Michalis F. Vassiliou

DAY 3

WEDNESDAY 14 JUNE

UNCECOMP TS 21 COMPUTATIONAL STOCHASTIC MECHANICS

Wednesday
14:30 - 16:30

Ground

Chair: *Daniele E. Schiavazzi*

- U 20032** ENSEMBLE SOLVERS AND SYNCHRONIZATION-AVOIDING DATA-DRIVEN ACCELERATION FOR CARDIOVASCULAR MODELING UNDER UNCERTAINTY
Guoxiang G. Tong, Daniele E. Schiavazzi
- U 19632** CONVOLUTIONAL CONDITIONAL VARIATIONAL AUTOENCODERS AS SURROGATES OF HIGH-FIDELITY SHIP HULL STRUCTURAL MODELS
Nicholas Silionis, Konstantinos Anyfantis
- U 19649** PHYSICS INFORMED NEURAL NETWORKS TO MODEL THE HYDRO-MORPHODYNAMICS OF MANGROVE ENVIRONMENTS
Majdi Fanous, Alireza Daneshkhah, Juntao Yang, Jonathan M. Eden, Simon See, Vasile Palade
- U 19690** PRECONDITIONED 4D-VAR DATA-ASSIMILATION OF TURBULENT FLOW FIELDS WITH THE AID OF ATMOSPHERIC ANALYTICAL MODELS
Ahmed Alreweny, Stefan Vandewalle, Johan Meyers
- U 19828** A BAYESIAN APPROACH TO MODELING FINITE ELEMENT DISCRETIZATION ERROR
Anne Poot, Pierre Kerfriden, Iuri Rocha, Frans van der Meer
- U 19829** ROBUST TOPOLOGY OPTIMIZATION FOR FIBER-REINFORCED COMPOSITES UNDER MATERIAL UNCERTAINTY
Konstantinos-Iason Ypsilantis, Matthias Faes, Jan Ivens, David Moens
- U 19908** A PHYSICS-INFORMED NEURAL NETWORK SURROGATE MODEL FOR TIDAL SIMULATIONS
James Donnelly, Alireza Daneshkhah, Soroush Abolfathi

COMPdyn MS 5 REPAIR AND RETROFIT OF STRUCTURES

Wednesday
14:30 - 16:30

Room 1A

MS Organizers: *Ciro Del Vecchio, Marco Di Ludovico, Alper Ilki*

Chair: *Ciro Del Vecchio, Alper Ilki*

- C 20066** **KEYNOTE:** REVIEW OF RETROFIT AND STRENGTHENING STRATEGIES USED IN BUILDINGS IN MEXICO CITY AFTER STRONG EARTHQUAKES
Arturo Tena-Colunga, Héctor Hernández-Ramírez, Eber A. Godínez-Domínguez
- C 20757** COMPUTER AIDED DESIGN OF FRP STRENGTHENING FOR EXISTING RC BEAM-COLUMN JOINTS
Ciro Del Vecchio, Marco Di Ludovico, Alberto Balsamo, Andrea Prota
- C 21115** PSEUDODYNAMIC TESTING OF A FULL-SCALE MASONRY-INFILLED RC BUILDING
Stylianos Kallioras, Daniel Pohoryles, Dionysios Bournas, Francisco Molina, Pierre Pegon
- C 20577** CONTRIBUTION OF FLAX-TRM SYSTEMS TO THE SHEAR RESISTANCE OF RETROFITTED MASONRY WALLS
Niki Trochoutsou, Kypros Pilakoutas, Maurizio Guadagnini
- C 20391** SIMPLIFIED ANALYTICAL/MECHANICAL PROCEDURE FOR THE RESIDUAL CAPACITY ASSESSMENT OF EARTHQUAKE-DAMAGED REINFORCED CONCRETE FRAMES
Michele Matteoni, Livio Pedone, Simone D'Amore, Stefano Pampanin

- C 21292** ALTERNATIVE RETROFIT STRATEGIES FOR SEISMIC RISK-REDUCTION: STUDYING THE EFFECTIVENESS OF LOW-DAMAGE EXTERNAL EXOSKELETONS
Simone D'Amore, Livio Pedone, Stefano Pampanin

COMPDYN TS 17 - II
PERFORMANCE-BASED EARTHQUAKE ENGINEERING

Wednesday
14:30 - 16:30

Room 1B

Chair: *Grigorios Tsinidis, Juan Manuel Mayoral*

- C 21450** PROBABILISTIC SEISMIC DEMAND MODELS FOR THE ASSESSMENT OF UNDERGROUND STRUCTURES
Grigorios Tsinidis, Anna Karatzetzou, Sotiria Stefanidou
- C 20670** INVESTIGATING THE EFFICIENCY AND THE SUFFICIENCY OF IMS FOR THE PROBABILISTIC SEISMIC ASSESSMENT OF THE POUNDING EFFECT BETWEEN ADJACENT RC STRUCTURES
Maria Flenga, Maria Favvata
- C 21161** DEVELOPMENT OF SEISMIC LOSS FUNCTION OF SYSTEM MODULES OF NON-SEISMIC DESIGNED RC SCHOOL BUILDING FOR REGIONAL SEISMIC LOSS ASSESSMENT
HakJong Chang, Insub Choi, JunHee Kim, Sangjin Hahn
- C 20861** DAMPING ASSESSMENT OF BRIDGES FOR PERFORMANCE BASE DESIGN
Juan Manuel Mayoral, Mauricio Pérez
- C 20687** INFLUENCE OF BOND-SLIP ON NUMERICAL FRAGILITY CURVES AND STRUCTURAL RELIABILITY OF RC STRUCTURAL INTERNAL BEAM-COLUMN SUB-ASSEMBLY
Lorenzo Audisio, Michele D'Amato, Rosario Gigliotti

