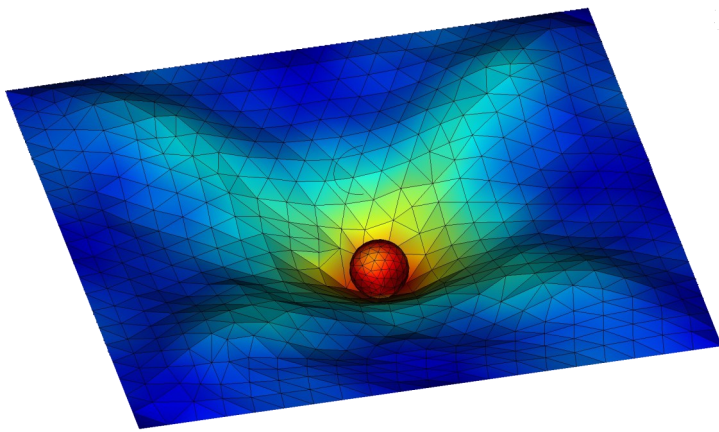




15-18 June, Rhodes Island, Greece



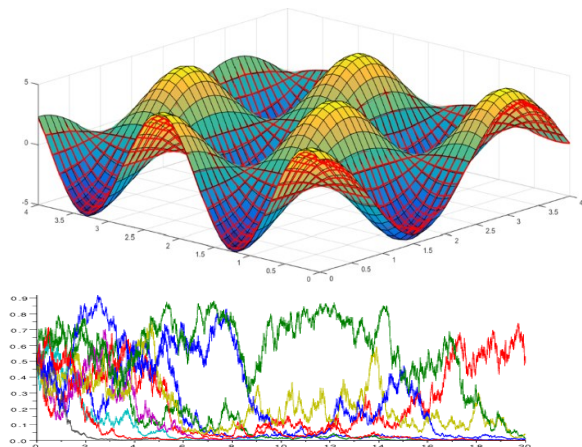
COMPDYN 2025

10th International Conference
on Computational Methods
in Structural Dynamics and
Earthquake Engineering

PROGRAMME

UNCECOMP 2025

6th International Conference
on Uncertainty Quantification
in Computational Science and
Engineering



Conference Secretariat:
Institute of Structural Analysis and Antiseismic Research
National Technical University of Athens, Greece



COMPDYN 2025

**10th International Conference on
Computational Methods in Structural
Dynamics and Earthquake Engineering**

*An ECCOMAS Thematic Conference
An IACM Special Interest Conference*

UNCECOMP 2025

**6th International Conference on
Uncertainty Quantification in
Computational Science and Engineering**

An ECCOMAS Thematic Conference

Rhodes Island, Greece, 15-18 June 2025

Programme



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

PROCEEDINGS

COMPDYN 2025



<https://2025.compdyn.org/proceedings>

UNCECOMP 2025



<https://2025.uncecomp.org/proceedings>

PROGRAMME OVERVIEW

DAY 1 - SUNDAY, JUNE 15 (part I)					
	OPENING	PLENARY LECTURES	ROOM	TECHNICAL SESSIONS	
13:30-16:00	16:00-16:15	16:15-17:35		17:45-19:45	20:00-21:00
REGISTRATION	OPENING Delphi	PLENARY LECTURES Delphi M. Ostoja-Starzewski, K-C. Park	Delphi	COMPDPN TS 13 NONLINEAR DYNAMICS	Welcome Reception Rodas Palace 12 Nissia (Lagoon area)
			Salon des Roses A	UNCECOMP MS 1 - I UNCERTAINTY QUANTIFICATION, RELIABILITY, AND SENSITIVITY ANALYSIS UNDER LIMITED DATA	
			Salon des Roses B	COMPDPN MS 53 SUSTAINABLE APPROACHES IN OPTIMUM DESIGN OF STRUCTURAL SYSTEMS	
			Athena	UNCECOMP MS 12 - I MULTISCALE AND MULTIPHYSICS MODELLING FOR COMPLEX MATERIALS (MMCM 21)	
			Nafsika A	COMPDPN MS 67 - I GLOBAL AND LOCAL BEHAVIOUR OF STEEL STRUCTURES UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS	
			Nafsika B	COMPDPN TS 14 - I NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS	
			Nefeli A	COMPDPN MS 3 - I ADVANCED DISCRETIZATION METHODS FOR COMPUTATIONAL STRUCTURAL DYNAMICS	
			Nefeli B	UNCECOMP MS 18 - I UNCERTAINTY QUANTIFICATION IN THE ERA OF SELF- SUPERVISED LEARNING AND NEURAL OPERATORS	

DAY 1 - SUNDAY, JUNE 15 (part II)					
	OPENING	PLENARY LECTURES	ROOM	TECHNICAL SESSIONS	
13:30-16:00	16:00-16:15	16:15-17:35		17:45-19:45	20:00-21:00
REGISTRATION	OPENING Delphi	PLENARY LECTURES Delphi M. Ostoja-Starzewski, K-C. Park	Rotisserie	UNCECOMP MS 6 UNCERTAINTY QUANTIFICATION AND SCIENTIFIC MACHINE LEARNING FOR RELIABLE DATA-DRIVEN MODELING AND SIMULATION IN SCIENCE AND ENGINEERING	
			Alpha	COMPDYN MS 50 MOVING LOADS AND INTERACTION PROBLEMS IN BRIDGE DYNAMICS	
			Gamma	COMPDYN MS 27 - I RESILIENCE, STRUCTURAL HEALTH MONITORING AND MANAGEMENT OF ASSETS AND NETWORKS IN TRANSPORTATION INFRASTRUCTURES	
			Epsilon	COMPDYN MS 76 SEISMIC SEISMIC ISOLATION AND ENERGY DISSIPATION - RESPONSE CONTROL SYSTEMS	COMPDYN MS 75 SEISMIC ASSESSMENT AND RETROFIT OF CULTURAL HERITAGE AND HISTORIC STRUCTURES
			Room A	COMPDYN MS 71 ARTIFICIAL INTELLIGENCE TECHNIQUES IN SEISMIC ENGINEERING	
			Room B	COMPDYN MS 51 - I DYNAMIC RESPONSE OF ENGINEERING STRUCTURES: EXPERIMENTAL TECHNIQUES, MATHEMATICAL MODELS AND DESIGN METHODS	
			Room C	COMPDYN TS 5 - I DYNAMICS OF CONCRETE AND MASONRY STRUCTURES	
			Room D	UNCECOMP MS 19 - I UNCERTAINTY QUANTIFICATION AND MACHINE LEARNING APPLICATIONS IN SCIENCES AND ENGINEERING	
			VIP Room		
				Welcome Reception Rodos Palace 12 Nissia (Lagoon area)	

DAY 2 - MONDAY, JUNE 16 (part I)

ROOM	8:00-9:00	TECHNICAL SESSIONS 9:00-11:00	11:00-11:30	PLENARY LECTURES 11:30-13:00	13:00-14:30	TECHNICAL SESSIONS 14:30-16:30	16:30-17:00	TECHNICAL SESSIONS 17:00-19:00
Delphi	REGISTRATION	UNCECOMP MS 7 - I SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION: NEW TRENDS	Coffee Break	PLENARY LECTURES Delphi R. Ghanem M. Hori	Lunch Break	UNCECOMP MS 7 - II SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION: NEW TRENDS	Coffee Break	UNCECOMP MS 7 - III SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION: NEW TRENDS
Salon des Roses A		UNCECOMP MS 1 - II UNCERTAINTY QUANTIFICATION, RELIABILITY, AND SENSITIVITY ANALYSIS UNDER LIMITED DATA				UNCECOMP MS 1 - III UNCERTAINTY QUANTIFICATION, RELIABILITY, AND SENSITIVITY ANALYSIS UNDER LIMITED DATA		UNCECOMP MS 1 - IV UNCERTAINTY QUANTIFICATION, RELIABILITY, AND SENSITIVITY ANALYSIS UNDER LIMITED DATA
Salon des Roses B		COMPDYN MS 15 - I ADVANCED NUMERICAL METHODS FOR DYNAMIC ANALYSIS OF PERIODIC STRUCTURES AND METAMATERIALS				COMPDYN MS 15 - II ADVANCED NUMERICAL METHODS FOR DYNAMIC ANALYSIS OF PERIODIC STRUCTURES AND METAMATERIALS		COMPDYN MS 15 - III ADVANCED NUMERICAL METHODS FOR DYNAMIC ANALYSIS OF PERIODIC STRUCTURES AND METAMATERIALS
Athena		UNCECOMP MS 12 - II MULTISCALE AND MULTIPHYSICS MODELLING FOR COMPLEX MATERIALS (MMCM 21)				UNCECOMP MS 12 - III MULTISCALE AND MULTIPHYSICS MODELLING FOR COMPLEX MATERIALS (MMCM 21)		COMPDYN TS 20 - I SEISMIC RISK AND RELIABILITY ANALYSIS
Nafsika A		COMPDYN MS 67 - II GLOBAL AND LOCAL BEHAVIOUR OF STEEL STRUCTURES UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS				COMPDYN MS 67 - III GLOBAL AND LOCAL BEHAVIOUR OF STEEL STRUCTURES UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS		COMPDYN TS 8 DYNAMICS OF STEEL STRUCTURES
Nafsika B		COMPDYN TS 14 - II NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS				COMPDYN TS 14 - III NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS		UNCECOMP MS 3 METHODOLOGICAL DEVELOPMENTS AND APPLICATIONS OF GLOBAL SENSITIVITY ANALYSIS IN SCIENCE AND ENGINEERING
Nefeli A		COMPDYN MS 3 - II ADVANCED DISCRETIZATION METHODS FOR COMPUTATIONAL STRUCTURAL DYNAMICS				COMPDYN MS 36 - I ADVANCES IN LOW-FIDELITY MODELING FOR STRUCTURAL DYNAMICS		COMPDYN MS 36 - II ADVANCES IN LOW-FIDELITY MODELING FOR STRUCTURAL DYNAMICS
Nefeli B		UNCECOMP MS 18 - II UNCERTAINTY QUANTIFICATION IN THE ERA OF SELF-SUPERVISED LEARNING AND NEURAL OPERATORS				COMPDYN TS 16 - I PERFORMANCE-BASED EARTHQUAKE ENGINEERING		COMPDYN TS 16 - II PERFORMANCE-BASED EARTHQUAKE ENGINEERING
Rotisserie		COMPDYN MS 46 - I RECENT ADVANCES IN MULTI-RISK ASSESSMENT OF EXISTING CONSTRUCTIONS HAVING ALSO HISTORICAL VALUE				COMPDYN MS 46 - II RECENT ADVANCES IN MULTI-RISK ASSESSMENT OF EXISTING CONSTRUCTIONS HAVING ALSO HISTORICAL VALUE		UNCECOMP MS 8 UNCERTAINTY QUANTIFICATION IN VIBRATION BASED MONITORING AND STRUCTURAL DYNAMICS SIMULATIONS

DAY 2 - MONDAY, JUNE 16 (part II)

ROOM		TECHNICAL SESSIONS			PLENARY LECTURES		TECHNICAL SESSIONS			TECHNICAL SESSIONS	
	8:00-9:00	9:00-11:00		11:00-11:30	11:30-13:00	13:00-14:30	14:30-16:30		16:30-17:00	17:00-19:00	
Alpha	REGISTRATION	COMPDPYN MS 19 - I RECENT ADVANCES IN RISK-INFORMED PRIORITISATION AND ASSESSMENT OF EXISTING BRIDGES		Coffee Break	PLENARY LECTURES Delphi R. Ghanem M. Hori	Lunch Break	COMPDPYN MS 19 - II RECENT ADVANCES IN RISK-INFORMED PRIORITISATION AND ASSESSMENT OF EXISTING BRIDGES		Coffee Break	COMPDPYN MS 19 - III RECENT ADVANCES IN RISK-INFORMED PRIORITISATION AND ASSESSMENT OF EXISTING BRIDGES	COMPDPYN MS 68 INTELLIGENT AND SOFT COMPUTING METHODS IN STRUCTURAL AND EARTHQUAKE ENGINEERING
Gamma		COMPDPYN MS 27 - II RESILIENCE, STRUCTURAL HEALTH MONITORING AND MANAGEMENT OF ASSETS AND NETWORKS IN TRANSPORTATION INFRASTRUCTURES					COMPDPYN MS 11 - I DEVELOPMENTS IN COMPUTATIONAL TOOLS FOR SEISMIC RISK MITIGATION			COMPDPYN MS 11 - II DEVELOPMENTS IN COMPUTATIONAL TOOLS FOR SEISMIC RISK MITIGATION	
Epsilon		COMPDPYN MS 1 RETROFIT STRATEGIES FOR SEISMIC PROTECTION OF STRUCTURES WITH INNOVATIVE VIBRATION CONTROL SYSTEMS					COMPDPYN MS 28- I NEW STRATEGIES IN COMPUTATIONAL MODELLING OF SUSTAINABLE CONSTRUCTIONS			COMPDPYN MS 28- II NEW STRATEGIES IN COMPUTATIONAL MODELLING OF SUSTAINABLE CONSTRUCTIONS	
Room A		UNCECOMP MS 16 - I MULTI-FIDELITY INFORMATION MANAGEMENT TO MITIGATE HIGH-FIDELITY DATA SCARCITY IN COMPUTATIONAL SCIENCE AND ENGINEERING					UNCECOMP MS 16 - II MULTI-FIDELITY INFORMATION MANAGEMENT TO MITIGATE HIGH-FIDELITY DATA SCARCITY IN COMPUTATIONAL SCIENCE AND ENGINEERING			COMPDPYN TS 9 GEOTECHNICAL EARTHQUAKE ENGINEERING	
Room B		COMPDPYN MS 51 - II DYNAMIC RESPONSE OF ENGINEERING STRUCTURES: EXPERIMENTAL TECHNIQUES, MATHEMATICAL MODELS AND DESIGN METHODS					COMPDPYN TS 3 BRIDGE DYNAMICS			COMPDPYN MS 49 ADVANCEMENTS IN SEISMIC VULNERABILITY ASSESSMENT: TOWARD AN INTEGRATED DISASTER RISK GOVERNANCE	
Room C		COMPDPYN TS 5 - II DYNAMICS OF CONCRETE AND MASONRY STRUCTURES					UNCECOMP MS 5 UNCERTAINTY PROPAGATION AND PROBABILISTIC PERFORMANCE ASSESSMENT IN ENGINEERING STRUCTURES			COMPDPYN MS 69 INNOVATIONS IN GROUND MOTION SELECTION AND SCALING TECHNIQUES FOR STRUCTURAL ENGINEERING APPLICATIONS	
Room D		UNCECOMP MS 19 - II UNCERTAINTY QUANTIFICATION AND MACHINE LEARNING APPLICATIONS IN SCIENCES AND ENGINEERING	COMPDPYN MS 21 EXPLAINABLE AND PHYSICS-INFORMED MACHINE LEARNING FOR NATURAL HAZARDS, EXPOSURE, AND RISK MODELLING				COMPDPYN MS 4 ADVANCES IN VIBRATION CONTROL OF OFFSHORE WIND TURBINE STRUCTURES			UNCECOMP MS 15 AI-ENHANCED MULTISCALE AND MULTIPHYSICS MODELING FOR ROBUST UNCERTAINTY QUANTIFICATION	
VIP Room		COMPDPYN MS 2 OPTIMIZATION FOR SEISMIC RISK REDUCTION: FROM STRUCTURAL MONITORING AND ASSESSMENT TO RETROFITTING DESIGN					COMPDPYN MS 5 MACHINE LEARNING APPLICATIONS IN EARTHQUAKE ENGINEERING			COMPDPYN MS 24 TIMBER-BASED STRUCTURAL SYSTEMS: RESEARCH ADVANCEMENTS AND INSIGHTS FOR NEW AND EXISTING STRUCTURES IN SEISMIC-PRONE AREAS	

DAY 3 - TUESDAY, JUNE 17 (part I)