COMPDYN MS 24 - II
ADVANCES IN SEISMIC ASSESSMENT AND INTEGRATED RETROFITTING FOR ENVELOPES OF RC

Wednesday
14:30 - 16:30

Room 2A

MS Organizers: *André Furtado, Marco Donà, Maria Teresa de Risi*

Chair: *Marco Donà, Maria Teresa de Risi*

- C 20740** DEVELOPING STOREY LOSS FUNCTIONS FOR EVALUATION OF SEISMIC RISK IN ITALIAN RESIDENTIAL BUILDING TYPOLOGIES
Gianrocco Mucedero, Daniele Perrone, Ricardo Monteiro
- C 20795** SIMPLIFIED ASSESSMENT OF COMBINED INTERVENTION FOR THE SEISMIC AND ENERGETIC RETROFIT OF A SCHOOL BUILDING IN PADUA (ITALY)
Giacomo Piredda, Enrico Prativiera, Laura Carnieletto, Michele de Carli, Francesca da Porto
- C 20830** RC FRAMES WITH MASONRY INFILLS WITH AND WITHOUT OPENINGS: EXPERIMENTAL AND NUMERICAL RESULTS
Aleksa Milijaš, Bogdan Šakić, Marko Marinković, Christoph Butenweg, Matija Gams, Sven Klinkel
- C 21207** EXPERIMENTAL CALIBRATION OF THE IP BEHAVIOR OF STRENGTHENED INFILL WALLS AND SEISMIC ANALYSIS INCLUDING IP/OOP EFFECTS
Marco Gaspari, Marco Donà, Francesca da Porto

DAY 3

WEDNESDAY 14 JUNE

UNCECOMP MS 2 - II LEARNING FROM SMALL DATA: DATA-DRIVEN METHODS AND MACHINE LEARNING FOR UNCERTAINTY QUANTIFICATION IN ENGINEERING APPLICATIONS

Wednesday
14:30 - 16:30

Room 2B

MS Organizers: *Dimitrios G. Giovanis, Audrey Olivier, Michael Shields, Lori Graham-Brady*

Chair: *Dimitrios G. Giovanis*

U 19637 ADAPTIVE POLYNOMIAL CHAOS REGRESSION FOR VECTOR-VALUED MODEL OUTPUTS: APPLICATION TO ELECTRIC MACHINE SIMULATION

Dimitrios Loukrezis

U 19614 AERO-ACOUSTIC LINER IMPEDANCE METAMODEL CONSTRUCTION FROM A SMALL DATASET USING PROBABILISTIC LEARNING AND NEURAL NETWORKS

Amrithesh Sinha, Christophe Desceliers, Christian Soize, Guilherme Cunha

U 19932 A BAYESIAN SURROGATE FRAMEWORK FOR THE OPTIMISATION OF HIGH-DIMENSIONAL COMPOSITES FORMING PROCESS

Siyuan Chen, Adam Thompson, Tim Dodwell, Stephen Hallett, Jonathan Belnoue

UNCECOMP MS 13 - I SOFTWARE FOR UNCERTAINTY QUANTIFICATION

MS Organizers: *Stefano Marelli, Edoardo Patelli, Dirk Pflüger*

U 20329 UQPY: A PYTHON TOOLBOX FOR UNCERTAINTY QUANTIFICATION IN PHYSICAL AND ENGINEERING SYSTEMS

Dimitrios Giovanis, Audrey Olivier, Dimitrios Tsapetis, Michael Shields

U 19979 UQLAB & UQ[PY]LAB - STATUS UPDATE AND DEVELOPMENT PERSPECTIVES

Adéla Hlobilová, Christos Lataniotis, Stefano Marelli, Bruno Sudret

U 19778 OPENTURNS AND PERSALYS: OPEN-SOURCE SOFTWARES FOR ADVANCED UNCERTAINTY QUANTIFICATION

Julien Pelamatti, Joseph Muré, Michaël Baudin, Vincent Chabridon

COMPdyn MS 26 - II NON-DETERMINISTIC MODEL UPDATING AND HEALTH MONITORING WITH UNCERTAINTY TREATMENT

Wednesday
14:30 - 16:30

Room 3A

MS Organizers: *Sifeng Bi, Matthias Faes, Marcos Valdebenito, Yongtao Bai, Matteo Broggi, Michael Beer*