ROOM	SEMI-PLenary LECTURES		TECHNICAL SESSIONS		TECHNICAL SESSIONS		TECHNICAL SESSIONS	
	9:00-11:00	11:00-11:30	11:30-13:30	13:30-14:30	14:30-16:30	16:30-17:00	17:00-19:00	20:30-23:30
Delphi	COMPdyn SEMI-PLenary LECTURES I G. Degrande, L. Chamoin, L. De Lorenzis	Coffee Break	UNCECOMP MS 7 - IV SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION: NEW TRENDS	Lunch Break	UNCECOMP MS 9 - I SOFTWARE FOR UNCERTAINTY QUANTIFICATION	Coffee Break	UNCECOMP MS 9 - II SOFTWARE FOR UNCERTAINTY QUANTIFICATION	Banquet Party - Rodos Palace Dome
Salon des Roses A	COMPdyn SEMI-PLenary LECTURES II G. Muscolino, M. DeJong, E. Tubaldi		COMPdyn MS 39 INNOVATIVE STRATEGIES AND TECHNOLOGIES FOR VIBRATION CONTROL OF BUILDINGS AND INFRASTRUCTURES		UNCECOMP TS 17 - I UNCERTAINTY QUANTIFICATION		UNCECOMP TS 17 - II UNCERTAINTY QUANTIFICATION	
Salon des Roses B	UNCECOMP SEMI-PLenary LECTURES I A Taflanidis, U. Nackenhorst, M.P. Mignolet		COMPdyn MS 14 - I PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS: FROM THE PAST TO THE FUTURE ADVANCES		COMPdyn MS 14 - II PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS: FROM THE PAST TO THE FUTURE ADVANCES		COMPdyn MS 14 - III PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS: FROM THE PAST TO THE FUTURE ADVANCES	
Athena	UNCECOMP SEMI-PLenary LECTURES II A. Doostan, M. Valdebenito, I. Papaioannou		COMPdyn TS 20 - II SEISMIC RISK AND RELIABILITY ANALYSIS		UNCECOMP MS 17 - I BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE AND ENGINEERING		UNCECOMP MS 17 - II BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE AND ENGINEERING	
Nafsika A			COMPdyn MS 73 - I ADVANCES AND CHALLENGES IN DYNAMIC SOIL- FOUNDATION-STRUCTURE INTERACTION		COMPdyn MS 73 - II ADVANCES AND CHALLENGES IN DYNAMIC SOIL- FOUNDATION-STRUCTURE INTERACTION		COMPdyn MS 41 INNOVATIVE APPROACHES FOR SEISMIC ASSESSMENT OF BUILT HERITAGE: FROM CONVENTIONAL TO PIONEERING TECHNIQUES	
Nafsika B			UNCECOMP MS 4 - I MODEL REDUCTION FOR UNCERTAINTY QUANTIFICATION		UNCECOMP MS 4 - II MODEL REDUCTION FOR UNCERTAINTY QUANTIFICATION		COMPdyn MS 31 - I ADVANCES AND CHALLENGES IN THE ASSESSMENT OF EXISTING BRIDGE STRUCTURES	
Nefeli A			COMPdyn MS 12 - I ERIES: ADVANCING SYNERGIES IN EARTHQUAKE AND WIND ENGINEERING THROUGH LABORATORY TESTING		COMPdyn MS 12 - II ERIES: ADVANCING SYNERGIES IN EARTHQUAKE AND WIND ENGINEERING THROUGH LABORATORY TESTING		COMPdyn MS 12 - III ERIES: ADVANCING SYNERGIES IN EARTHQUAKE AND WIND ENGINEERING THROUGH LABORATORY TESTING	
Nefeli B			COMPdyn MS 33 - I OPEN CHALLENGES IN SEISMIC RISK ASSESSMENT, MODELING AND STRENGTHENING OF UNREINFORCED MASONRY STRUCTURES		COMPdyn MS 33 - II OPEN CHALLENGES IN SEISMIC RISK ASSESSMENT, MODELING AND STRENGTHENING OF UNREINFORCED MASONRY STRUCTURES		UNCECOMP MS 20 ADVANCING SCIENTIFIC DISCOVERY WITH SCIML: NEURAL OPERATORS, GENERATIVE MODELING, AND PHYSICS-INFORMED TECHNIQUES	
Rotisserie			COMPdyn MS 66 - I SEISMIC RESPONSE AND CAPACITY EVALUATION OF NONSTRUCTURAL ELEMENTS THROUGH EXPERIMENTAL, ANALYTICAL, AND NUMERICAL METHODS		COMPdyn MS 66 - II SEISMIC RESPONSE AND CAPACITY EVALUATION OF NONSTRUCTURAL ELEMENTS THROUGH EXPERIMENTAL, ANALYTICAL, AND NUMERICAL METHODS		COMPdyn MS 35 DYNAMICS OF SOFT AND ULTRA-SOFT NATURAL MATERIALS AND METAMATERIALS: VIBRATION, IMPACT ANALYSIS AND OPTIMIZATION-BASED DESIGN OF THE MICROSTRUCTURE	

DAY 3 - TUESDAY, JUNE 17 (part II)

ROOM	SEMI-PLENARY LECTURES		TECHNICAL SESSIONS		TECHNICAL SESSIONS		TECHNICAL SESSIONS			
	9:00-11:00	11:00-11:30	11:30-13:30	13:30-14:30	14:30-16:30	16:30-17:00	17:00-19:00	20:30-23:30		
Alpha		Coffee Break	COMPDPN MS 57 - I ADVANCEMENTS IN OPENSEES APPLICATIONS FOR EARTHQUAKE ENGINEERING	Lunch Break	COMPDPN MS 57 - II ADVANCEMENTS IN OPENSEES APPLICATIONS FOR EARTHQUAKE ENGINEERING	Coffee Break	COMPDPN MS 57 - III ADVANCEMENTS IN OPENSEES APPLICATIONS FOR EARTHQUAKE ENGINEERING	UNCECOMP TS 16 SYSTEM RELIABILITY ANALYSIS, DESIGN AND RISK ASSESSMENT		
Gamma			COMPDPN MS 26 - I NEW PERSPECTIVES IN BASE ISOLATION AND ENERGY DISSIPATION DEVICES		COMPDPN MS 26 - II NEW PERSPECTIVES IN BASE ISOLATION AND ENERGY DISSIPATION DEVICES		COMPDPN MS 48 - I DEVELOPING ACCURATE NONLINEAR NUMERICAL MODELS BASED ON EXPERIMENTAL RESULTS			
Epsilon			COMPDPN MS 56 - I NUMERICAL MODELLING AND ANALYSIS OF STRUCTURES AND INFRASTRUCTURES USING DISCRETE ELEMENT APPROACHES		COMPDPN MS 56 - II NUMERICAL MODELLING AND ANALYSIS OF STRUCTURES AND INFRASTRUCTURES USING DISCRETE ELEMENT APPROACHES		COMPDPN MS 44 ASSESSMENT, RETROFIT AND ASSET MANAGEMENT OF STRUCTURES AND INFRASTRUCTURE SYSTEMS	COMPDPN MS 18 SEISMIC INTERVENTIONS AND SIMULATION FOR REGIONAL SCALE RETROFITTING		
Room A			COMPDPN MS 30 - I DAMAGE-CONTROL LOW-CARBON BUILDING TECHNOLOGIES FOR ENHANCING SEISMIC RESILIENCE AND ENVIRONMENTAL SUSTAINABILITY		COMPDPN MS 30 - II DAMAGE-CONTROL LOW-CARBON BUILDING TECHNOLOGIES FOR ENHANCING SEISMIC RESILIENCE AND ENVIRONMENTAL SUSTAINABILITY		COMPDPN MS 72 DIGITAL TOOLS AND INNOVATIVE MONITORING SYSTEMS FOR BUILT CULTURAL HERITAGE CONSERVATION			
Room B			COMPDPN MS 17 - I SEISMIC DEMANDS AND PERFORMANCE ASSESSMENT OF NON-STRUCTURAL COMPONENTS: CRITICAL ISSUES AND ADVANCED ANALYSIS		COMPDPN MS 17 - II SEISMIC DEMANDS AND PERFORMANCE ASSESSMENT OF NON-STRUCTURAL COMPONENTS: CRITICAL ISSUES AND ADVANCED ANALYSIS		COMPDPN MS 60 ADVANCED DISSIPATIVE DEVICES FOR EARTHQUAKE RESISTANT STEEL STRUCTURES	COMPDPN TS 15 - I OPTIMUM DESIGN AND CONTROL IN STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING		
Room C			COMPDPN TS 10 IMPACT DYNAMICS		COMPDPN MS 77 ADVANCEMENTS OF SIGNAL AND DATA PROCESSING METHODS FOR STRUCTURAL HEALTH		COMPDPN TS 2 - I ALGORITHMS FOR STRUCTURAL HEALTH MONITORING	COMPDPN TS 2 - II ALGORITHMS FOR STRUCTURAL HEALTH MONITORING		
Room D			COMPDPN MS 16 IN HONOR OF PROFESSOR GEORGE MANOS: EXPERIMENTAL MEASUREMENTS AND NUMERICAL SIMULATION IN THE FIELD OF EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS – INNOVATIVE SOLUTIONS FOR STRUCTURAL RETROFITTING		COMPDPN MS 38 - I STRUCTURAL HEALTH MONITORING AND DAMAGE DETECTION IN EXISTING STRUCTURES AND INFRASTRUCTURES: ADVANCED TECHNOLOGIES, DATA ANALYSIS, AND DAMAGE THRESHOLDS			COMPDPN MS 38 - II STRUCTURAL HEALTH MONITORING AND DAMAGE DETECTION IN EXISTING STRUCTURES AND INFRASTRUCTURES: ADVANCED TECHNOLOGIES, DATA ANALYSIS, AND DAMAGE THRESHOLDS	COMPDPN MS 25 A PATH TOWARDS EARTHQUAKE-RESILIENT COMMUNITIES: NOVEL METHODS FOR ASSESSING RISK AND RELIABILITY	
VIP Room			COMPDPN MS 10 - I MODELLING AND ANALYSIS OF STRUCTURES UNDER ADVERSE EVENTS BEFORE OR AFTER EARTHQUAKES		COMPDPN MS 10 - II MODELLING AND ANALYSIS OF STRUCTURES UNDER ADVERSE EVENTS BEFORE OR AFTER EARTHQUAKES		COMPDPN MS 45 - I SEISMIC RISK ASSESSMENT AND RETROFITTING STRATEGIES FOR STEEL STORAGE RACKS	COMPDPN MS 45 - II SEISMIC RISK ASSESSMENT AND RETROFITTING STRATEGIES FOR STEEL STORAGE RACKS		
Banquet Party - Rodos Palace Dome										

DAY 4 - WEDNESDAY, JUNE 18 (part I)

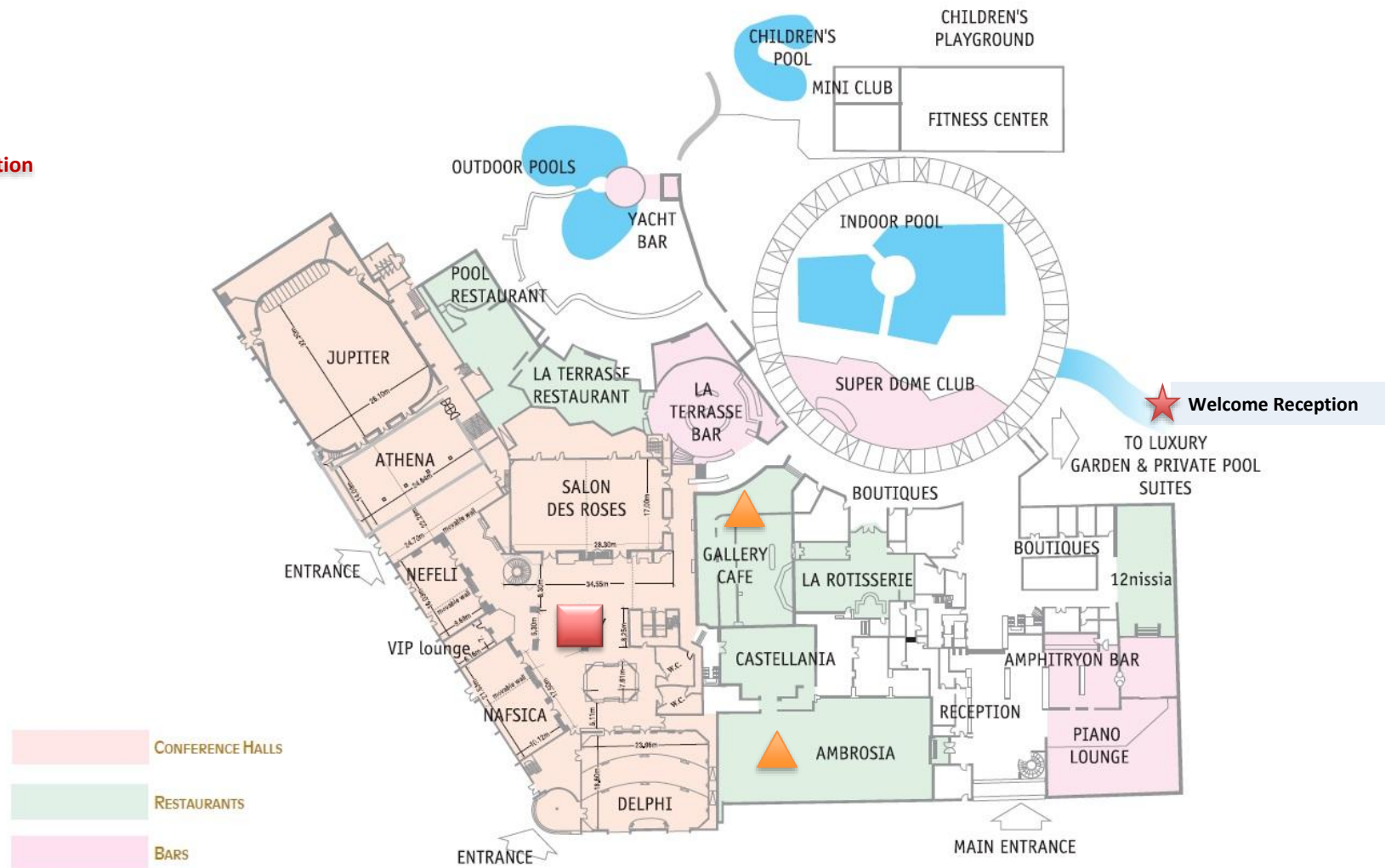
ROOM	TECHNICAL SESSIONS		PLENARY LECTURES		TECHNICAL SESSIONS		TECHNICAL SESSIONS
	9:00-11:00	11:00-11:30	11:30-13:00	13:00-14:30	14:30-16:30	16:30-17:00	17:00-19:00
Delphi	COMPDYN MS 8 - I ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN DESIGN AND ASSESSMENT OF STRUCTURES	Coffee Break	COMPDYN PLENARY LECTURES Delphi B. Jeremic, E. Chatzi	Lunch Break	COMPDYN SEMI-PLENARY LECTURES G. Rozza, M. Bischoff, D.C. Feng	Coffee Break	COMPDYN MS 8 - II ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN DESIGN AND ASSESSMENT OF STRUCTURES
Salon des Roses A	UNCECOMP TS 17 - III UNCERTAINTY QUANTIFICATION				SPECIAL TECHNOLOGICAL SESSION S. Antoniou, G. Stavroulakis		UNCECOMP TS 17 - IV UNCERTAINTY QUANTIFICATION
Salon des Roses B	COMPDYN MS 42 - I SEISMIC RISK ASSESSMENT AND MITIGATION OF MASONRY ARCHITECTURAL HERITAGE				COMPDYN MS 42 - II SEISMIC RISK ASSESSMENT AND MITIGATION OF MASONRY ARCHITECTURAL HERITAGE		COMPDYN MS 22 ADVANCES IN SEISMIC DESIGN AND ASSESSMENT OF EXISTING AND RETROFITTED PRECAST CONCRETE BUILDINGS
Athena	UNCECOMP MS 17 - III BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE AND ENGINEERING		UNCECOMP MS 17 - IV BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE AND ENGINEERING		COMPDYN MS 13 INNOVATIONS IN SEISMIC ASSESSMENT AND RETROFITTING OF INFILLED RC STRUCTURES: EXPERIMENTAL TESTING AND NUMERICAL SIMULATIONS		
Nafsika A	UNCECOMP MS 13 - I MONTE CARLO SAMPLING FOR STOCHASTIC SOLVERS: ADVANCES IN UNCERTAINTY QUANTIFICATION		UNCECOMP MS 13 - II MONTE CARLO SAMPLING FOR STOCHASTIC SOLVERS: ADVANCES IN UNCERTAINTY QUANTIFICATION		COMPDYN MS 6 UNCERTAINTY QUANTIFICATION IN COMPUTATIONAL STOCHASTIC DYNAMICS: RECENT ADVANCES		
Nafsika B	COMPDYN MS 31 - II ADVANCES AND CHALLENGES IN THE ASSESSMENT OF EXISTING BRIDGE STRUCTURES		COMPDYN MS 7 - I DYNAMIC MONITORING OF MONUMENTAL BUILDINGS AND ARTISTIC GOODS		COMPDYN MS 7 - II DYNAMIC MONITORING OF MONUMENTAL BUILDINGS AND ARTISTIC GOODS		
Nefeli A	UNCECOMP MS 2 - I PHYSICS-ENHANCED MACHINE LEARNING IN ENGINEERING		UNCECOMP MS 2 - II PHYSICS-ENHANCED MACHINE LEARNING IN ENGINEERING		COMPDYN MS 9 TIME INTEGRATION AND RESPONSE HISTORY ANALYSIS: CURRENT TRENDS IN THEORY AND PRACTICE		
Nefeli B	COMPDYN MS 23 - I ADVANCED NUMERICAL METHODS IN DYNAMICS, PARTITIONED ANALYSIS AND COUPLED PROBLEMS		COMPDYN MS 23 - II ADVANCED NUMERICAL METHODS IN DYNAMICS, PARTITIONED ANALYSIS AND COUPLED PROBLEMS		COMPDYN MS 34 ADVANCES IN DETERMINISTIC AND DATA-DRIVEN METHODS FOR DAMAGE AND FRACTURE MODELING		

DAY 4 - WEDNESDAY, JUNE 18 (part II)

ROOM	TECHNICAL SESSIONS		11:00-11:30	PLENARY LECTURES	13:00-14:30	TECHNICAL SESSIONS		16:30-17:00	TECHNICAL SESSIONS	
	9:00-11:00			11:30-13:00		14:30-16:30			17:00-19:00	
Rotisserie	COMPDPYN MS 54 - I NOVEL TRENDS AND APPLICATIONS OF ISOLATION AND DISSIPATION DEVICES FOR IMPROVED RESILIENCE OF STRUCTURES TO EARTHQUAKES		Coffee Break	COMPDPYN PLENARY LECTURES Delphi K-C. Park, B. Jeremic, E. Chatzi	Lunch Break	COMPDPYN MS 54 - II NOVEL TRENDS AND APPLICATIONS OF ISOLATION AND DISSIPATION DEVICES FOR IMPROVED RESILIENCE OF STRUCTURES TO EARTHQUAKES		Coffee Break	COMPDPYN MS 32 GROUND-BORNE NOISE AND VIBRATIONS INDUCED BY RAILWAY TRAFFIC AND CONSTRUCTION ACTIVITIES	
Alpha	COMPDPYN MS 55 - I OPTIMIZATION-DRIVEN DESIGN AND RETROFIT STRATEGIES FOR ENHANCING SUSTAINABILITY IN STRUCTURAL SYSTEMS					COMPDPYN MS 55 - II OPTIMIZATION-DRIVEN DESIGN AND RETROFIT STRATEGIES FOR ENHANCING SUSTAINABILITY IN STRUCTURAL SYSTEMS			COMPDPYN MS 55 - III OPTIMIZATION-DRIVEN DESIGN AND RETROFIT STRATEGIES FOR ENHANCING SUSTAINABILITY IN STRUCTURAL SYSTEMS	
Gamma	COMPDPYN MS 48 - II DEVELOPING ACCURATE NONLINEAR NUMERICAL MODELS BASED ON EXPERIMENTAL RESULTS	COMPDPYN MS 70 BEHAVIOUR OF STRUCTURES AND INFRASTRUCTURES WITH DEGRADED/CORRODED MEMBERS AND BEARINGS: EXPERIMENTAL CAMPAIGNS AND NUMERICAL APPLICATIONS				UNCECOMP MS 7 - V SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION: NEW TRENDS			COMPDPYN MS 63 ROCKING SYSTEMS IN STRUCTURAL ENGINEERING: FROM THE BEHAVIOR OF ROCKING BLOCKS AND ASSEMBLIES TO THE SEISMIC DESIGN AND PERFORMANCE OF MODERN ROCKING AND SELF-CENTERING SYSTEMS	
Epsilon	UNCECOMP MS 14 - I OPTIMIZATION UNDER UNCERTAINTY			UNCECOMP PLENARY LECTURES		UNCECOMP MS 14 - II OPTIMIZATION UNDER UNCERTAINTY				
Room A	COMPDPYN TS 18 - I REPAIR AND RETROFIT OF STRUCTURES			Salon des Roses A		COMPDPYN TS 18 - II REPAIR AND RETROFIT OF STRUCTURES				
Room B	COMPDPYN TS 15 - II OPTIMUM DESIGN AND CONTROL IN STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING			C. Papadimitriou, W. Wall		COMPDPYN TS 15 - III OPTIMUM DESIGN AND CONTROL IN STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING				
Room C	COMPDPYN TS 23 - I SOIL-STRUCTURE INTERACTION & SOIL DYNAMICS					COMPDPYN TS 23 - II SOIL-STRUCTURE INTERACTION & SOIL DYNAMICS				
Room D	COMPDPYN TS 26 - I STEEL STRUCTURES				COMPDPYN TS 26 - II STEEL STRUCTURES					
VIP Room	COMPDPYN MS 59 - I SEISMIC ASSESSMENT AND RETROFITTING OF EXISTING STEEL STRUCTURES: CURRENT PRACTICE AND FUTURE CHALLENGES				COMPDPYN MS 59 - II SEISMIC ASSESSMENT AND RETROFITTING OF EXISTING STEEL STRUCTURES: CURRENT PRACTICE AND FUTURE CHALLENGES		COMPDPYN MS 29 LIFECYCLE CONSEQUENCE ANALYSIS OF BUILDINGS AND INFRASTRUCTURE SUBJECT TO EARTHQUAKES AND OTHER HAZARDS			

Conference Centre Rooms Hotel Facilities

- ★ Welcome Reception
- ▲ Lunch options
- Coffee Breaks



Conference Centre Rooms



Greetings from the Chairpersons

Welcome to the jointly organized ECCOMAS Thematic Conferences: The **10th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2025)**, and the **6th International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2025)**.

COMPDYN 2025 is one of the 32 Thematic Conferences of the European Community on Computational Methods in Applied Sciences (ECCOMAS) to be held in 2025 and is also a Special Interest Conference of the International Association for Computational Mechanics (IACM). This Conference series aims to act as a forum for exchanging ideas and enhancing the links between research groups of the scientific communities of Computational Mechanics, Structural Dynamics, and Earthquake Engineering, on topics of mutual interest. We anticipate that the communities of Structural Dynamics and Earthquake Engineering will benefit from their exposure to advanced computational methods and software tools that can be used for addressing complex problems in dynamic and seismic analysis and design of structures, while giving also the opportunity to the Computational Mechanics community to be exposed to critical engineering application areas of great societal interest. The COMPDYN 2025 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 2025 is also an ECCOMAS thematic Conference, reflecting recent research progress in the analysis and design of engineering systems under uncertainty. The conference aims to enhance researchers' knowledge of stochastic methods and the associated computational tools for achieving reliable predictions of complex systems' responses. The UNCECOMP conference series, held in conjunction with the COMPDYN conferences, allows the participants to interact with the Computational Dynamics community, enhance their research opportunities, and broaden their fields of interest. The UNCECOMP 2025 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 who accepted the invitation to address a Plenary/Semi-Plenary Lecture and to the authors for presenting their contributions and their efforts to respect the deadlines. Special thanks go to the 289 colleagues who have been involved in organizing the 98 Minisymposia and to the Reviewers who, with their work, contributed to the scientific quality of the conference.

Dear Participants, welcome to **Rhodes**, the largest island and the capital of the Dodecanese Island complex in the South-Eastern Aegean Sea. Rhodes has a long and rich history dating back several thousand years and is famous for the Colossus of Rhodes, one of the Seven Wonders of the Ancient World. A massive bronze statue of the sun God Helios, 33 m tall, roughly the height of the Statue of Liberty from feet to crown, that adorned the entrance to the harbor of Rhodes. Unfortunately, the statue stood for only 56 years as it was toppled by a massive earthquake in 226 BC.

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 scientific meetings and experience an unforgettable stay on the island of Rhodes.



Manolis Papadrakakis

Co-Chairperson of
COMPDYN 2025
&
UNCECOMP 2025



Michalis Fragiadakis

Co-Chairperson of
COMPDYN 2025



Vissarion Papadopoulos

Co-Chairperson of
UNCECOMP 2025



George Stefanou

Co-Chairperson of
UNCECOMP 2025

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COMPDYN 2025

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

UNCECOMP 2025

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G. Stefanou, *Aristotle University of Thessaloniki, Greece*

Conference Guide

Programme Format

The Technical Programme consists of 24 Plenary and Semi-Plenary Lectures, 36 keynote lectures, 99 minisymposia and 16 Thematic Sessions. In total more than 930 presentations will take place during the four days of the conferences.

Plenary & Semi-Plenary Lecturers



Manfred Bischoff

University of Stuttgart, Germany

C 25442 INTRINSICALLY SELECTIVE MASS SCALING WITH HIERARCHIC
PLATE FORMULATIONS

Wednesday, 15:10-15:50, Delphi



Ludovic Chamoin

ENS Paris-Saclay, France

C 27215 INTEGRATED STRUCTURAL HEALTH MONITORING WITH REAL-
TIME DATA ASSIMILATION AND HYBRID TWINS OF DYNAMICAL
SYSTEMS

Tuesday, 9:40-10:20, Delphi



Eleni Chatzi

ETH Zurich, Switzerland

C 26194 PHYSICS-DRIVEN LEARNING FOR DYNAMICS & TWINNING |
BRIDGING MODELS AND REALITY

Wednesday, 12:50-13:30, Delphi



Laura De Lorenzis

ETH Zurich, Switzerland

U 21564 CALIBRATION AND DISCOVERY OF MATERIAL MODELS
ACCOUNTING FOR UNCERTAINTY

Tuesday, 10:20-11:00, Delphi



Geert Degrande

KU Leuven, Belgium

C 27806 ASSESSMENT OF ENVIRONMENTAL VIBRATION AND NEWTONIAN NOISE FOR THE EINSTEIN TELESCOPE

Tuesday, 9:00-9:40, Delphi



Matthew DeJong

University of California, Berkeley, USA

C 27767 ACCELERATING NATURAL HAZARDS RESEARCH THROUGH SHARED COMPUTATION: APPLICATIONS IN EARTHQUAKE AND WIND ENGINEERING

Tuesday, 9:40-10:20, Salon des Roses A



Alireza Doostan

University of Colorado Boulder, USA

U 21554 UNCERTAINTY QUANTIFICATION AND GENERATIVE MODELING USING MULTI-FIDELITY STRATEGIES

Tuesday, 9:00-9:40, Athena



De-Cheng Feng

Southeast University, China

C 26132 DOMAIN KNOWLEDGE-ENHANCED SURROGATE MODELING FOR EFFICIENT SEISMIC ANALYSIS

Wednesday, 15:50-16:30, Delphi



Roger Ghanem

University of Southern California, USA

C 27305 EXCURSIONS IN DATA ASSIMILATION: FROM OBSERVATIONS TO DECISIONS

Monday, 11:30-12:15, Delphi



Muneo Hori

The University of Tokyo, Japan

C 26193 DIGITAL TWIN FOR CRITICAL INFRASTRUCTURES USING HIGH-PERFORMANCE COMPUTING – FROM 3 D TO 4D

Monday, 12:15-13:00, Delphi



Boris Jeremic

University of California Davis, USA

C 27114 SEISMIC SHIELDING

Wednesday, 12:10-12:50, Delphi



Marc P. Mignolet

Arizona State University, USA

U 21710 STRUCTURAL UNCERTAINTY MODELING AT THE FINITE ELEMENT LEVEL

Tuesday, 10:20-11:00, Salon des Roses B



Giuseppe Muscolino

Università degli Studi di Messina, Italy

C 27687 DYNAMICS OF STRUCTURES WITH FRACTIONAL VISCOELASTIC DEVICES SUBJECTED TO STOCHASTIC EXCITATION

Tuesday, 9:00-9:40, Salon des Roses A



Udo Nackenhorst

Leibniz University Hannover, Germany

U 21434 STOCHASTIC FINITE ELEMENT ANALYSIS OF NON-LINEAR PROBLEMS IN LARGE DIMENSIONS

Tuesday, 9:40-10:20, Salon des Roses B



Martin Ostoja-Starzewski

University of Illinois, USA

- U 21681** TENSOR RANDOM FIELDS FOR STOCHASTIC MECHANICS
Sunday, 16:15-16:55, Delphi



Costas Papadimitriou

University of Thessaly, Greece

- U 22070** HIERARCHICAL BAYESIAN INFERENCE FRAMEWORK FOR
UNCERTAINTY QUANTIFICATION AND RELIABILITY UPDATING IN
DYNAMICAL SYSTEMS
Wednesday, 11:30-12:10, Salon des Roses A



Iason Papaioannou

Technische Universität München

- U 22234** EFFICIENT RELIABILITY ASSESSMENT OF DYNAMICAL SYSTEMS
UNDER PARAMETER UNCERTAINTY
Tuesday, 10:20-11:00, Athena



K. C. Park

University of Colorado, Boulder, CO, USA

- C 27326** A NOVEL METHOD OF FEM MODELING AND SOLUTION WITHOUT
ASSEMBLY: CAN IT BE POSSIBLE? YES, IT IS POSSIBLE!
Sunday, 16:55-17:35, Delphi



Gianluigi Rozza

SISSA, Italy

- U 21304** REDUCED ORDER METHODS IN CFD FOR UNCERTAINTY
QUANTIFICATION
Wednesday, 14:30-15:10, Delphi



Alexandros Taflanidis

University of Notre Dame, USA

U 21682 ADAPTIVE UNCERTAINTY PROPAGATION FOR REGIONAL COASTAL RISK ASSESSMENT

Tuesday, 9:00-9:40, Salon des Roses B



Enrico Tubaldi

University of Strathclyde, UK

C 25772 ADVANCING SEISMIC RESILIENCE OF STRUCTURES WITH OPTIMISED RUBBER-BASED DEVICES

Tuesday, 10:20-11:00, Salon des Roses A



Marcos Valdebenito

TU Dortmund University, Germany

U 22088 COPING WITH UNCERTAINTY IN LINEAR DYNAMICS WITH ADVANCED SIMULATION METHODS

Tuesday, 9:40-10:20, Athena



Wolfgang Wall

Technical University of Munich, Germany

U 22248 ADVANCED METHODS FOR UNCERTAINTY QUANTIFICATION, INVERSE ANALYSIS AND DIGITAL TWINNING FOR COMPLEX AND MULTI-PHYSICS PROBLEMS

Wednesday, 12:10-12:50, Salon des Roses A

Keynote Lecturers

Liborio Cavaleri

- C 25629** VULNERABILITY OF MASONRY STRUCTURES UNDER A COMBINATION OF LOADS DUE TO TSUNAMI AND EARTHQUAKE
Tuesday, 11:30-13:30, VIP Room

Elena Cherkaev

- U 21513** HIDDEN VARIABLES IN MULTISCALE COMPOSITE MATERIALS
Monday, 14:30-16:30, Athena

Gian Paolo Cimellaro

- C 26923** PRELIMINARY DAMAGE ASSESSMENT OF MOLETTA TOWER OF CIRCUS MAXIMUS DUE TO CROWD-INDUCED VIBRATIONS
Tuesday, 14:30-16:30, Salon des Roses B

Francesco Clementi

- C 26080** ON THE DYNAMICS OF MASONRY CHURCH: DISCONTINUOUS AND CONTINUOUS APPROACHES
Tuesday, 17:00-19:00, Salon des Roses B

Jean-François Deü

- C 25801** TIME INTEGRATION ALGORITHM FOR THE ANALYSIS OF VISCOELASTIC DAMPED STRUCTURES CONSIDERING FRACTIONAL DERIVATIVE CONSTITUTIVE MODELS
Sunday, 17:45-19:45, Nafsika B

Mariano Di Domenico

- C 25295** CALIBRATED FIBER MODEL FOR SEISMIC ANALYSIS OF DUCTILE RC COLUMNS WITH RIBBED BARS
Wednesday, 9:00-11:00, Gamma

Luigi Di Sarno

- C 27784** AGEING OF STEEL CRITICAL INFRASTRUCTURE: THE CASE OF PETROCHEMICAL PLANTS
Wednesday, 9:00-11:00, VIP Room

Fabio Di Trapani

- C 25516** GENETIC ALGORITHM-BASED FRAMEWORK FOR ENVIRONMENTAL AND ECONOMIC SUSTAINABLE SEISMIC RETROFITTING DESIGN OF REINFORCED CONCRETE FRAME STRUCTURES
Tuesday, 11:30-13:30, Alpha

Denis Duhamel

- C 25307** DYNAMIC COMPUTATION OF LARGE FINITE TWO-DIMENSIONAL PERIODIC STRUCTURES MADE OF LINEAR ELASTIC MATERIALS
Monday, 14:30-16:30, Salon des Roses B

Antonio Formisano

- C 26927** NATURAL FIBRE COMPOSITES IN GREEN CONSTRUCTIONS: EXPERIMENTAL TESTS ON LIME-BASED MORTARS WITH HEMP AND RECYCLED AGGREGATES
Wednesday, 14:30-16:30, Alpha