Chair: *Sifeng Bi, Marcos Valdebenito*

C 20230 CORRELATION BETWEEN THE FREQUENCY PARAMETERS AND THE RATIO BETWEEN PGA, PGV, AND PGD

Guan Chen, Ruohan Wang, Chengxin Feng, Kang Liao, Michael Beer

C 21057 UNCERTAINTY QUANTIFICATION IN THE CONSTITUTIVE BEHAVIOR OF HDRBS

José A. Gallardo, Juan C. de la Llera, Katrin Beyer

C 21507 GLOBAL RELIABILITY EVALUATION OF A HIGH-PIER BRIDGE UNDER COMPLEX GROUND MOTIONS

Zixin Liu

UNCECOMP TS 20
WAVE PROPAGATION IN MICRO-STRUCTURED RANDOM MEDIA

- U 19608** ANALYSIS OF THE INFLUENCE OF SPATIALLY DISTRIBUTED MATERIAL PROPERTIES ON THE GUIDED ULTRASONIC WAVE PROPAGATION IN A FIBER METAL LAMINATE
Natalie Rauter, Tom Kluge, Tilmann Barth
- U 20041** ON THE ULTRASONIC WAVE PROPAGATION IN MULTIPHASE RANDOM POLYCRYSTALS
Shahram Khazaie, Ningyue Sheng, Sylvain Fréour, Mathilde Chevreuil

UNCECOMP TS 16 - I
SYSTEM RELIABILITY ANALYSIS, DESIGN AND RISK ASSESSMENT

Wednesday
14:30 - 16:30

Room 3B

Chair: *Abhinav Gupta*

- U 20354** **KEYNOTE:** RISK-INFORMED DECISION-MAKING IN VERIFICATION AND VALIDATION UNDER UNCERTAINTY
Saran Bodda, Abhinav Gupta
- U 19880** ROBUST DESIGN OPTIMIZATION UNDER EPISTEMIC UNCERTAINTY USING ADAPTIVE KRIGING AND EXTREME VALUE DISTRIBUTIONS
Augustin Persoons, Conradus Van Mierlo, David Moens
- U 19596** EFFECT OF RANDOM PARAMETERS IN NONLINEAR REGRESSION ON THE OPTIMAL EXPERIMENTAL DESIGN
Daniela Jarušková
- U 19679** D-VINE-BASED SUBSET SIMULATION FOR RUNWAY OVERRUNS
Hassan Alnasser, Claudia Czado

COMPDPN TS 26
SOUND AND VIBRATION

Wednesday
14:30 - 16:30

Room 4A

Chair: *Aleksandar Zhelyazkov*

- C 21104** CASE STUDY APPLICATIONS OF PERFECTLY MATCHED LAYERS IMPLEMENTED IN THE ANALYSIS OF VIBRATIONS INDUCED BY TRAIN PASSING
Aleksandar Zhelyazkov, Hanno Töll, Dieter Pichler
- C 20063** ACTIVE NOISE CONTROL OF AIR CONDITIONING SYSTEM NOISE
Orhun Okcu, Kanghyun An, Sang-Kwon Lee
- C 20798** EFFECT OF DEEP FOUNDATION ELEMENTS ON TRANSFER MOBILITIES FOR GROUND-BORNE VIBRATIONS IN URBAN RAILWAY TUNNELS
Theodora Makrypidi, Charisis Chatzigogos, Stefania Gobbi, Pierre-Alain Nazé
- C 21392** MODAL CHARACTERIZATION AND ROAD ROUGHNESS RECONSTRUCTION USING DYNAMIC VEHICLE ACCELERATIONS AND ANNS
Kais Douier, Mohammed F. M. Hussein, Jamil Renno

DAY 3

WEDNESDAY 14 JUNE

COMPDYN TS 27 - II
STEEL STRUCTURES

Wednesday
14:30 - 16:30

Room 4B

Chair: *Amirali Sadeqi*

C 21449 DEVELOPMENT OF A SIMPLIFIED BEAM MODEL FOR TUBULAR JOINTS IN JACKET STRUCTURES

Antonio Sindoni, Amirali Sadeqi, Jens Henrik Nielsen, Evangelos Katsanos

C 21226 ADVANCED OPTIMIZATION PROCESSES FOR THE DESIGN OF 3D-PRINTED METAL DAMPERS

Francesca Romana Andreacola, Giuseppe Brando

C 21378 IMPROVING THE PERFORMANCE OF I-SHAPED DAMPERS USING STIFFENERS

Ahmad Jabbar Hussain Alshimmeri, Denise-Penelope N. Kontoni, Ali Ghamari

UNCECOMP MS 9 - I
UQ AND DATA ASSIMILATION WITH SPARSE, LOW-RANK TENSOR,
AND MACHINE LEARNING METHODS

MS Organizers: *Hermann G. Matthies, Alexander Litvinenko, Martin Eigel*

U 19765 MULTILEVEL AND MULTIGRID METHODS FOR SOLVING HENRY PROBLEM WITH UNCERTAIN COEFFICIENTS

Alexander Litvinenko, Dmitry Logashenko, Raul Tempone, Ekaterina Vasilyeva, Gabriel Wittum

U 19798 ACCELERATED INTERACTING PARTICLE SYSTEMS WITH LOW-RANK TENSOR COMPRESSION FOR BAYESIAN INVERSION

Martin Eigel, Robert Gruhlke, David Sommer

U 19799 ADAPTIVE NEURAL NETWORKS FOR PARAMETRIC PDES

Janina Schütte, Martin Eigel

16:30-17:00
Coffee Break

UNCECOMP MS 7 - III
UNCERTAINTY QUANTIFICATION, DATA ASSIMILATION, MACHINE LEARNING, AND THEIR INTEGRATIONS FOR EFFECTIVE PREDICTIVE MODELS?

Wednesday
17:00 - 19:00

Olympia

MS Organizers: *Didier Lucor, Rossella Arcucci, Bojana Rosic*

Chair: *Rossella Arcucci*

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- U 19817** REDUCED-ORDER MODEL FOR MICROSCALE ATMOSPHERIC DISPERSION COMBINING MULTI-FIDELITY LES AND RANS DATA
*Bastien X. Nony, Mélanie C. Rochoux, Thomas Jaravel, **Didier Lucor***
- U 20016** MULTI-FIDELITY BAYESIAN INFERENCE OF CONCRETE DAMAGE PLASTICITY MODEL PARAMETERS FROM A NEW EFFICIENT TEST ON PASSIVELY CONFINED CONCRETE CYLINDERS
***Anna Kučerová**, Jan Sýkora, Petr Havlásek, Daniela Jarušková, Milan Jirásek*
- U 19811** MULTI-SCALE COMPOSITE RELIABILITY-BASED DESIGN OPTIMIZATION FOR AEROELASTIC APPLICATIONS
***Ludovic Coelho**, Nicolo Fabbiane, Christian Fagiano, Cédric Julien, Roger Ballester, Didier Lucor*
- U 19933** DEEP LEARNING-BASED DATA ASSIMILATION FOR NONLINEAR AEROELASTIC PROBLEMS
***Avicene Samir Chaarane**, Jean-Camille Chassaing, Taraneh Sayadi*
- U 20006** MESOSCALE PARAMETER ESTIMATION BY USING BAYESIAN APPROACH AND DISCRETE LATTICE ELEMENT MODEL WITH EMBEDDED STRONG DISCONTINUITIES
***Mijo Nikolić**, Simona Dobrilla, Matteo Lunardelli, Dirk Lowke, Bojana Rosić*
- U 20362** FOURIER NEURAL OPERATOR SURROGATE MODEL TO PREDICT 3D SEISMIC WAVES PROPAGATION
***Fanny Lehmann**, Filippo Gatti, Michaël Bertin, Didier Clouteau*
- U 19652** DEEP-LEARNING-ASSISTED MULTI-PHYSICS AND MULTI-SCALE DATA ASSIMILATION
***Sibo Cheng**, Rossella Arcucci*

COMPdyn MS 6 - IV
EXPERIMENTAL MEASUREMENTS AND NUMERICAL SIMULATION IN THE FIELD OF EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS – NEW STRUCTURES AND STRUCTURAL RETROFITTING

Wednesday
17:00 - 19:00

Attica

MS Organizers: *George C. Manos, Konstantinos Katakalos*

Chair: *Konstantinos Katakalos*

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- C 20883** STUDYING THE PERFORMANCE OF STONE MASONRY ARCH BRIDGES EMPLOYING IN-SITU MEASUREMENTS AND NUMERICAL PREDICTIONS
*George Manos, **Konstantinos Katakalos**, Lampros Kotoulas, Lazaros Melidis*
- C 20885** LIMIT-STATE RESPONSE OF STONE MASONRY USED IN THE CONSTRUCTION OF CULTURAL HERITAGE IN GREECE
*George Manos, Konstantinos Katakalos, **Lampros Kotoulas**, Lazaros Melidis*
- C 20742** SHEAR RETROFITTING OF REINFORCED CONCRETE T-BEAMS USING CARBON FIBER-REINFORCED POLYMER (FRP) ROPES AND U-SHAPED SHEETS - TESTS AND FRP DEBONDING FAILURE IDENTIFICATION
*Adamantis Zapris, Violetta Kytinou, George Sapidis, **Constantin Chaliotis**, Chris Karayannis*
- C 20759** SHAKING TABLE TESTS ON FULL SCALE TWO-FLOOR STEEL FRAMED STRUCTURES – DESIGN AND PRELIMINARY NUMERICAL INVESTIGATIONS
***Georgios Balaskas**, Cristian Vulcu, Benno Hoffmeister, Christoph Butenweg*

C 20886 REINFORCED MASONRY PIERS BUILT WITH A NOVEL CLAY MASONRY UNITS UNDER SEISMIC-TYPE LOADS

George Manos, Lazaros Melidis, Konstantinos Katakalos

C 22212 EFFECT OF THE SLAB ON THE INELASTIC RESPONSE OF REINFORCED CONCRETE BEAM-COLUMN JOINTS: A NUMERICAL INVESTIGATION

Charoula D. Zaki, Vassilis K. Papanikolaou

COMPDYN MS 49
SEISMIC RESPONSE OF MASONRY CROSS VAULTS: SHAKING TABLE TESTS AND NUMERICAL VALIDATIONS

Wednesday
17:00 - 19:00

Templars

MS Organizers: *Chiara Calderini, Paulo Lourenço, Nuno Mendes, Nicoletta Bianchini, Paulo Candeias*

Chair: *Chiara Calderini, Paulo Lourenço*

C 21270 A BLOCK-BASED NUMERICAL SIMULATION TECHNIQUE FOR MASONRY CROSS-VAULTS SUBJECTED TO EARTHQUAKE EXCITATION

Prabakaran Kesavan, Massimo Petracca, Krishnachandran Sethumathavan, Arun Menon, Guido Camata

C 21224 NUMERICAL INVESTIGATION ON THE SEISMIC RESPONSE OF A MASONRY CROSS VAULT BASED ON THE DISCRETE MACRO-ELEMENT METHOD

César Chácará, Bartolomeo Pantò, Francesco Cannizzaro, Davide Rapicavoli, Ivo Calì