Tomasz Garbowski

- U 21479** SECTIONAL HOMOGENIZATION WITH A GENERAL NONLINEAR CONSTITUTIVE LAW FOR CORRUGATED BOARD ANALYSIS
Sunday, 17:45-19:45, Athena

Anthony Gravouil

- C 26041** A GENERAL EXPLICIT FRAMEWORK FOR NON-SMOOTH DYNAMICS
Wednesday, 17:00-19:00, Nefeli A

Ling Guo

- U 21457** UNCERTAINTY QUANTIFICATION IN SCIENTIFIC MACHINE LEARNING VIA THE INFORMATION BOTTLENECK PRINCIPLE
Monday, 9:00-11:00, Nefeli B

Michael Hanss

- U 21408** A POSSIBILISTIC APPROACH TO UNCERTAINTY QUANTIFICATION IN QUANTUM ALGORITHMS
Sunday, 17:45-19:45, Salon des Roses A

Terje Haukaas

- C 24498** READING RESPONSE SENSITIVITIES FROM INELASTIC DYNAMIC ANALYSIS
Sunday, 17:45-19:45, Delphi

Stefano Marelli

- U 21050** SURROGATE MODELING AND MACHINE LEARNING REGRESSION: AN EXTENSIVE BENCHMARK STUDY
Monday, 9:00-11:00, Delphi

Giuseppe Carlo Marano

- C 24629** PARAMETRIC DESIGN MEETS AI: SHAPING THE FUTURE OF STRUCTURAL ENGINEERING
Monday, 17:00-19:00, VIP Room

George Markou

- C 25598** FRAMEWORK FOR A PRACTICAL AND COST-EFFECTIVE IOT-ENHANCED STRUCTURAL HEALTH MONITORING AND DAMAGE DIAGNOSTICS SYSTEM WITH DIGITAL TWINNING
Tuesday, 14:30-16:30, Room D

Jean-Mathieu Mencik

- C 24867** TIME RESPONSE COMPUTATION OF 1D-PERIODIC STRUCTURES WITH WAVE-BASED ABSORBING BOUNDARY CONDITIONS
Monday, 9:00-11:00, Salon des Roses B

Mostafa Mobasher

- C 24423** MULTI-STAGED OPTIMIZATION FRAMEWORK FOR THE EFFICIENT CALIBRATION OF DAMAGE MECHANICS MODELS
Tuesday, 17:00-19:00, Gamma

Andrea Nettis

- C 26105** TOWARDS LOSS-BASED SEISMIC DESIGN FOR BRIDGES: ACCURACY OF SIMPLIFIED STRATEGIES FOR LOSS ASSESSMENT
Monday, 14:30-16:30, Alpha

Angelos Pagonas

- C 25160** IMMERSED IGA AND MASS LUMPING FOR EXPLICIT DYNAMICS OF STRUCTURAL ELEMENTS
Sunday, 17:45-19:45, Nefeli A

Stefano Pampanin

- C 25961** TOWARDS AN INTEGRATED INTERDISCIPLINARY APPROACH FOR LARGE-SCALE MODELLING, SIMULATION AND MANAGEMENT OF NATURAL DISASTERS: A VIRTUAL CASE STUDY URBAN AREA
Monday, 14:30-16:30, Nefeli B

Paris Perdikaris

- U 20961** CONTINUOUS VISION TRANSFORMER FOR OPERATOR LEARNING
Sunday, 17:45-19:45, Nefeli B

Vagelis Plevris

- U 21569** NAVIGATING UNCERTAINTY IN IMAGE-BASED STRUCTURAL HEALTH MONITORING: THE ROLE OF FALSE POSITIVES, FALSE NEGATIVES, AND BASE RATE BIAS
Tuesday, 14:30-16:30, Salon des Roses A

Bojana Rosic

- U 21427** COUPLED NEURAL NETWORKS FOR MULTIPHYSICS PROBLEMS
Tuesday, 11:30-13:30, Nafsika B

Sei-ichiro Sakata

- U 21240** INFLUENCE OF MACROSCOPIC/MICROSCOPIC RESOLUTION ON MULTISCALE STOCHASTIC STRENGTH ANALYSIS OF COMPOSITES WITH RANDOM FIELD MODELING
Monday, 09:00-11:00, Athena

Jakob Scheffels

- U 21373** MODEL ORDER REDUCTION FOR LINEAR BAYESIAN INVERSE PROBLEMS
Tuesday, 14:30-16:30, Nafsika B

Dominik Schillinger

- C 26182** HIGHER-ORDER ACCURATE MASS LUMPING IN EXPLICIT ISOGEOMETRIC STRUCTURAL DYNAMICS USING APPROXIMATE DUAL BASIS FUNCTIONS
Monday, 9:00-11:00, Nefeli A

Alba Sofi

- U 21460** CAPACITY BOUNDS OF UNREINFORCED MASONRY WALLS WITH INTERVAL MECHANICAL PROPERTIES
Monday, 09:00-11:00, Salon des Roses A

Constantine Spyrakos

C 25782 SEISMIC ISOLATION AND ITS EFFECTIVENESS AS A STRENGTHENING TECHNIQUE: A CASE STUDY

Sunday, 17:45-19:45, Epsilon

Timothy Sullivan

C 24567 HIGHLIGHTING THE NEED FOR IMPROVED CONSIDERATION OF RISK IN THE DEFINITION OF SEISMIC DESIGN CRITERIA

Monday, 17:00-19:00, Athena

Arturo Tena-Colunga

C 24781 IMPACT OF DIAPHRAGM FLEXIBILITY ON DYNAMIC PROPERTIES AND LATERAL DISPLACEMENTS OF HIGHLY IRREGULAR BUILDINGS

Sunday, 17:45-19:45, Room C

Giuseppina Uva

C 25609 MTINSAR, STRUCTURAL INFORMATION AND ENVIRONMENTAL DATA TO ESTIMATE DEFORMATIONS OVER TIME OF SIMPLY SUPPORTED CONCRETE GIRDER BRIDGES: A FRAMEWORK PROPOSAL

Monday, 9:00-11:00, Alpha

Fabrizio Vestroni

C 25588 ANALYSIS OF THE RECORDED RESPONSE OF THE COLOSSEUM TO AN EARTHQUAKE

Tuesday, 11:30-13:30, Salon des Roses B

Miroslav Vořechovský

U 21511 GAUSSIAN PROCESS-ENHANCED SURROGATE MODELING AND ACTIVE LEARNING FOR EFFICIENT RARE EVENT PROBABILITY ESTIMATION IN ENGINEERING

Tuesday, 11:30-13:30, Delphi

COMPDYN 2025

Compdyn Minisymposia

C-MS 1: RETROFIT STRATEGIES FOR SEISMIC PROTECTION OF STRUCTURES WITH INNOVATIVE VIBRATION CONTROL SYSTEMS

MS Organizers: Evangelos Sapountzakis, Konstantinos A. Kapasakalis

MS 1: Monday, 9:00-11:00, Epsilon

C-MS 2: OPTIMIZATION FOR SEISMIC RISK REDUCTION: FROM STRUCTURAL MONITORING AND ASSESSMENT TO RETROFITTING DESIGN

MS Organizers: Giulia Angelucci, Fabrizio Mollaioli, Giuseppe Quaranta, Humberto Varum

MS 2: Monday, 9:00-11:00, VIP Room

C-MS 3: ADVANCED DISCRETIZATION METHODS FOR COMPUTATIONAL STRUCTURAL DYNAMICS

MS Organizers: Bastian Oesterle, Manfred Bischoff, Alessandro Reali

MS 3 - I: Sunday, 17:45-19:45, Nefeli A

MS 3 - II: Monday, 9:00-11:00, Nefeli A

C-MS 4: ADVANCES IN VIBRATION CONTROL OF OFFSHORE WIND TURBINE STRUCTURES

MS Organizers: Konstantinos A. Kapasakalis, Georgios I. Florakis

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

C-MS 5: MACHINE LEARNING APPLICATIONS IN EARTHQUAKE ENGINEERING

MS Organizers: Konstantinos G. Megalooikonomou, Grigorios N. Beligiannis

MS 5: Monday, 14:30-16:30, VIP Room

C-MS 6: UNCERTAINTY QUANTIFICATION IN COMPUTATIONAL STOCHASTIC DYNAMICS: RECENT ADVANCES

MS Organizers: Marcos Valdebenito, Hector Jensen, Jianbing Chen, Vaisleios Fragkoulis, Tim Rogers, Matthias Faes

MS 6: Wednesday, 17:00-19:00, Nafsika A

C-MS 7: DYNAMIC MONITORING OF MONUMENTAL BUILDINGS AND ARTISTIC GOODS

MS Organizers: Stefania Viti, Marco Tanganelli, Riccardo Mario Azzara

MS 7 - I: Wednesday, 14:30-16:30, Nafsika B

MS 7 - II: Wednesday, 17:00-19:00, Nafsika B

C-MS 8: ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN DESIGN AND ASSESSMENT OF STRUCTURES

MS Organizers: George Markou, Nikolaos P. Bakas, Savvas A. Chatzichristofis

MS 8 - I: Wednesday, 9:00-11:00, Delphi

MS 8 - II: Wednesday, 17:00-19:00, Delphi

C-MS 9: TIME INTEGRATION AND RESPONSE HISTORY ANALYSIS: CURRENT TRENDS IN THEORY AND PRACTICE

MS Organizers: Aram Soroushian, Kumar K. Tamma

MS 9: Wednesday, 17:00-19:00, Nefeli A

C-MS 10: MODELLING AND ANALYSIS OF STRUCTURES UNDER ADVERSE EVENTS BEFORE OR AFTER EARTHQUAKES

MS Organizers: Mariano Di Domenico, Francesca Ferretti, Paolo Ricci, Gerardo Verderame, Andrea Prota

MS 10 - I: Tuesday, 11:30-13:30, VIP Room
MS 10 - II: Tuesday, 14:30-15:10, VIP Room

C-MS 11: DEVELOPMENTS IN COMPUTATIONAL TOOLS FOR SEISMIC RISK MITIGATION

MS Organizers: Davit Shahnazaryan, Volkan Ozsarac, Gerard J. O'Reilly

MS 11 - I: Monday, 14:30-16:30, Gamma
MS 11 - II: Monday, 17:00-19:00, Gamma

C-MS 12: ERIES: ADVANCING SYNERGIES IN EARTHQUAKE AND WIND ENGINEERING THROUGH LABORATORY TESTING

MS Organizers: Gerard J. O'Reilly, Gian Michele Calvi

MS 12 - I: Tuesday, 11:30-13:30, Nefeli A
MS 12 - II: Tuesday, 14:30-16:30, Nefeli A
MS 12 - III: Tuesday, 17:00-19:00, Nefeli A

C-MS 13: INNOVATIONS IN SEISMIC ASSESSMENT AND RETROFITTING OF INFILLED RC STRUCTURES: EXPERIMENTAL TESTING AND NUMERICAL SIMULATIONS

MS Organizers: André Furtado, Maria Teresa de Risi

MS 13: Wednesday, 17:00-19:00, Athena

C-MS 14: PRESERVATION OF MASONRY STRUCTURES AND INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC RISKS: FROM THE PAST TO THE FUTURE ADVANCES

MS Organizers: Michele Betti, Nicola Cavalagli, Francesco Clementi, Antonio Formisano, Salvador Ivorra Chorro, Gabriele Milani

MS 14 - I: Tuesday, 11:30-13:30, Salon des Roses B
MS 14 - II: Tuesday, 14:30-16:30, Salon des Roses B
MS 14 - III: Tuesday, 17:00-19:00, Salon des Roses B

C-MS 15: ADVANCED NUMERICAL METHODS FOR DYNAMIC ANALYSIS OF PERIODIC STRUCTURES AND METAMATERIALS

MS Organizers: Jean-Mathieu Mencik, Denis Duhamel

MS 15 - I: Monday, 9:00-11:00, Salon des Roses B
MS 15 - II: Monday, 14:30-16:30, Salon des Roses B
MS 15 - III: Monday, 17:00-19:00, Salon des Roses B

C-MS 16: IN HONOR OF PROFESSOR GEORGE MANOS: EXPERIMENTAL MEASUREMENTS AND NUMERICAL SIMULATION IN THE FIELD OF EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS - INNOVATIVE SOLUTIONS FOR STRUCTURAL RETROFITTING

MS Organizer: Konstantinos Katakalos

MS 16: Tuesday, 11:30-13:30, Room D

C-MS 17: SEISMIC DEMANDS AND PERFORMANCE ASSESSMENT OF NON-STRUCTURAL COMPONENTS: CRITICAL ISSUES AND ADVANCED ANALYSIS

MS Organizers: Daniele Perrone, Sergio Ruggieri, Vladimir Vukobratović, Rola Assi

MS 17 - I: Tuesday, 11:30-13:30, Room B

MS 17 - II: Tuesday, 14:30-15:30, Room B

C-MS 18: SEISMIC INTERVENTIONS AND SIMULATION FOR REGIONAL SCALE RETROFITTING

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

MS 18: Tuesday, 17:00-19:00, Epsilon

C-MS 19: RECENT ADVANCES IN RISK-INFORMED PRIORITISATION AND ASSESSMENT OF EXISTING BRIDGES

MS Organizers: Andrea Nettis, Sergio Ruggieri, Andrea Meoni, Agnese Natali, Mariano Angelo Zanini

MS 19 - I: Monday, 9:00-11:00, Alpha

MS 19 - II: Monday, 14:30-16:30, Alpha

MS 19 - III: Monday, 17:00-18:00, Alpha

C-MS 21: EXPLAINABLE AND PHYSICS-INFORMED MACHINE LEARNING FOR NATURAL HAZARDS, EXPOSURE, AND RISK MODELLING

MS Organizers: Jawad Fayaz, Mohsen Zaker Esteghamati

MS 21: Monday, 9:00-11:00, Room D

C-MS 22: ADVANCES IN SEISMIC DESIGN AND ASSESSMENT OF EXISTING AND RETROFITTED PRECAST CONCRETE BUILDINGS

MS Organizers: Davide Bellotti, Francesco Cavalieri, Andrea Belleri

MS 22: Wednesday, 17:00-19:00, Salon des Roses B

C-MS 23: ADVANCED NUMERICAL METHODS IN DYNAMICS, PARTITIONED ANALYSIS AND COUPLED PROBLEMS

MS Organizers: Radek Kolman, Jin-Gyun Kim, José A. González, K.C. Park

MS 23 - I: Wednesday, 9:00-11:00, Nefeli B

MS 23 - II: Wednesday, 14:30-16:30, Nefeli B

C-MS 24: TIMBER-BASED STRUCTURAL SYSTEMS: RESEARCH ADVANCEMENTS AND INSIGHTS FOR NEW AND EXISTING STRUCTURES IN SEISMIC-PRONE AREAS

MS Organizers: Antonio Sandoli, Valentina Tomei, Martina Sciomenta, Michele Mirra, Ivan Giongo

MS 24: Monday, 17:00-18:20, VIP Room

C-MS 25: A PATH TOWARDS EARTHQUAKE-RESILIENT COMMUNITIES: NOVEL METHODS FOR ASSESSING RISK AND RELIABILITY

MS Organizers: Aikaterini Kyprioti, Maria Koliou

MS 25: Tuesday, 17:40-19:00, Room D

C-MS 26: NEW PERSPECTIVES IN BASE ISOLATION AND ENERGY DISSIPATION DEVICES

MS Organizers: Eleonora Bruschi, Elena Miceli, Diego Gino, Marco Furinghetti

MS 26 - I: Tuesday, 11:30-13:30, Gamma

MS 26 - II: Tuesday, 14:30-16:30, Gamma

C-MS 27: RESILIENCE, STRUCTURAL HEALTH MONITORING AND MANAGEMENT OF ASSETS AND NETWORKS IN TRANSPORTATION INFRASTRUCTURES

MS Organizers: Gianni Blasi, Marco Civera, Andrea Miano

MS 27 - I: Sunday, 17:45-19:45, Gamma

MS 27 - II: Monday, 9:00-11:00, Gamma

C-MS 28: NEW STRATEGIES IN COMPUTATIONAL MODELLING OF SUSTAINABLE CONSTRUCTIONS

MS Organizers: Marco Simoncelli, Flavio Stochino, Marco Zucca, Pietro Crespi, Enrica Vecchi

MS 28 - I: Monday, 14:30-16:30, Epsilon

MS 28 - II: Monday, 17:00-19:00, Epsilon

C-MS 29: LIFECYCLE CONSEQUENCE ANALYSIS OF BUILDINGS AND INFRASTRUCTURE SUBJECT TO EARTHQUAKES AND OTHER HAZARDS

MS Organizers: Simona Bianchi, Leandro Iannacone, Roberto Gentile

MS 29: Wednesday, 17:40-19:00, VIP Room

C-MS 30: DAMAGE-CONTROL LOW-CARBON BUILDING TECHNOLOGIES FOR ENHANCING SEISMIC RESILIENCE AND ENVIRONMENTAL SUSTAINABILITY