C 21196 BLIND PREDICTION OF SHAKE TABLE TESTS ON A FULL-SCALE UNSTRENGTHENED MASONRY CROSS VAULT: COMBINED FINITE-DISCRETE ELEMENT MODEL

Omar AlShawa, Domenico Liberatore, Luigi Sorrentino

C 21040 NUMERICAL PREDICTION OF THE SEISMIC BEHAVIOUR OF A MASONRY VAULT MOCK-UP USING THE NOSA-ITACA CODE

Daniele Pellegrini

C 21272 SIMPLIFIED EVALUATION FOR THE SERA-TA BLIND PREDICTION: SEISMIC BEHAVIOR OF MASONRY CROSS VAULTS

Giancarlo Ramaglia, Gian Piero Lignola, Andrea Prota

C 21225 SEISMIC TESTING OF A FULL SCALE MASONRY GROIN VAULT – A BLIND PREDICTION COMPETITION

Nicoletta Bianchini, Chiara Calderini, Nuno Mendes, Paulo Candeias, Paulo B. Lourenço

**COMPdyn MS 17 - III
STEEL JOINTS BEHAVIOR UNDER SEISMIC, FATIGUE AND
ROBUSTNESS ACTIONS**

Wednesday
17:00 - 19:00

Kallirhoe 1

MS Organizers: *Roberto Tartaglia, Mario D'Aniello, Massimo Latour*

Chair: *Alessia Campiche, Aldo Milone*

C 21178 THEORETICAL AND EXPERIMENTAL EVALUATION OF SEISMIC BEHAVIOUR OF CFS WALL WITH UHS STEEL BRACING
Alessia Campiche

C 20397 CYCLIC PERFORMANCE OF HOT-DRIVEN RIVETED CONNECTIONS
Aldo Milone

C 20463 PROBABILISTIC ANALYSIS OF THE MR-FRAMES EQUIPPED WITH FREEDAM DAMPERS
Maria Maglio, Rosario Montuori, Elide Nastri, Vincenzo Piluso, Alessandro Pisapia

C 20396 PREDICTION OF THE STATIC AND FATIGUE PERFORMANCE OF PITTED STEEL WIRE ROPES
Aldo Milone

C 20853 RETROFITTING OF AN EXISTING BUILDING WITH CONCRETE WALLS AND STEEL FRAMES FOR GRAVITY LOADS AND PROGRESSIVE COLLAPSE RESISTANCE
Florea Dinu, Calin Neagu, Dan Dubina, Constantin Stanciu

**COMPdyn MS 29
SOFT COMPUTING AND ARTIFICIAL INTELLIGENCE TECHNIQUES IN
STRUCTURAL ENGINEERING**

Wednesday
17:00 - 19:00

Kallirhoe 2

MS Organizers: *Vagelis Plevris, Usama Ebead, Tadesse G. Wakjira*

Chair: *Ambrosios-Antonios Savvides*

C 21466 CLASSIFICATION OF WALL DEFECTS FOR MAINTENANCE PURPOSES USING IMAGE PROCESSING
Waqas Qayyum, Rana Ehtisham, Vagelis Plevris, Junaid Mir, Afaq Ahmad

C 20925 MACHINE LEARNING APPROACH FOR THE ESTIMATION OF THE FAILURE OF SHALLOW FOUNDATIONS OF COHESIVE GEOMATERIALS AND THE CORRESPONDING NEURAL NETWORKS
Ambrosios-Antonios Savvides, Leonidas Papadopoulos

C 21401 A NEW DEEP LEARNING ACCELERATED BLAST LOADING EFFECT ANALYSIS OF FRP RETROFITTED CONCRETE SLAB
Arya Prakash Padhi, Vaibhav Bhandari, Anupam Chakrabarti, Rajib Chowdhury

DAY 3

WEDNESDAY 14 JUNE

COMPdyn TS 5 - III DYNAMICS OF CONCRETE AND MASONRY STRUCTURES

Wednesday
17:00 - 19:00

Abbey

Chair: *Petros Sideris*

- C 20843** FINITE ELEMENT MODELING OF 3D PRINTED CONCRETE WALLS UNDER MECHANICAL LOADS
Hao Chen, Mohammad Aghajani Delavar, Petros Sideris
- C 21972** DYNAMIC CHARACTERIZATION OF THE CIRCUS MAXIMUS ARCHEOLOGICAL SITE
Amir Reza Elahi, Alessandro Cardoni, Cosimo Pellecchia, Marialetizia Buonfiglio, Federica Michela Rossi, Elena Federico, Fabio Pacciani, Gian Paolo Cimellaro
- C 20689** ADVANCES IN 3D NUMERICAL SIMULATION OF SEISMIC RESPONSE OF SAFETY-RELATED NUCLEAR STRUCTURES
Fernando Rastellini, Junior Ramirez, José Manuel Gonzalez, Alex H. Barbat, Cuauhtémoc Escudero, Yeudi F. Vargas, Luis G. Pujades
- C 20806** STRUCTURAL PERFORMANCE AND HUMAN COMFORT ASSESSMENT OF RC CANTILEVER GRANDSTANDS: THE CASE OF THE SECOND RING OF SAN SIRO MEAZZA STADIUM IN MILAN
Martina Cogliano, Nicola Scattarreggia, Matteo Moratti, Gian Michele Calvi