MS Organizers: Jonathan Ciurlanti, Simona Bianchi, Simone D'Amore, Livio Pedone

MS 30 - I: Tuesday, 11:30-13:30, Room A

MS 30 - II: Tuesday, 14:30-16:30, Room A

C-MS 31: ADVANCES AND CHALLENGES IN THE ASSESSMENT OF EXISTING BRIDGE STRUCTURES

MS Organizers: Marco Furinghetti, Tracy Becker, Simone Reale, Alberto Pavese

MS 31 - I: Tuesday, 17:00-19:00, Nafsika B

MS 31 - II: Wednesday, 9:00-11:00, Nafsika B

C-MS 32: GROUND-BORNE NOISE AND VIBRATIONS INDUCED BY RAILWAY TRAFFIC AND CONSTRUCTION ACTIVITIES

MS Organizers: Aires Colaço, Ana Ramos, Pedro Alves Costa

MS 32: Wednesday, 17:00-19:00, Rotisserie

C-MS 33: OPEN CHALLENGES IN SEISMIC RISK ASSESSMENT, MODELING AND STRENGTHENING OF UNREINFORCED MASONRY STRUCTURES

MS Organizers: Omar Alshawwa, Stefania Degli Abbatì, Giacomo Destro Bisol, Linda Giresini, Francesca Taddei, Claudia Casapulla

MS 33 - I: Tuesday, 11:30-13:30, Nefeli B

MS 33 - II: Tuesday, 14:30-16:30, Nefeli B

C-MS 34: ADVANCES IN DETERMINISTIC AND DATA-DRIVEN METHODS FOR DAMAGE AND FRACTURE MODELING

MS Organizers: Panos Pantidis, Mostafa Mobasher, Eleni Chatzi, Konstantinos Agathos

MS 34: Wednesday, 17:00-19:00, Nefeli B

C-MS 35: DYNAMICS OF SOFT AND ULTRA-SOFT NATURAL MATERIALS AND METAMATERIALS: VIBRATION, IMPACT ANALYSIS AND OPTIMIZATION-BASED DESIGN OF THE MICROSTRUCTURE

MS Organizers: Giuseppina Uva, Siro Casolo, Vito Diana, Luis Carlos Martins Da Silva

MS 35: Tuesday, 17:00-19:00, Rotisserie

C-MS 36: ADVANCES IN LOW-FIDELITY MODELING FOR STRUCTURAL DYNAMICS

MS Organizers: Marco Gaetani d'Aragona, Raffaele De Risi, Flavia De Luca, Enrico Spacone

MS 36 - I: Monday, 14:30-16:30, Nefeli A

MS 36 - II: Monday, 17:00-19:00, Nefeli A

C-MS 38: STRUCTURAL HEALTH MONITORING AND DAMAGE DETECTION IN EXISTING STRUCTURES AND INFRASTRUCTURES: ADVANCED TECHNOLOGIES, DATA ANALYSIS, AND DAMAGE THRESHOLDS

MS Organizers: Rocco Ditommaso, Nicla Lamarucciola, Felice Carlo Ponzo

MS 38 - I: Tuesday, 14:30-16:30, Room D

MS 38 - II: Tuesday, 17:00-17:40, Room D

C-MS 39: INNOVATIVE STRATEGIES AND TECHNOLOGIES FOR VIBRATION CONTROL OF BUILDINGS AND INFRASTRUCTURES

MS Organizers: Emanuele Gandelli, Alessia Monaco, Giuseppe Lomiento, Virginio Quaglini

MS 39: Tuesday, 11:30-13:30, Salon des Roses A

C-MS 41: INNOVATIVE APPROACHES FOR SEISMIC ASSESSMENT OF BUILT HERITAGE: FROM CONVENTIONAL TO PIONEERING TECHNIQUES

MS Organizers: Shaghayegh Karimzadeh, Matteo Salvalaggio, Marco Donà, Pinar Usta, Vasco Bernardo

MS 41: Tuesday, 17:00-19:00, Nafsika A

C-MS 42: SEISMIC RISK ASSESSMENT AND MITIGATION OF MASONRY ARCHITECTURAL HERITAGE

MS Organizers: Cristina Cantagallo, Francesca Mattei, Diego Alejandro Talledo, Mattia Zizi

MS 42 - I: Wednesday, 9:00-11:00, Salon des Roses B

MS 42 - II: Wednesday, 14:30-16:30, Salon des Roses B

C-MS 44: ASSESSMENT, RETROFIT AND ASSET MANAGEMENT OF STRUCTURES AND INFRASTRUCTURE SYSTEMS

MS Organizers: Marco Domaneschi, Valentina Villa, Bernardino Chiaia, Stergios A. Mitoulis, Raffaele Cucuzza, Giuseppe Andrea Ferro, Sotiris Argyroudis

MS 44: Tuesday, 15:30-16:30, Epsilon

C-MS 45: SEISMIC RISK ASSESSMENT AND RETROFITTING STRATEGIES FOR STEEL STORAGE RACKS

MS Organizers: Marco Donà, Giammaria Gabbianelli, Gianrocco Mucedero, Dimitris Tsarpalis

MS 45 - I: Tuesday, 15:10-16:30, VIP Room

MS 45 - II: Tuesday, 17:00-19:00, VIP Room

C-MS 46: RECENT ADVANCES IN MULTI-RISK ASSESSMENT OF EXISTING CONSTRUCTIONS HAVING ALSO HISTORICAL VALUE

MS Organizers: Silvia Caprili, Michele D'Amato, Federica Del Carlo, Roselena Sulla

MS 46 - I: Monday, 9:00-11:00, Rotisserie

MS 46 - II: Monday, 14:30-16:30, Rotisserie

C-MS 48: DEVELOPING ACCURATE NONLINEAR NUMERICAL MODELS BASED ON EXPERIMENTAL RESULTS

MS Organizers: Francesca Barbagallo, Marco Terrenzi, Mariano Di Domenico, Cristina Cantagallo

MS 48 - I: Tuesday, 17:00-19:00, Gamma

MS 48 - II: Wednesday, 9:00-9:40, Gamma

C-MS 49: ADVANCEMENTS IN SEISMIC VULNERABILITY ASSESSMENT: TOWARD AN INTEGRATED DISASTER RISK GOVERNANCE

MS Organizers: Maria Zucconi, Carlo Del Gaudio, Barbara Ferracuti, Gerardo Verderame

MS 49: Monday, 17:00-19:00, Room B

C-MS 50: MOVING LOADS AND INTERACTION PROBLEMS IN BRIDGE DYNAMICS

MS Organizers: Pedro Museros, Andreas Andersson, Pedro Montenegro, Geert Lombaert

MS 50: Sunday, 17:45-19:45, Alpha

C-MS 51: DYNAMIC RESPONSE OF ENGINEERING STRUCTURES: EXPERIMENTAL TECHNIQUES, MATHEMATICAL MODELS AND DESIGN METHODS

MS Organizers: Mehrdad Aghagholizadeh, Konstantinos Kalfas, Stefania Lo Feudo, Nicolò Vaiana

MS 51 - I: Sunday, 17:45-19:45, Room B

MS 51 - II: Monday, 9:00-11:00, Room B

C-MS 53: SUSTAINABLE APPROACHES IN OPTIMUM DESIGN OF STRUCTURAL SYSTEMS

MS Organizers: Raffaele Cucuzza, Majid Movahedi Rad, Marco Domaneschi, Giuseppe Carlo Marano, Charis Gantes, Nikos Lagaros

MS 53: Sunday, 17:45-19:45, Salon des Roses B

C-MS 54: NOVEL TRENDS AND APPLICATIONS OF ISOLATION AND DISSIPATION DEVICES FOR IMPROVED RESILIENCE OF STRUCTURES TO EARTHQUAKES

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

MS 54 - I: Wednesday, 9:00-11:00, Rotisserie

MS 54 - II: Wednesday, 14:30-16:30, Rotisserie

C-MS 55: OPTIMIZATION-DRIVEN DESIGN AND RETROFIT STRATEGIES FOR ENHANCING SUSTAINABILITY IN STRUCTURAL SYSTEMS

MS Organizers: Cristoforo Demartino, Carlotta Contiguglia, Vittoria Borghese, Antonio P. Sberna, Nikola Tošić

MS 55 - I: Wednesday, 9:00-11:00, Alpha

MS 55 - II: Wednesday, 14:30-16:30, Alpha

MS 55 - III: Wednesday, 17:00-19:00, Alpha

C-MS 56: NUMERICAL MODELLING AND ANALYSIS OF STRUCTURES AND INFRASTRUCTURES USING DISCRETE ELEMENT APPROACHES

MS Organizers: Nicola Scattarreggia, Daniele Malomo, Bora Pulatsu, Matthew DeJong, Ricardo Monteiro, Nicolò Damiani

MS 56 - I: Tuesday, 11:30-13:30, Epsilon

MS 56 - II: Tuesday, 14:30-15:30, Epsilon

C-MS 57: ADVANCEMENTS IN OPENSEES APPLICATIONS FOR EARTHQUAKE ENGINEERING

MS Organizers: Fabio Di Trapani, Igor Tomić, Massimo Petracca, Cristoforo Demartino

MS 57 - I: Tuesday, 11:30-13:30, Alpha

MS 57 - II: Tuesday, 14:30-16:30, Alpha

MS 57 - III: Tuesday, 17:00-17:40, Alpha

C-MS 59: SEISMIC ASSESSMENT AND RETROFITTING OF EXISTING STEEL STRUCTURES: CURRENT PRACTICE AND FUTURE CHALLENGES

MS Organizers: Luigi Di Sarno, Fabio Freddi, Mario D'Aniello

MS 59 - I: Wednesday, 9:00-11:00, VIP Room

MS 59 - II: Wednesday, 17:00-17:40, VIP Room

C-MS 60: ADVANCED DISSIPATIVE DEVICES FOR EARTHQUAKE RESISTANT STEEL STRUCTURES

MS Organizers: Paolo Zampieri, Federico Gusella, Riccardo Piazzon, Kara Peterman

MS 60: Tuesday, 15:30-16:30, Room B

C-MS 63: ROCKING SYSTEMS IN STRUCTURAL ENGINEERING: FROM THE BEHAVIOR OF ROCKING BLOCKS AND ASSEMBLIES TO THE SEISMIC DESIGN AND PERFORMANCE OF MODERN ROCKING AND SELF-CENTERING SYSTEMS

MS Organizers: Andrea Belleri, Simone Labò, Michele Bianchessi, Michelle Gualdi

MS 63: Wednesday, 17:00-19:00, Gamma

C-MS 65: PARAMETRIC STRUCTURAL DESIGN: OPTIMIZING MATERIALS, ENVIRONMENTAL IMPACT, AND COST

MS Organizers: Laura Sardone, Giuseppe Carlo Marano, Giulia Angelucci, Fabrizio Mollaioli

MS 65: Monday, 18:20-19:40, VIP Room

C-MS 66: SEISMIC RESPONSE AND CAPACITY EVALUATION OF NONSTRUCTURAL ELEMENTS THROUGH EXPERIMENTAL, ANALYTICAL, AND NUMERICAL METHODS

MS Organizers: Roberto Tartaglia, Alessandra de Angelis, Alessia Campiche, Danilo D'Angela

MS 66 - I: Tuesday, 11:30-13:30, Rotisserie

MS 66 - II: Tuesday, 14:30-16:30, Rotisserie

C-MS 67: GLOBAL AND LOCAL BEHAVIOUR OF STEEL STRUCTURES UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS

MS Organizers: Roberto Tartaglia, Alessandro Pisapia, Aldo Milone

MS 67 - I: Sunday, 17:45-19:45, Nafsika A

MS 67 - II: Monday, 9:00-11:00, Nafsika A

MS 67 - III: Monday, 14:30-16:30, Nafsika A

C-MS 68: INTELLIGENT AND SOFT COMPUTING METHODS IN STRUCTURAL AND EARTHQUAKE ENGINEERING

MS Organizers: Vagelis Plevris, Afaq Ahmad, Mohamed El Amine Ben Seghier

MS 68: Monday, 18:00-19:00, Alpha

C-MS 69: INNOVATIONS IN GROUND MOTION SELECTION AND SCALING TECHNIQUES FOR STRUCTURAL ENGINEERING APPLICATIONS

MS Organizers: Shaghayegh Karimzadeh, Manolis Georgioudakis, Milad Roohi, Michalis Fragiadakis, Paulo B. Lourenço

MS 69: Monday, 17:00-19:00, Room C

C-MS 70: BEHAVIOUR OF STRUCTURES AND INFRASTRUCTURES WITH DEGRADED/CORRODED MEMBERS AND BEARINGS: EXPERIMENTAL CAMPAIGNS AND NUMERICAL APPLICATIONS

MS Organizers: Giuseppe Santarsiero, Vincenzo Manfredi, Angelo Masi, Valentina Picciano, Mayank Mishra

MS 70: Wednesday, 9:40-11:00, Gamma

C-MS 71: ARTIFICIAL INTELLIGENCE TECHNIQUES IN SEISMIC ENGINEERING

MS Organizers: Gianluca Quinci, Fabrizio Paolacci, Michalis Fragiadakis

MS 71: Sunday, 17:45-19:45, Room A

C-MS 72: DIGITAL TOOLS AND INNOVATIVE MONITORING SYSTEMS FOR BUILT CULTURAL HERITAGE CONSERVATION

MS Organizers: Armando La Scala, Maria Francesca Sabbà, Marco Francesco Funari, Nicola Ivan Giannoccaro, Dora Foti

MS 72: Tuesday, 17:00-19:00, Room A

C-MS 73: ADVANCES AND CHALLENGES IN DYNAMIC SOIL-FOUNDATION-STRUCTURE INTERACTION

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

MS 73 - I: Tuesday, 11:30-13:30, Nafsika A

MS 73 - II: Tuesday, 14:30-16:30, Nafsika A

C-MS 75: SEISMIC ASSESSMENT AND RETROFIT OF CULTURAL HERITAGE AND HISTORIC STRUCTURES

MS Organizer: Constantine C. Spyrakos

MS 75: Sunday, 18:45-19:45, Epsilon

C-MS 76: SEISMIC ISOLATION AND ENERGY DISSIPATION – RESPONSE CONTROL SYSTEMS

MS Organizer: Constantine C. Spyrakos

MS 76: Sunday, 17:45-18:45, Epsilon

C-MS 77: ADVANCEMENTS OF SIGNAL AND DATA PROCESSING METHODS FOR STRUCTURAL HEALTH MONITORING

MS Organizers: Pierre Argoul, Michalis Fragiadakis

MS 77: Tuesday, 14:30-16:30, Room C

Compdyn Thematic Sessions

C-TS 2: ALGORITHMS FOR STRUCTURAL HEALTH MONITORING

TS 2: Tuesday, 17:00-19:00, Room C

C-TS 3: BRIDGE DYNAMICS

TS 3: Monday, 14:30-16:30, Room B

C-TS 5: DYNAMICS OF CONCRETE AND MASONRY STRUCTURES

TS 5 - I: Sunday, 17:45-19:45, Room C

TS 5 - II: Monday, 9:00-11:00, Room C

C-TS 8: DYNAMICS OF STEEL STRUCTURES

TS 8: Monday, 17:00-19:00, Nafsika A

C-TS 9: GEOTECHNICAL EARTHQUAKE ENGINEERING

TS 9: Monday, 17:00-19:00, Room A

C-TS 10: IMPACT DYNAMICS

TS 10: Tuesday, 11:30-13:30, Room C

C-TS 13: NONLINEAR DYNAMICS

TS 13: Sunday, 17:45-19:45, Delphi

C-TS 14: NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS

TS 14 - I: Sunday, 17:45-19:45, Nafsika B

TS 14 - II: Monday, 9:00-11:00, Nafsika B

TS 14 - III: Monday, 14:30-16:30, Nafsika B

C-TS 15: OPTIMUM DESIGN AND CONTROL IN STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING

TS 15 - I: Tuesday, 17:00-19:00, Room B

TS 15 - II: Wednesday, 9:00-11:00, Room B

TS 15 - III: Wednesday, 17:00-19:00, Room B

C-TS 16: PERFORMANCE-BASED EARTHQUAKE ENGINEERING

TS 16 - I: Monday, 14:30-16:30, Nefeli B

TS 16 - II: Monday, 17:00-19:00, Nefeli B

C-TS 18: REPAIR AND RETROFIT OF STRUCTURES

TS 18 - I: Wednesday, 9:00-11:00, Room A

TS 18 - II: Wednesday, 17:00-19:00, Room A

C-TS 20: SEISMIC RISK AND RELIABILITY ANALYSIS

TS 20 - I: Monday, 17:00-19:00, Athena

TS 20 - II: Tuesday, 11:30-13:30, Athena

C-TS 23: SOIL-STRUCTURE INTERACTION & SOIL DYNAMICS

TS 23 - I:	Wednesday,	9:00-11:00,	Room C
TS 23 - II:	Wednesday,	17:00-19:00,	Room C