COMPdyn MS 48 RECENT ADVANCES IN GROUND MOTION SELECTION AND SCALING TECHNIQUES

Wednesday
17:00 - 19:00

Ground

MS Organizers: *Shaghayegh Karimzadeh, Manolis Georgioudakis, Michalis Fragiadakis*

Chair: *Shaghayegh Karimzadeh, Manolis Georgioudakis*

- C 20906** EVALUATION OF SIMULATED GROUND MOTIONS FOR SEISMIC ASSESSMENT OF A STEEL FRAME STRUCTURE USING MULTI-CRITERIA SELECTION AND SCALING APPROACH BASED ON EVOLUTIONARY ALGORITHMS
Manolis Georgioudakis, Shaghayegh Karimzadeh, Michalis Fragiadakis, Paulo B. Lourenço
- C 20451** SEISMIC ASSESSMENT OF TYPOLOGICAL MASONRY BUILDINGS USING SIMULATED GROUND MOTION RECORDS: A CASE STUDY FOR AZORES, PORTUGAL
Shaghayegh Karimzadeh, Vasco Bernardo, Sayed Mohammad Sajad Hussaini, Daniel Caicedo, Alexandra Carvalho, Paulo B Lourenço
- C 21071** QUAKEMANAGER: A COMPREHENSIVE SOFTWARE TOOL FOR GROUND MOTION SELECTION, MODIFICATION AND ANALYSIS
Mahmoud Hachem, Bashar Abdo, Hamza Al-Jundi, Sohaib Al-Jundi, Bahaa Tayba, Bahaa Ghieh, Yousra Hachem, Khaled Chandab
- C 21269** SCALING GROUND MOTION RECORDS BY CONSIDERING THE INELASTIC RESPONSE OF SOILS
Yeudy F. Vargas-Alzate, Ana M. Zapata-Franco, Rodolfo J. Tirado, Ramón Gonzalez-Drigo, Jean Vaunat
- C 21393** SELECTION AND SCALING VALIDATION OF GROUND MOTIONS ACCORDING TO TBEC-2018 FOR THE SEISMIC ASSESSMENT OF MASONRY STRUCTURES
Marco F. Funari, Shaghayegh Karimzadeh, Daniel Caicedo, Sayed M. S. Hussaini, Aysegul Askan, Paulo B. Lourenço
- C 21433** PERMANENT DISPLACEMENT DATABASE OF STRONG EARTHQUAKES IN TURKEY, AND AN ADJUSTED PREDICTIVE MODEL
Emreacan Adanır, Gülüm Tanırcan

COMPDYN MS 15
NOISE AND VIBRATION HARSHNESS OF GEAR TRANSMISSIONS
UNDER DETERMINISTIC AND NON DETERMINISTIC CONDITIONS:
LIVE-I

Wednesday
17:00 - 19:00

Room 1A

MS Organizers: *Mohamed Ichchou, Pascal Fossat, Stephan Rinderknecht, Francesco Franco*

Chair: *George Mylonakis, George Markou*

-
- C 20891** COMPOSITE GEARBOX HOUSING DESIGN AND ITS NVH ASSESSMENT
Daniel Amaral, Mohamed Ichchou, Pascal Fossat, Przemyslaw Kotakowski, Michelle Salvia
- C 20934** MITIGATION OF GEARBOX HOUSING VIBRATION USING INERTIAL MASS ACTUATORS
Sherif Okda, Sneha Rupa Nampally, Mauro Fontana, Rainer Nordmann, Stephan Rinderknecht, Tobias Melz
- C 21127** MODEL DEVELOPMENT TO EVALUATE ACTIVE CONTROL STRATEGIES FOR GEARBOX HOUSINGS
Sneha Rupa Nampally, Sherif Okda, Mauro Fontana, Rainer Nordmann, Stephan Rinderknecht

COMPDYN TS 4
CONSTITUTIVE MODELLING

- C 21357** ON THE CALIBRATION OF UBCSAND CONSTITUTIVE MODEL AGAINST MONOTONIC & CYCLIC TRIAXIAL COMPRESSION DATA FOR BALLAST AGGREGATES
Tadahiro Kishida, Rusul Falah Aldulaimi, George Mylonakis
- C 21078** A 3D FRACTURE ENERGY-BASED SMEARED CRACK APPROACH FOR THE NONLINEAR BEHAVIOR OF REINFORCED CONCRETE STRUCTURES
Christos Mourlas, George Markou, Manolis Papadrakakis
- C 21227** MODELLING OF THE FULL-RANGE RESPONSE OF ABUTMENT-BACKFILL SYSTEMS
Ioannis Mikes, Andreas Kappos
- C 21124** MODELING THE INFLUENCE OF STRAIN-RATE IN SUPERELASTIC SHAPE MEMORY ALLOYS
Maria Ntina