C-TS 26: STEEL STRUCTURES

TS 26 - I:	Wednesday,	9:00-11:00,	Room D
TS 26 - II:	Wednesday,	17:00-18:00,	Room D

UNCECOMP 2025

Uncecomp Minisymposia

U-MS 1: UNCERTAINTY QUANTIFICATION, RELIABILITY, AND SENSITIVITY ANALYSIS UNDER LIMITED DATA

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

MS 1 - I:	Sunday,	17:45-19:45,	Salon des Roses A
MS 1 - II:	Monday,	9:00-11:00,	Salon des Roses A
MS 1 - III:	Monday,	14:30-16:30,	Salon des Roses A
MS 1 - IV:	Monday,	17:00-19:00,	Salon des Roses A

U-MS 2: PHYSICS-ENHANCED MACHINE LEARNING IN ENGINEERING

MS Organizers: Alice Cicirello, Elizabeth Cross, Eleni Chatzi

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

U-MS 3: METHODOLOGICAL DEVELOPMENTS AND APPLICATIONS OF GLOBAL SENSITIVITY ANALYSIS IN SCIENCE AND ENGINEERING

MS Organizers: Gian Marco Melito, Sebastian Brandstätter, Friederike Schäfer, Wouter Huberts

MS 3:	Monday,	17:00-19:00,	Nafsika B
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U-MS 4: MODEL REDUCTION FOR UNCERTAINTY QUANTIFICATION

MS Organizers: Iason Papaioannou, Dimitris Giovanis, Jakob Scheffels, Elizabeth Qian

MS 4 - I:	Tuesday,	11:30-13:30,	Nafsika B
MS 4 - II:	Tuesday,	14:30-16:30,	Nafsika B

U-MS 5: UNCERTAINTY PROPAGATION AND PROBABILISTIC PERFORMANCE ASSESSMENT IN ENGINEERING STRUCTURES

MS Organizers: Meng-Ze Lyu, De-Cheng Feng, Jian-Bing Chen, Michael Beer

MS 5:	Monday,	14:30-16:30,	Room C
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U-MS 6: UNCERTAINTY QUANTIFICATION AND SCIENTIFIC MACHINE LEARNING FOR RELIABLE DATA-DRIVEN MODELING AND SIMULATION IN SCIENCE AND ENGINEERING

MS Organizers: Dimitris Giovanis, Bojana Rosić, Dimitrios Loukrezis, Miroslav Vořechovský

MS 6:	Sunday,	17:45-19:45,	Rotisserie
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U-MS 7: SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION: NEW TRENDS

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

MS 7 - I:	Monday,	9:00-11:00,	Delphi
MS 7 - II:	Monday,	14:30-16:30,	Delphi
MS 7 - III:	Monday,	17:00-19:00,	Delphi
MS 7 - IV:	Tuesday,	11:30-13:30,	Delphi
MS 7 - IV:	Wednesday,	14:30-16:30,	Gamma

U-MS 8: UNCERTAINTY QUANTIFICATION IN VIBRATION BASED MONITORING AND STRUCTURAL DYNAMICS SIMULATIONS

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

MS 8: Monday, 17:00-19:00, Rotisserie

U-MS 9: SOFTWARE FOR UNCERTAINTY QUANTIFICATION

MS Organizers: Matteo Broggi, Stefano Marelli, Edoardo Patelli, Dirk Pflüger

MS 9 - I: Tuesday, 14:30-16:30, Delphi

MS 9 - II: Tuesday, 17:00-19:00, Delphi

U-MS 12: MULTISCALE AND MULTIPHYSICS MODELLING FOR COMPLEX MATERIALS (MMCM 21)

MS Organizers: Marco Pingaro, Patrizia Trovalusci, George Stefanou, Greta Ongaro, Marco Colatosti

MS 12 - I: Sunday, 17:45-19:45, Athena

MS 12 - II: Monday, 9:00-11:00, Athena

MS 12 - III: Monday, 14:30-16:30, Athena

U-MS 13: MONTE CARLO SAMPLING FOR STOCHASTIC SOLVERS: ADVANCES IN UNCERTAINTY QUANTIFICATION

MS Organizers: Elisa Iacomini, Emil Løvbak

MS 13 - I: Wednesday, 9:00-11:00, Nafsika A

MS 13 - II: Wednesday, 14:30-16:30, Nafsika A

U-MS 14: OPTIMIZATION UNDER UNCERTAINTY

MS Organizers: Oindrila Kanjilal, Iason Papaioannou, Daniel Straub, Marcos Valdebenito

MS 14 - I: Wednesday, 9:00-11:00, Epsilon

MS 14 - II: Wednesday, 17:00-19:00, Epsilon

U-MS 15: AI-ENHANCED MULTISCALE AND MULTIPHYSICS MODELING FOR ROBUST UNCERTAINTY QUANTIFICATION

MS Organizers: M. Giselle Fernández-Godino, Gowri Srinivasan, Joseph Bakarji

MS 15: Monday, 17:00-19:00, Room D

U-MS 16: MULTI-FIDELITY INFORMATION MANAGEMENT TO MITIGATE HIGH-FIDELITY DATA SCARCITY IN COMPUTATIONAL SCIENCE AND ENGINEERING

MS Organizers: Gianluca Geraci, Daniele E. Schiavazzi

MS 16 - I: Monday, 9:00-11:00, Room A

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

U-MS 17: BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE AND ENGINEERING

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

MS 17 - I: Tuesday, 14:30-16:30, Athena

MS 17 - II: Tuesday, 17:00-19:00, Athena

MS 17 - III: Wednesday, 9:00-11:00, Athena

MS 17 - IV: Wednesday, 14:30-16:30, Athena

U-MS 18: UNCERTAINTY QUANTIFICATION IN THE ERA OF SELF-SUPERVISED LEARNING AND NEURAL OPERATORS

MS Organizers: Ling Guo, Yannis Pantazis, George Em Karniadakis

MS 18 - I: Sunday, 17:45-19:45, Nefeli B

MS 18 - II: Monday, 9:00-11:00, Nefeli B

U-MS 19: UNCERTAINTY QUANTIFICATION AND MACHINE LEARNING APPLICATIONS IN SCIENCES AND ENGINEERING

MS Organizers: Ambrosios Antonios Savvides, Denise-Penelope N. Kontoni

MS 19 - I: Sunday, 17:45-19:45, Room D

MS 19 - II: Monday, 9:00-11:00, Room D

U-MS 20: ADVANCING SCIENTIFIC DISCOVERY WITH SCIML: NEURAL OPERATORS, GENERATIVE MODELING, AND PHYSICS-INFORMED TECHNIQUES

MS Organizers: Daniele Venturi, Panos Stinis, Paris Perdikaris

MS 20: Tuesday, 17:00-19:00, Nefeli B

Uncecomp Thematic Sessions

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

TS 16: Tuesday, 17:40-19:00, Alpha

U-TS 17: UNCERTAINTY QUANTIFICATION

TS 17 - I: Tuesday, 14:30-16:30, Salon des Roses A

TS 17 - II: Tuesday, 17:00-19:00, Salon des Roses A

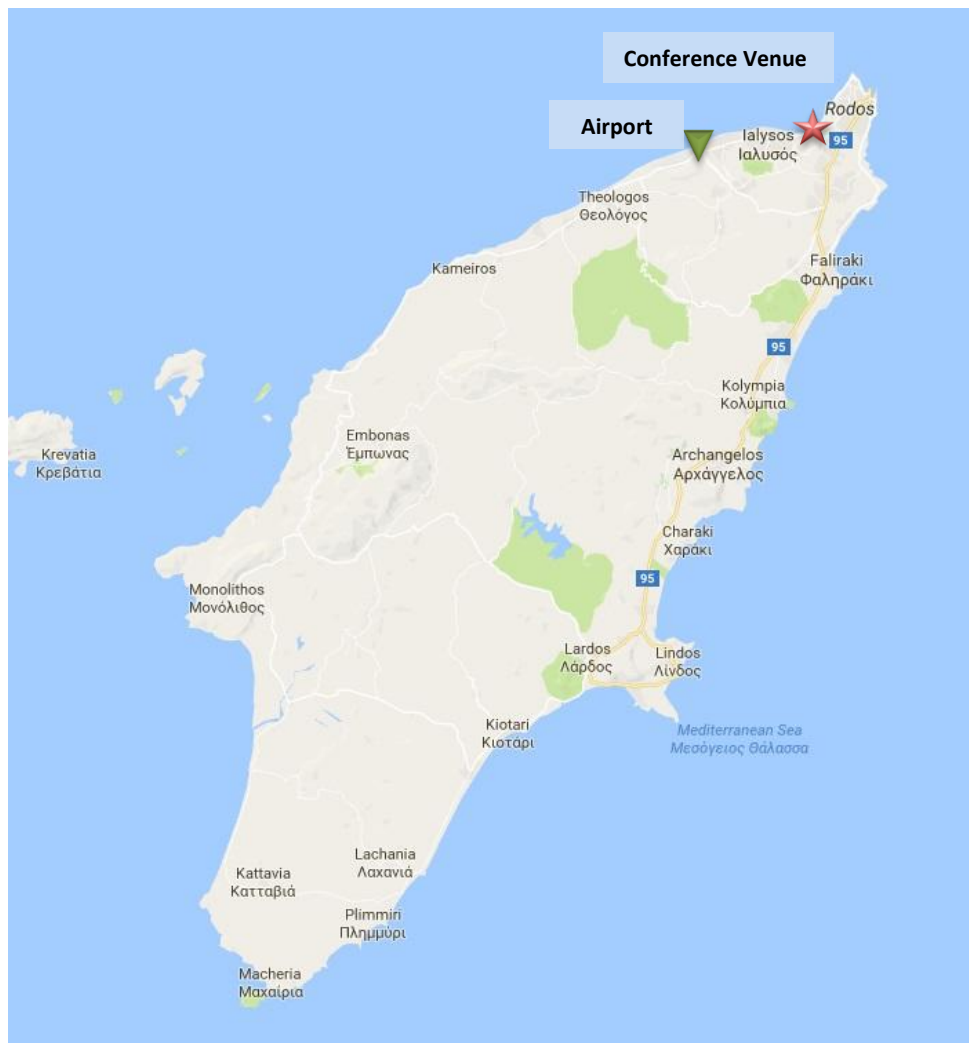
TS 17 - III: Wednesday, 9:00-11:00, Salon des Roses A

TS 17 - IV: Wednesday, 17:00-19:00, Salon des Roses A

Conference Venue

The Conference will be held at the Rodos Palace's Convention Center in Rhodes Island. The Rodos Palace International Convention Center is one of the largest conference centers in the Mediterranean region. More than 2.500 conferences and numerous exhibitions have been held on its premises.

The Island of Rhodes



Rhodes is the largest island and the capital of the Dodecanese Island complex in the South-Eastern Aegean Sea. Thanks to its strategic position, the Island has been important since ancient times - it is located at the crossroads of two major sea routes of the Mediterranean between the Aegean Sea and the coast of the Middle East, as well as Cyprus and Egypt.

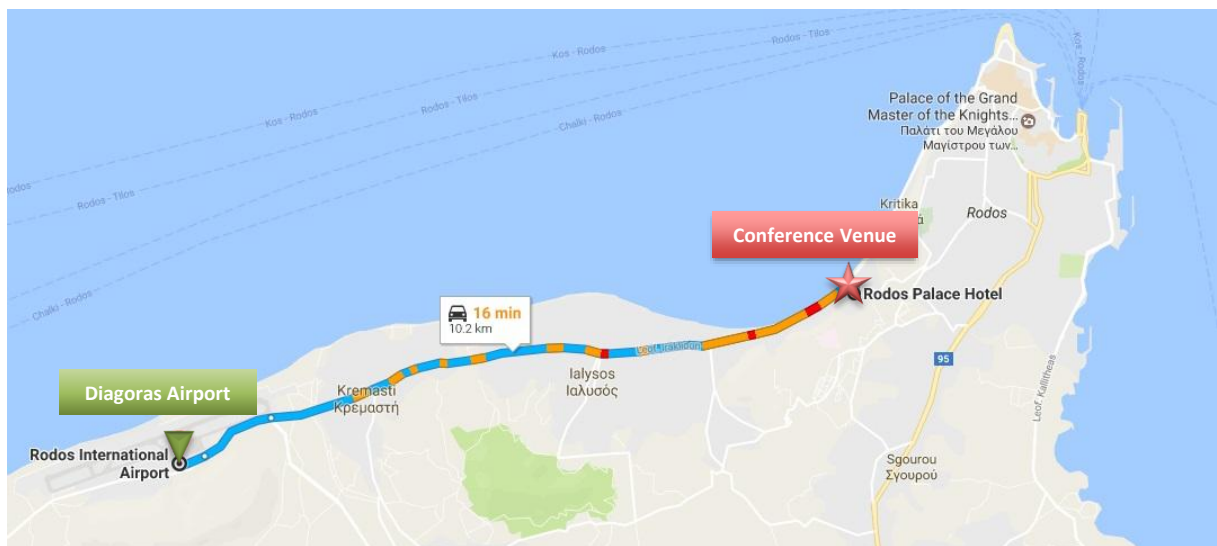
Rhodes, with its bright green hills, rich valleys and uninterrupted line of beaches is a blessed place. One of the landmarks of Rhodes is the Old Town, one of the largest medieval towns in Europe. The Palace of the Grand Master, as well as the Road of the Knights and the Castle of the Knights are certainly the highlights of the Old Town. In 1988 the Medieval City of Rhodes was listed as a UNESCO World Heritage site.

Transportation

Transfer from and to the Airport: “Diagoras” International Airport of Rhodes is located 14 km to the southern – west side of the town of Rhodes, near the village Paradisi. The airport is well connected with other major Greek cities and islands as well as with major European capitals and cities via charter flights, especially during the summer months when the tourism traffic increases.

Rhodes Airport: (+30) 22410 88700, 22410 82302

The route from the airport to the Conference venue by taxi takes approximately 15 minutes, while the average cost of the route is 25 €.



Moving around Rhodes

Taxis, cars, motorbikes and bicycles are available for rent.

By Bike

Galaxy Rent a bike: +30 2241033135

Alfa Rent a bike: +30 2241091416

Opposite to Rodos Palace.

By Bus

Local Bus service is available from the airport or the harbor.

Intercity Busses (KTEL): + 30 22410 27706

By Taxi

Taxi Telephone Center: +30 22410 69800, 22410 69600

Emergency Telephones

Police: 100

Fire brigade: 199

National Line of first response: 166

Rhodes Hospital: + 30 22410 80100 - 80000

Conference Information

Registration and check in

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

Identification Badge

Participants are required to always wear badges while in the Conference area.

Secretariat Timetable

Sunday June 15,	13:30 to 20:00
Monday June 16,	8:00 to 18:30
Tuesday June 17,	8:30 to 18:30
Wednesday June 18,	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.

We strongly encourage you to have a backup of your presentation in a USB storage device in the event of your laptop having a technical problem or is incompatible with the LCD projector.

Internet Access

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

Lunch Options

The participants may have lunch, buffet style, at preferential rates in Ambrosia restaurant 30€ person and in Gallery restaurant 25€ person, or a la carte at the other cafès and restaurants of the venue hotel.

Social Events

Welcome Reception:

Sunday **June 15**, (20:00 to 21:00), Rodos Palace 12 Nissia (Lagoon area)

Banquet Party:

Tuesday **June 17** (20:30 to 23:30), Rodos Palace Dome

Accompanying Persons' Programme:

The Accompanying Persons' Programme includes the Welcome Reception and the Banquet Party.

Tours & Excursions:

Reservations for the excursions below are made directly by the designated tour agency **Kapco Travel** (www.kapco.gr). Tel: +30 22410 78756-7, Email: kapco@otenet.gr

GUIDED TOUR OF MEDIEVAL TOWN

Duration: 9:00-16:00

Cost per person: 42 €

Transportation by coach, professional guide.

Optional

Family-style Menu 35,00 €

Entrance fees to Grand Master Palace 20,00 €



Make a deep dive into the ancient history in the Medieval Town of Rhodes, which is a Unesco World Heritage Site with its Archaeological Museum, The Street of the Knights, The Grand Master Palace and The Ruins of Saint John Cathedral. Get also the feeling of the New Town of Rhodes, full of life with shops, tavernas and cafeterias. Guests will have the opportunity to taste some local products. As the Medieval Town is a Unesco World Heritage, vehicles are not allowed. If you choose this option, the bus will leave you at the closest gate and you will continue walking.