COMPDYN-UNCECOMP MS 50
DATA DRIVEN METHODS AND ENGINEERING SOFTWARE FOR NEXT
GENERATION HPC APPLICATIONS

Wednesday
17:00 - 19:00

Room 1B

MS Organizers: *Vissarion Papadopoulos, Kyriakos Giannakoglou, George Goumas*

Chair: *Vissarion Papadopoulos*

-
- C 22693** SIMULATIONS OF CARBON-BASED COMPOSITES FOR THE DESIGN OF AUTOMOTIVE BUMPER
Konstantinos Margaronis, Vasileios Merevis, Rahul Banerjee, Ioannis Kalogeris, Philippe Mauri, Arijit Mallick, Stefanos Pyrialakos, Vissarion Papadopoulos, Martin Obstbaum, Victor Faessler
- C 22692** MSOLVE - A LOOSELY COUPLED MULTIPARADIGM HPC COMPUTATIONAL SIMULATION SUITE
George Stavroulakis, Ioannis Kalogeris, Gerasimos Sotiropoulos, Vissarion Papadopoulos
- U 20583** AI-SOLVE: FUSING LINEAR ALGEBRA WITH MACHINE LEARNING TO ACCELERATE THE SOLUTION OF LARGE-SCALE PARAMETRIZED SYSTEMS
Ioannis Kalogeris, Stefanos Nikolopoulos, George Stavroulakis, Vissarion Papadopoulos
- U 20586** AN ISO-XFEM FORMULATION FOR TOPOLOGY OPTIMIZATION OF BI-MATERIAL STRUCTURES
Efstathia Chroni, Serafeim Bakalakos, Gerasimos Sotiropoulos, Vissarion Papadopoulos, Manolis Papadrakakis

DAY 3

WEDNESDAY 14 JUNE

- U 20582** COMBINING MACHINE-LEARNING AND QUANTUM COMPUTING FOR FASTER CONVERGENCE OF VARIATIONAL ALGORITHMS IN LINEAR PARAMETRIC SYSTEMS OF EQUATIONS
Constantinos Atzarakis

COMPDYN MS 33
**INSIGHT IN SEISMIC PERFORMANCE OF RETROFITTED BUILDINGS:
FEASIBILITY AND EFFECTIVENESS OF INTERVENTION IN RC
BUILDINGS**

Wednesday
17:00 - 19:00

Room 2A

MS Organizers: *Maria Teresa De Risi, Carlo Del Gaudio, Gerardo Mario Verderame*

Chair: *Maria Teresa De Risi*

-
- C 21366** COMPUTATIONAL INTELLIGENCE-BASED OPTIMIZATION FOR SUSTAINABLE SEISMIC RETROFIT OF EXISTING REINFORCED CONCRETE AND MASONRY STRUCTURES
Fabio Di Trapani, Antonio Pio Sberna, Cristoforo Demartino, Giuseppe Carlo Marano
- C 21394** INFILL-FRAME INTERACTION: REFINED MODELLING FOR THE ANALYSIS AND THE ESTIMATION OF THE INTERNAL FORCES IN SEISMIC ASSESSMENT OF RC BUILDING STRUCTURES
Fabio Di Trapani, Marilisa Di Benedetto, Massimo Petracca, Guido Camata
- C 21164** PRELIMINARY RESULTS OF A SHAKING-TABLE DYNAMIC TEST ON A REPAIRED AND ENHANCED REINFORCED CONCRETE INFILLED STRUCTURE
Riccardo R Milanese, Gabriele Guerrini, Davide Bolognini, Luca Grottoli, Filippo Dacarro, Paolo Morandi
- C 20620** INFLUENCE OF CLADDING PANELS RETROFIT ON THE SEISMIC RISK OF AN EXISTING PRECAST BUILDING
Marius Eteme Minkada, Marco Bosio, Andrea Belleri, Paolo Riva
- C 21238** COLD FORMED STEEL PANELS FOR THE SEISMIC STRENGTHENING OF EXISTING RC BUILDINGS
Simone Labò, Andrea Belleri, Michelle Gualdi, Atsushi Sato
- C 21273** IMPROVEMENT OF SEISMIC SAFETY BY LOCAL STRENGTHENING IN ITALIAN PRE-70 RESIDENTIAL RC BUILDINGS DESIGNED FOR GRAVITY LOADS
Santa Anna Scala, Maria Teresa De Risi, Carlo Del Gaudio, Gerardo Mario Verderame
- C 20824** NUMERICAL MODEL CALIBRATION OF A LOW IMPACT STRENGTHENING TECHNIQUE BASED ON BED-JOINTS SLIDING IN SEISMIC RETROFITTING OF MASONRY INFILLS
Marco Vailati, Amedeo Gregori, Federico Morelli, Giorgio Monti, Edoardo Ciuffetelli, Alfredo Peditto

UNCECOMP MS 13 - II
SOFTWARE FOR UNCERTAINTY QUANTIFICATION

Wednesday
17:00 - 19:00

Room 2B

MS Organizers: *Stefano Marelli, Edoardo Patelli, Dirk Pflüger*

Chair: *Edoardo Patelli*

-
- U 20039** **KEYNOTE:** AI TOOLS FOR HUMAN RELIABILITY ANALYSIS
Karl Johnson, Caroline Morais, Edoardo Patelli
- U 19810** UNCERTAINTY QUANTIFICATION IN JULIA: A NEW FRAMEWORK FOR UNCERTAINTY QUANTIFICATION IN JULIA
Jasper Behrensdoerf, Ander Gray, Matteo Broggi, Michael Beer

- U 19868** UNCERTAINTY ANALYSIS WITH LAGUN ON AN INTERNAL COMBUSTION ENGINE FUELED WITH HYDROGEN
Julien Steib, Delphine Sinoquet, Karine Truffin, David Chazalviel

**COMPdyn TS 20
SEISMIC ISOLATION**

Wednesday
17:00 - 19:00

Room 3A

Chair: *Antonello Salvatori, Lizhi Sun*

- C 21400** EFFECTS OF FAR FAULT EARTHQUAKES IN RETROFITTED SEISMICALLY ISOLATED BUILDING
Antonello Salvatori

- C 20103** MULTISCALE MAGNETO-MECHANICAL COUPLING OF MAGNETORHEOLOGICAL ELASTOMER ISOLATORS
Zhijian Hu, Leilei Xia, Lizhi Sun

- C 20455** VARIANTS OF VIBRO-ISOLATION IN TRAM TRACKS AND EVALUATION OF THEIR EFFECTIVENESS
Filip Pachla, Piotr Stecz, Tadeusz Tatara

- C 20614** DEVELOPMENT OF A COMPLIANT MECHANISM TO ISOLATE THE BASE VIBRATIONS AND MINIMIZE THE SHOCK RESPONSE USING AN OPTIMIZED DYNAMIC MATHEMATICAL MODEL
Kazım Yüksel, Ata Muğan

- C 20839** NONLINEAR FINITE ELEMENT MODELING OF PRESTRESSED LEAD EXTRUSION DAMPERS
Furkan Çalim, Ahmet Güllü, Cihan Soydan, Ercan Yüksel

**UNCECOMP TS 16 - II
SYSTEM RELIABILITY ANALYSIS, DESIGN AND RISK ASSESSMENT**

Wednesday
17:00 - 19:00

Room 3B

Chair: *Marcin Kamiński*

- U 20024** **KEYNOTE:** RELATIVE ENTROPY-BASED RELIABILITY ASSESSMENT OF HYBRID TELECOMMUNICATION SKELETAL TOWERS
Marcin Kamiński, Rafał Bredow

- U 20353** FEATURE EXTRACTION FOR UNCERTAINTY QUANTIFICATION AND REDUCTION OF NOISE IN CONDITION MONITORING USING DEEP LEARNING
Harleen Sandhu, Saran Bodda, Serena Sauers, Abhinav Gupta

- U 19950** INFORMATION PROPAGATION METHOD FOR RELIABILITY ASSESSMENT IN COMPLEX NETWORKS
Temitope Ohiani, Edoardo Patelli

- U 19786** EVALUATING POLYMORPHIC UNCERTAIN QUANTITIES USING INFORMATION REDUCTION MEASURES FOR STRUCTURAL DESIGN PROCEDURES
Maria Böttcher, Wolfgang Graf, Michael Kaliske

DAY 3

WEDNESDAY 14 JUNE

COMPDYN TS 30 WAVE PROPAGATION

Wednesday
17:00 - 19:00

Room 4A

Chair: *Takahiro Yamada*

-
- C 21184** NUMERICAL PROPERTIES OF PRESSURE-STABILIZED LINEAR TETRAHEDRAL ELEMENT FOR WAVE PROPAGATION IN NEARLY INCOMPRESSIBLE ELASTICITY
Takahiro Yamada
- C 21091** NUMERICAL ANALYSIS OF WAVE DISPERSION IN KELVIN-CELL BASED PERIODIC STRUCTURES FOR DYNAMIC APPLICATIONS
Lukas Kleine-Wächter, Romain Rumpler, Peter Göransson, Huina Mao, Gerhard Müller
- C 20417** EFFECT OF DEBONDING ON GUIDED WAVE PROPAGATION IN STIFFENED COMPOSITE PLATE UNDER OPERATIONAL LOADING AND HYGROTHERMAL ENVIRONMENT
Akshay Prakash Kalgutkar, Sauvik Banerjee

UNCECOMP MS 9 - II UQ AND DATA ASSIMILATION WITH SPARSE, LOW-RANK TENSOR, AND MACHINE LEARNING METHODS

Wednesday
17:00 - 19:00

Room 4B

MS Organizers: *Hermann G. Matthies, Alexander Litvinenko, Martin Eigel*

Chair: *Aku Kammonen*

-
- U 19891** ADAPTIVE RANDOM FOURIER FEATURES BASED ON METROPOLIS SAMPLING
Aku Kammonen, Jonas Kiessling, Petr Plecháč, Mattias Sandberg, Anders Szepessy
- U 19634** TOWARDS ADAPTIVE, NON-INTRISIVE AND CONVERGENT ALGORITHMS TO SOLVE PARAMETRIC PDES WITH UNBOUNDED COEFFICIENTS
Nando Farchmin, Martin Eigel
- U 19976** LIKELIHOOD-FREE NONLINEAR DATA ASSIMILATION APPROACH USING MACHINE LEARNING-BASED APPROXIMATION OF CONDITIONAL EXPECTATION
Truong-Vinh Hoang, Sebastian Krumscheid, Hermann G. Matthies, Raúl Tempone
- U 19833** STABLE LEAST SQUARES APPROXIMATION OF SOLUTIONS OF PARAMETRIC PDES
Martin Eigel, Anthony Nouy, Philipp Trunschke

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Supporting Organizations



ECCOMAS European Community on Computational Methods in Applied Sciences (ECCOMAS)



International Association for Computational Mechanics (IACM)



National Technical University of Athens (NTUA)



European Committee on Computational Solids and Structural Mechanics of



European Association for Structural Dynamics (EASD)



European Association for Earthquake Engineering (EAEE)



Greek Association for Computational Mechanics (GRACM)



Hellenic Society of Earthquake Engineering (HSEE)



Hellenic Republic - Region of Attica