GUIDED TOUR OF LINDOS & APOLLONAS VILLAGE, FOR WINE TASTING AND COOKING CLASS

Duration: 9:00-17:00

Cost per person: 48 €

Transportation by coach, professional guide.

Optional

Family-style Menu 40,00 €

Entrance fees in Lindos acropolis 12,00 €



First stop, the town of Lindos is for most visitors the most impressive archaeological site on the island of Rhodes. The view is astonishing. Over the calm waters of a wide, rocky bay, white flat-roofed houses rise up a slope from a golden, shallow, sandy beach, forming a light belt around the north side of the castle hill. Explore the Greek nature and wonderful colours of the west coast of Rhodes and have the occasion to taste local products. Guests will have stops in several locations for pictures and flavour tastes.

In Lindos vehicles are not allowed. If you choose this option, the bus will take you at the main car park and you will continue walking.

RALLY 4X4 TO NORTHERN RHODES

Duration: 9:00-16:00

Cost per person: 79 €

Organization of the activity including rental of Suzuki Jimnys, professional staff, fuel at current rates, public liability insurance.

Optional

Local products tasting 13,00 €

Family-style Lunch 35,00 €



Driving through mountains, passing small villages, going through a riverbed, enjoy nature, taste original products and have lots of fun. Experience Rhodes off the beaten tracks. The perfect adventure for all ages. The friendly and unrushed atmosphere allows all guests to enjoy all aspects of Rhodes and its inhabitants. On this tour we use Suzuki Jimnys which the customers are allowed to drive themselves. Customers who would like to drive have to have their driving license for at least 2 years and need to be at least 21 years old. You have to have your license with you.

GUIDED TOUR OF SYMI ISLAND AND PANORMITIS MONASTERY

Duration: 9:00-17:00

Cost per person: 68 €

Transportation by coach, professional guide, Ferry ticket Rhodes - Panormitis - Symi - Rhodes.

Optional

Set Lunch 3-course Fish Menu in Symi 43,00 €



Sail on a ferry boat to the neighbour island Symi. This full day excursion goes to the beautiful island of Symi, famous for the monastery of Panormitis and the more than 365 churches and chapels of the island. The beauty of this island will forever remain in your memory.

TOUR OF BUTTERFLIES AND CHALKI ISLAND

Duration: 9:00-17:00

Cost per person: 60 €

*Transportation by coach, professional guide,
Ferry ticket Kamiros skala - Chalki island - Kamiros skala.*

Entrance fees to Butterflies valley 6,00 €

Optional

Set Lunch 3-course menu in Chalki 36,00 €



Pick up from your hotel and before arriving to the ferry for Chalki, we will make a stop at the Valley of the Butterflies, which is a habitat with dense flora, breathtaking natural beauty, harmonious structures of bridges with the environment, paved paths, ponds, small inexhaustible waterfalls, serene atmosphere and a unique experience for the visitors. We then lead to the harbour of Kamiros Skala to the ferry. This boat trip takes you to the small paradise Chalki. Time has not touched this small fishing island, it's the ideal place for those who want to avoid crowded and cosmopolitan tourist resorts and seek a quiet place as there are not many cars, not many shops, no bars, no disco and no water sports. The small (400m) port is very beautiful with pretty colorful houses, fishing boats, small coffee shops and few fish taverns. You will have plenty of time to walk around, to swim in the crystal turquoise water or to enjoy a delicious lunch with fresh fish.

OPENING

Sunday
16:00 -16:15

Delphi

PLENARY LECTURES

Sunday
16:15 - 17:35

Delphi

Chair: Roger Ghanem

U 21681 TENSOR RANDOM FIELDS FOR STOCHASTIC MECHANICS
Martin Ostoja-Starzewski

C 27326 A NOVEL METHOD OF FEM MODELING AND SOLUTION WITHOUT ASSEMBLY: CAN IT BE POSSIBLE? YES, IT IS POSSIBLE!
K. C. Park, S. J. Shin, S. H. Kang, M. F. Baqir, J. H. Han, S. C. Lee, Y. H. Park, H. J. Kim, J. A. Gonzalez, C. A. Felippa, K. K. Maute

COMPDYN TS 13
NONLINEAR DYNAMICS

Sunday
17:45 - 19:45

Delphi

Chair: Terje Haukaas, Marco Terrenzi

C 24498 **KEYNOTE:** READING RESPONSE SENSITIVITIES FROM INELASTIC DYNAMIC ANALYSIS
Terje Haukaas

C 24954 NONLINEAR SEISMIC ANALYSIS OF RC STRUCTURES: INFLUENCE OF MATERIAL PROPERTIES ON HYSTERETIC DAMPING
Marco Terrenzi, Enrico Spacone

C 24831 LINEAR AND NONLINEAR FLEXURAL VIBRATION BEHAVIOR OF BIMODULAR BEAMS WITH SYMMETRIC AND ASYMMETRIC CROSS-SECTIONS
Galeb El Chabaan, Rudolf Heuer, Christoph Unterweger

C 25694 NONLINEAR VIBRATIONS OF THIN SQUARE PLATES WITH INITIAL GEOMETRIC IMPERFECTIONS SOLVED USING AN ASYMPTOTIC NUMERICAL METHOD
Lahcen Benchouaf, El Hassan Boutyour

C 25746 AN ONTOLOGY OF NONLINEAR DYNAMICS
Josie McCulloch, Keith Worden

C 26053 LEARNING NONLINEAR DYNAMICAL SYSTEMS WITH RANK REDUCTION AUTOENCODERS
Jad Mounayer, Sebastian Rodriguez, Chady Ghnatios, Francisco Chinesta

**UNCECOMP MS 1 - I
UNCERTAINTY QUANTIFICATION, RELIABILITY, AND
SENSITIVITY ANALYSIS UNDER LIMITED DATA**

Sunday
17:45 - 19:45

Salon des Roses A

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

Chair: *George Stefanou*

U 21408 **KEYNOTE:** A POSSIBILISTIC APPROACH TO UNCERTAINTY QUANTIFICATION IN QUANTUM ALGORITHMS
*Jan Schneider, Tom Könecke, **Michael Hanss***

U 21063 IMPROVING THE PERFORMANCE OF STEIN VARIATIONAL INFERENCE OF PHYSICAL NEURAL NETWORK MODELS THROUGH SPARSIFICATION
Reese Jones, Govinda Anantha Padmanabha, Cosmin Safta, Nikolaos Bouklas

U 21182 FORWARD UNCERTAINTY PROPAGATION FOR FINITE ELEMENT MODELS WITH NON-GAUSSIAN PARAMETERS
Renan Barros, Iuri Rocha, Maria Nogal, Oswaldo Morales-Napoles

U 21386 SENSITIVITY BASED UNCERTAINTY ANALYSIS IN FILAMENT-WOUND COMPOSITE SIMULATION
Tibe Van Remoortel, Ben Van Bavel, Dirk Vandepitte, David Moens

U 21468 SURROGATE-ASSISTED WIND FRAGILITY ANALYSIS OF HIGH-RISE BUILDINGS SUBJECTED TO DOWNBURST-WINDS
Luis Costa, Felipe Macedo, Henrique Kroetz, André Beck, Stefano Marelli, Bruno Sudret

**COMPDYN MS 53
SUSTAINABLE APPROACHES IN OPTIMUM DESIGN OF
STRUCTURAL SYSTEMS**

Sunday
17:45 - 19:45

Salon des Roses B

MS Organizers: *Raffaele Cucuzza, Majid Movahedi Rad, Marco Domaneschi, Giuseppe Carlo Marano, Charis Gantes, Nikos Lagaros*

Chair: *Raffaele Cucuzza*

C 25453 TWO-STAGE OPTIMIZATION FRAMEWORK FOR THE OPTIMAL DESIGN OF TIMBER EXOSKELETONS
Raffaele Cucuzza, Marco Domaneschi, Kang Gao, Yang Jun, Giuseppe Carlo Marano

C 25046 ELASTO-PLASTIC TOPOLOGY OPTIMIZATION UNDER CYCLIC LOADING FOR EFFICIENT STRUCTURAL DESIGN
Majid Movahedi Rad, Muayad Habashneh, Gábor Csaba Soóki-Tóth, Somfai Attila

C 25455 CLUSTERING-BASED ANALYSIS OF GROUND MOTION DIRECTIONALITY: PRELIMINARY INTENSITY MEASURES AND HYPOCENTRAL CORRELATIONS IN THE ITALO-BALKAN PENINSULA
Santiago Londono Lopez, Raffaele Cucuzza, Marco Domaneschi, Fabrizio Mollaioli, Rita Greco, Giuseppe Carlo Marano

C 25458 PERFORMANCE-BASED OPTIMIZATION FRAMEWORK CONSIDERING SHEAR WALL HEIGHT IMPACT ON STRUCTURAL BEHAVIOR OF HIGH-RISE BUILDINGS
Jana Olivo, Raffaele Cucuzza, Marco Domaneschi, Kang Gao, Giuseppe Carlo Marano

C 25045 FATIGUE TOPOLOGY OPTIMIZATION UNDER CYCLIC LOADING FOR INNOVATIVE STRUCTURAL DESIGN
Muayad Habashneh, Majid Movahedi Rad, Gábor Erika, Géza Herczeg

C 25059 GENETIC ALGORITHM-BASED OPTIMIZATION OF BOLTED T-STUB CONNECTION UNDER DYNAMIC LOADING USING FINITE ELEMENT ANALYSIS
Peter Grubits, Ákos Wolf, Majid Mohavedi Rad

UNCECOMP MS 12 - I
MULTISCALE AND MULTIPHYSICS MODELLING FOR COMPLEX
MATERIALS (MMCM 21)

Sunday
17:45 - 19:45

Athena

MS Organizers: *Marco Pingaro, Patrizia Trovalusci, George Stefanou, Greta Ongaro, Marco Colatosti*

Chair: *Patrizia Trovalusci*

U 21479 KEYNOTE: SECTIONAL HOMOGENIZATION WITH A GENERAL NONLINEAR CONSTITUTIVE LAW FOR CORRUGATED BOARD ANALYSIS

Tomasz Garbowski, Anna Szymczak-Graczyk, Aram Cornaggia

U 21551 A COUPLED VIRTUAL ELEMENT-INTERFACE MODEL FOR FRACTURE BEHAVIOUR OF CERAMIC MATRIX COMPOSITE (CMC)

Cristina Gatta, Marco Pingaro, Daniela Addessi, Patrizia Trovalusci

U 21447 THE ROLE OF SKEW-SYMMETRIC STRAIN AND STRESS IN THE HOMOGENIZED RESPONSE OF CLASSICAL AND MICROPOLAR CONTINUA

Patrizia Trovalusci, Maria Laura De Bellis, Greta Ongaro

U 21440 EFFICIENT NUMERICAL FRAMEWORK FOR SPATIAL INTEGRALS IN PERIDYNAMICS USING A HYBRID DISCRETIZATION SCHEME

Arman Shojaei

U 21109 A MACHINE LEARNING APPROACH FOR A2-POINT STATISTICAL HOMOGENIZATION METHOD

Luzie Schmollack, Sandra Klinge

U 21013 CFD-FEA COUPLED FIRE-INDUCED SAFETY ASSESSMENT OF STEEL STRUCTURES WITH VIRTUAL MODELLING TECHNIQUE

Zhiyi Shi, Yuan Feng, Wei Gao

COMPDYN MS 67 - I
GLOBAL AND LOCAL BEHAVIOUR OF STEEL STRUCTURES UNDER
SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS

Sunday
17:45 - 19:45

Nafsika A

MS Organizers: *Roberto Tartaglia, Alessandro Pisapia, Aldo Milone*

Chair: *Roberto Tartaglia*

C 25396 SEISMIC PERFORMANCE OF NEW EUROCODE 8-COMPLIANT STEEL ECCENTRICALLY BRACED FRAMES

Aldo Milone

C 25280 SEISMIC ASSESSMENT OF A STEEL BUILDING DESIGNED ACCORDING TO EUROPEAN, JAPANESE AND ADVANCED SEISMIC DESIGN METHODOLOGIES

Maria Maglio, Rosario Montuori, Elide Nastri, Vincenzo Piluso, Atsushi Sato

C 25287 PRELIMINARY OPENSEES MODELING TO PREDICT CYCLIC BEHAVIOUR OF ALUMINUM SHS BEAMS

Maria Maglio, Elide Nastri, Alessandro Pisapia, Francesco Pisciotto, Evangelia Georgantzia

C 25122 BEHAVIOUR OF STEEL 2D MOMENT RESISTING FRAMES EQUIPPED WITH INNOVATIVE FRICTION CONNECTIONS UNDER SEISMIC AND COLUMN LOSS SCENARIOS

Roberto Carlevaris

C 25242 SEISMIC BEHAVIOUR OF STEEL CBFs DESIGNED IN ACCORDANCE WITH EN 1998-1(2005) AND prEN 1998-1-2(2024)

Massimino Gnazzo

**COMPDYN TS 14 - I
NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS**

Sunday
17:45 - 19:45

Nafsika B

Chair: *Michalis Fragiadakis*

C 25801 **KEYNOTE:** TIME INTEGRATION ALGORITHM FOR THE ANALYSIS OF VISCOELASTIC DAMPED STRUCTURES CONSIDERING FRACTIONAL DERIVATIVE CONSTITUTIVE MODELS
Jean-François Deü, Lucie Rouleau

C 24516 FINITE ELEMENT ANALYSIS OF THIN COMPOSITE PLATES USING LAGRANGE MULTIPLIER AND PENALTY METHODS
Saeedeh Qaderi, Nicholas Fantuzzi

C 25077 SELECTION OF SEISMIC MODELLING APPROACH FOR CANADIAN REINFORCED CONCRETE SHEAR WALL BUILDINGS BASED ON THEIR SEISMIC BEHAVIOUR CHARACTERIZATION
Derek Rodriguez, Farrokh Fazileh, Reza Fathi-Fazl

C 24983 A NEW PSEUDO-SPECTRAL SOLVER FOR 2D TSUNAMI EQUATIONS SUBJECTED TO DYNAMIC EARTHQUAKE GROUND MOTION
Thomas Melkior, Harsha Bhat, Faisal Amlani

C 25163 NUMERICAL EVALUATION OF THE SEISMIC PERFORMANCE OF SELF-CENTERING 3D PRINTED CONCRETE WALL
Syed Bustan Fatima Warsi, Biranchi Panda, Pankaj Biswas

C 25595 COMPUTATIONAL ANALYSIS OF ELECTROMECHANICAL COUPLING BETWEEN THE VIBRATION OF A BEAM AND THE INDUCED EDDY CURRENTS
Mikel Brun Martínez, Fernando Cortés Martínez, María Jesús Elejabarrieta Olabarri

**COMPDYN MS 3 - I
ADVANCED DISCRETIZATION METHODS FOR COMPUTATIONAL
STRUCTURAL DYNAMICS**

Sunday
17:45 - 19:45

Nefeli A

MS Organizers: *Bastian Oesterle, Manfred Bischoff, Alessandro Reali*

Chair: *Alessandro Reali*

C 25160 **KEYNOTE:** IMMERSED IGA AND MASS LUMPING FOR EXPLICIT DYNAMICS OF STRUCTURAL ELEMENTS
Angelos Pagonas, Lars Radtke, Michele Torre, Thomas J.R. Hughes, Alexander Düster, Giancarlo Sangalli, Alessandro Reali

C 25480 SELECTIVE MASS SCALING FOR TIMOSHENKO BEAM AND MINDLIN PLATE ELEMENTS BASED ON THE DISCRETE STRAIN GAP METHOD
Moritz Hoffmann, Anton Tkachuk, Manfred Bischoff, Bastian Oesterle

C 25305 ERROR BOUNDS IN COMPUTATIONAL DYNAMICS OF ROLLING HALF-DISK PROBLEMS: A COMPARATIVE ANALYSIS OF INTEGRATION METHODS
Ester Sallicandro, Luca Damiani, Roberto Serpieri

C 24571 PHASE FIELD FOR BRITTLE FRACTURE: A SECOND- AND FOURTH-ORDER MODEL COMPARISON IN DYNAMICS
Luigi Greco, Josef Kiendl, Matteo Negri, Alessia Patton, Alessandro Reali

C 25564 RECIPROCAL MASS MATRICES FOR FINITE ELEMENTS WITH ALLMAN'S ROTATIONS
Anton Tkachuk

UNCECOMP MS 18 - I
UNCERTAINTY QUANTIFICATION IN THE ERA OF SELF-SUPERVISED
LEARNING AND NEURAL OPERATORS

Sunday
17:45 - 19:45

Nefeli B

MS Organizers: *Ling Guo, Yannis Pantazis, George Em. Karniadakis*

Chair: *Ling Guo*

U 20961 KEYNOTE: CONTINUOUS VISION TRANSFORMER FOR OPERATOR LEARNING

Paris Perdikaris, Sifan Wang, Shaym Sankaran, Hanwen Wang, Jacob Seidman

U 21398 ROMPINN: REDUCED ORDER MODELING WITHIN PHYSICS-INFORMED NEURAL NETWORKS

Yannis Pantazis, Georgios Arampatzis

U 21179 PROBABILISTIC OPERATOR LEARNING: GENERATIVE MODELING AND UNCERTAINTY QUANTIFICATION FOR FOUNDATION MODELS OF NONLINEAR DYNAMICS

Markos Katsoulakis

U 21108 LEARNING FUNCTIONAL PRIORS AND POSTERiors FROM DATA AND PHYSICS USING DEEP GENERATIVE MODELS

Xuhui Meng

U 20938 MODEL AGGREGATION: MINIMIZING EMPIRICAL VARIANCE OUTPERFORMS MINIMIZING EMPIRICAL ERROR

Theo Bourdais, Houman Owhadi

U 21351 RANDOMIZED PHYSICS-INFORMED NEURAL NETWORKS FOR BAYESIAN DATA ASSIMILATION

Alexandre Tartakovsky, Yifei Zong, David Barajas-Solano

UNCECOMP MS 6
UNCERTAINTY QUANTIFICATION AND SCIENTIFIC MACHINE LEARNING
FOR RELIABLE DATA-DRIVEN MODELING AND SIMULATION IN
SCIENCE AND ENGINEERING

Sunday
17:45 - 19:45

Rotisserie

MS Organizers: *Dimitris Giovanis, Bojana Rosić, Dimitrios Loukrezis, Miroslav Vořechovský*

Chair: *Bojana Rosić*

U 20957 MANIFOLD LEARNING USING LEAST VOLUME AUTOENCODERS: APPLICATIONS TO INVERSE MODELING

Panos Tsilifis, Qiuyi Chen, Mark Fuge

U 21298 UNCERTAINTY QUANTIFICATION IN LASER POWDER BED FUSION USING MULTI-PHYSICS NUMERICAL SIMULATION AND COPULA-BASED ANALYSIS

Yunfan Zhang, Maria Nogal, Iuri Rocha, Oswaldo Morales-Napoles

U 21319 DUAL-ADAPTIVE PCE CONSTRUCTION STRATEGY

Eric Diehl, Miroslav Vořechovský, Dimitrios Loukrezis

U 21342 ADAPTIVE SURROGATE MODELING FOR EFFICIENT CALIBRATION OF NUMERICAL CODES

Sanae Janati Idrissi, Pietro Marco Congedo, Olivier Le Maître, Maria Giovanna Rodio

DAY 1

SUNDAY 15 JUNE

COMPDYN MS 50 MOVING LOADS AND INTERACTION PROBLEMS IN BRIDGE DYNAMICS

Sunday
17:45 - 19:45

Alpha

MS Organizers: *Pedro Museros, Andreas Andersson, Pedro Montenegro, Geert Lombaert*

Chair: *Elias Dimitrakopoulos*

-
- C 24450** APPLICATION OF THE EXTENDED MODIFIED BRIDGE SYSTEM (EMBS) METHOD IN SEISMIC VEHICLE-BRIDGE INTERACTION
*Hossein Homaei, Pedro Montenegro, Charikleia Stoura, **Elias Dimitrakopoulos***
- C 25103** PREDICTION OF DAMPING RATIOS OF EXISTING RAILWAY BRIDGES USING REGRESSION METHODS AND MACHINE LEARNING
Ronny Behnke, Günther Grunert, Xiaohan Liu
- C 25750** THREE-DIMENSIONAL MODELING VERSUS BEAM MODELING OF HIGH-SPEED RAILWAY BRIDGES CONSIDERING SOIL-STRUCTURE INTERACTION
Paul König, Christoph Adam
- C 25491** NUMERICAL APPROACH TO THE TRAFFIC INDUCED VIBRATIONS ON BRIDGES
Stefano Ercolessi, Carlo Rainieri, Giovanni Fabbrocino

COMPDYN MS 27 - I RESILIENCE, STRUCTURAL HEALTH MONITORING AND MANAGEMENT OF ASSETS AND NETWORKS IN TRANSPORTATION INFRASTRUCTURES

Sunday
17:45 - 19:45

Gamma

MS Organizers: *Gianni Blasi, Marco Civera, Andrea Miano*

Chair: *Gianni Blasi*

-
- C 24470** THE 'AMBROSE' SYSTEM: OUTCOMES OF AN ALTA SCUOLA POLITECNICA PROJECT ON STRUCTURAL HEALTH MONITORING
***Marco Civera**, Mauro Aimar, Pier Francesco Giordano, Valeria Amato, Christian Andreoli, Matilde Bidone, Samuele Franciolini, Davide Macario, Samuele Mara, Marco Raimondi, Bernardino Chiaia, Sebastiano Foti, Maria Pina Limongelli*
- C 24761** A FRAMEWORK FOR ASSESSING THE EARTHQUAKE-INDUCED LANDSLIDE RESILIENCE OF A ROAD NETWORK IN TURIN, ITALY
*Maxim Louagie, **Fabrizio Aloschi**, Marco Civera, Andrea Miano, Bernardino Chiaia, Andrea Prota*
- C 24491** INTELLIGENT MONITORING OF STEEL BRIDGE BEARINGS USING DEEP LEARNING METHODS
***Sina Roustaeikakaei**, Emanuela De Luca, Gabriele Bertagnoli, Davide Masera*
- C 25926** SHM DIGITAL SYSTEM FOR STRUCTURAL SAFETY
*Francesco Dionisio, Alessandro Lubrano Lobianco, Giuseppe Barile, Donatella de Silva, Antimo Fiorillo, **Andrea Miano**, Andrea Prota, Emidio Nigro*

COMPDYN MS 76
SEISMIC ISOLATION AND ENERGY DISSIPATION - RESPONSE
CONTROL SYSTEMS

Sunday
17:45 - 18:45

Epsilon

MS Organizer: *Constantine C. Spyrakos*

Chair: *Constantine C. Spyrakos*

C 25782 **KEYNOTE:** SEISMIC ISOLATION AND ITS EFFECTIVENESS AS A STRENGTHENING TECHNIQUE: A CASE STUDY

Constantine Spyrakos, Marios Arion Mitsouras, Dimitrios Kokkinakos

C 24901 DEVELOPMENT OF A PASSIVE VARIABLE ORIFICE DAMPER TO MITIGATE EXCESSIVE ISOLATOR DISPLACEMENT OF AN EXISTING BASE-ISOLATED BUILDING

Yoshiki Koyama, Sei Sugama, Satoshi Yamagami, Hidetaka Funaki, Kohju Ikago, Norio Inoue

C 25355 ADVANCED MODELING OF BUCKLING DELAYED SHEAR LINKS UNDER STRONG CYCLIC LOADS

Junior Ramirez Machado, Guillermo Bozzo, Jose Manuel Gonzalez, Fernando Rastellini, Joaquin Irazabal, Luis Bozzo

C 25608 DYNAMIC CHARACTERIZATION OF POLYURETHANE GEL FOR GEOTECHNICAL SEISMIC ISOLATION APPLICATIONS

Stefano Stacul, Nunziante Squeglia

COMPDYN MS 75
SEISMIC ASSESSMENT AND RETROFIT OF CULTURAL HERITAGE
AND HISTORIC STRUCTURES

Sunday
18:45 - 19:45

Epsilon

MS Organizer: *Constantine C. Spyrakos*

Chair: *Constantine C. Spyrakos*

C 25781 ASSESSMENT AND RESTORATION OF THE HISTORIC TEMPLE OF THE DORMITION OF THE THEOTOKOS AND THE PERIMETRIC FORTIFICATION WALLS AT PETRA, LESVOS IN GREECE

Constantine Spyrakos, Dimitrios Kokkinakos, Dimitrios Chiotis

C 24689 ACCELERATION, JERK AND MASONRY DISAGGREGATION: SEISMIC EFFECTS ON EXISTING MASONRY BUILDINGS

Massimo Mariani, Francesco Pugi

C 25205 SEISMIC ASSESSMENT AND RETROFIT OF THE ROMAN STATUES' INSTALLATION AT THE VILLA OPLONTIS SITE OF THE ARCHAEOLOGICAL PARK OF POMPEII

Eleonora Grossi, Alessandra Aprile, Alessandra Zambrano, Gabriel Zuchtriegel

COMPDYN MS 71
ARTIFICIAL INTELLIGENCE TECHNIQUES IN SEISMIC ENGINEERING

Sunday
17:45 - 19:45

Room A

MS Organizers: *Gianluca Quinci, Fabrizio Paolacci, Michalis Fragiadakis*

Chair: *Gianluca Quinci*

C 26125 SEISMIC RESPONSE PREDICTION OF ELECTRICAL EQUIPMENT IN SUBSTATION USING MACHINE LEARNING CHAIN MODELS

Wang Zhu, Fabrizio Paolacci, Gianluca Quinci, Qiang Xie

C 24686 MASONRY BUILDINGS RECONSTRUCTION COST POST-EARTHQUAKE ANALYSIS WITH MACHINE LEARNING

Angelo Aloisio, Marco Martino Rosso, Luca Di Battista, Giuseppe Carlo Marano, Giuseppe Quaranta, Cristoforo Demartino, Massimo Fragiacomio

DAY 1

SUNDAY 15 JUNE

- C 25349** RAPID SEISMIC RISK SCREENING OF SIMPLY SUPPORTED GIRDER BRIDGES USING A SIMPLIFIED ANN-BASED APPROACH: A CASE STUDY IN SICILY
Ignazio Casiraro, Gianluca Quinci, Denise Li Cavoli, Francesco Castelli, Marinella Fossetti, Fabrizio Paolacci

COMPDYN MS 51 - I
DYNAMIC RESPONSE OF ENGINEERING STRUCTURES: EXPERIMENTAL TECHNIQUES, MATHEMATICAL MODELS AND DESIGN METHODS

Sunday
17:45 - 19:45

Room B

MS Organizers: *Mehrdad Aghagholizadeh, Konstantinos Kalfas, Stefania Lo Feudo, Nicolò Vaiana*
Chair: *Stefania Lo Feudo*

- C 24851** EARTHQUAKE RESPONSE OF BRIDGES WITH DAMPED ROCKING PIERS
Mehrdad Aghagholizadeh
- C 24904** STIFFENING OF STRUCTURAL COMPONENTS IN WAFFLE SLABS FOR VIBRATION CONTROL UNDER HUMAN WALKING
Gelacio Juárez-Luna, Carlos Roberto Huerta Quiroz, Omar Caballero Garatachea
- C 24369** ADVANCED NUMERICAL MODELING OF DYNAMIC OUT-OF-PLANE BEHAVIOR IN UNREINFORCED MASONRY WALLS: FROM VALIDATION TO COMPLEX APPLICATIONS
Amirhossein Ghezelbash, Francesco Messali, Satyadhrik Sharma, Antonio Maria D'Altri, Paulo Lourenço, Stefano de Miranda, Jan Rots
- C 25409** NONLINEAR CRAIG-BAMPTON USING NORMAL NONLINEAR MODES NUMERICALLY COMPUTED ON A FINITE ELEMENT MODEL
Nicolas Leconte, Martin Ghienne, Nicolas Peyret
- C 24646** DEGRADING HYSTERESIS PHENOMENA IN REINFORCED CONCRETE STRUCTURES: CLASSIFICATION AND MODELING
Nicolò Vaiana, Luciano Rosati

COMPDYN TS 5 - I
DYNAMICS OF CONCRETE AND MASONRY STRUCTURES

Sunday
17:45 - 19:45

Room C

Chair: *Arturo Tena-Colunga*

- C 24781** **KEYNOTE:** IMPACT OF DIAPHRAGM FLEXIBILITY ON DYNAMIC PROPERTIES AND LATERAL DISPLACEMENTS OF HIGHLY IRREGULAR BUILDINGS
Arturo Tena-Colunga, Rafael Sabanero
- C 25089** RELIABILITY ASSESSMENT OF RC BUILDINGS WITH BUCKLING-RESTRAINED BRACES
Víctor Alejandro García-Alcántara, Daniel Herrera, Dante Tolentino
- C 25324** LS-DYNA NUMERICAL SIMULATION OF MASONRY GABLES OUT OF-PLANE RESPONSE TESTED DYNAMICALLY
Michele Malaspina, Danny Bond, Jamie Dennis, Michele Palmieri, Gianmarco Montalbini, Richard Sturt
- C 25375** SEISMIC BEHAVIOR OF HETEROGENEOUS MASONRY AGGREGATES: INSIGHTS FROM CENTRAL AMERICAN CONSTRUCTION PRACTICES
Rodrigo Hermosilla-Osorio, Beatriz González-Rodrigo, Sebastian Torres-Olivares, Erick Saavedra Flores, Diego Hidalgo-Leiva, Nicola Tarque

- C 25451** PARAMETRIC SEISMIC ANALYSIS OF HYBRID MASONRY-REINFORCED CONCRETE BUILDING
Salvatore Chirivì, Gianni Blasi, Francesco Micelli, Maria Antonietta Aiello
- C 25872** NUMERICAL MODELLING OF A PRECAST RC BUILDING WITH POOR ELEMENT CONNECTIONS
Romano Jevtić Rundek, Mario Uroš, Marija Demšić, Marta Šavor Novak
- C 25989** SEISMIC ASSESSMENT OF A MASONRY CROSS-VAULT USING THE APPLIED ELEMENT METHOD
Martina Cogliano, Chiara Casotto, Giulia Grecchi, Matteo Moratti, Gian Michele Calvi

UNCECOMP MS 19 - I
UNCERTAINTY QUANTIFICATION AND MACHINE LEARNING
APPLICATIONS IN SCIENCES AND ENGINEERING

Sunday
17:45 - 19:45

Room D

MS Organizers: *Ambrosios Antonios Savvides, Denise-Penelope N. Kontoni*

Chair: *Ambrosios Antonios Savvides*

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- U 21377** MACHINE LEARNING APPROACH OF CLAYEY-ORIENTED ROCK MASS MATERIAL PROPERTIES PREDICTION, SITED IN KOROI, ATHENS, GREECE
Ambrosios-Antonios Savvides, Andreas Antoniou, Leonidas Papadopoulos, Anastasia Monia, Kalliopi Kofina
- U 21280** IMAGE-WISE UNCERTAINTY QUANTIFICATION FOR MEDICAL IMAGING
Philipp Rosauer, Angelina Händeler, Felix Terhag, Alexander Rüttgers, Michael Felderer
- U 21378** DYNAMIC SOIL STRUCTURE INTERACTION-ABSORBING BOUNDARIES AND ITS NUMERICAL INVESTIGATION
Ambrosios-Antonios Savvides
- U 21170** LABEL-EFFICIENT CARDIAC VOLUME ESTIMATION IN REAL-TIME MRI USING SPARSE BAYESIAN LEARNING
Felix Terhag, Philipp Knechtges, Anja Bach, Darius Gerlach, Jens Tank, Achim Basermann, Raúl Tempone
- U 21244** AUTOREGRESSIVE MULTIPLIER BOOTSTRAP FOR ON-LINE QUALITY MONITORING OF FINITE TIME AVERAGES IN TURBULENT FLOW SIMULATIONS
Christos Papagiannis, Guillaume Balarac, Pietro Marco Congedo, Olivier LeMaître
- U 21255** A VARIATIONAL INFERENCE GRADIENT-FREE PARAMETER OPTIMIZER FOR SIMULATIONS IN AEROSPACE APPLICATIONS
Florian Becker, Philipp Knechtges

DAY 2

MONDAY 16 JUNE

UNCECOMP MS 7 - I SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION: NEW TRENDS

Monday
9:00 - 11:00

Delphi

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

Chair: Jean-Marc Bourinet

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- U 21050** **KEYNOTE:** SURROGATE MODELING AND MACHINE LEARNING REGRESSION: AN EXTENSIVE BENCHMARK STUDY
Adéla Hlobilová, Stefano Marelli, Bruno Sudret
- U 21137** EMULATING STOCHASTIC MODELS: A MULTI-FIDELITY METHODOLOGY AND PRACTICAL APPLICATION
Katerina Giannoukou, Stefano Marelli, Bruno Sudret
- U 20993** SURROGATE MODELLING FOR SIMULATORS WITH MIXED CONTINUOUS AND CATEGORICAL VARIABLES USING POLYNOMIAL CHAOS EXPANSIONS
Xujia Zhu, Bruno Sudret
- U 21158** STATE SPACE KRIGING MODEL FOR EMULATING COMPLEX STOCHASTIC DYNAMICAL SYSTEMS
Kai Cheng, Iason Papaioannou, Daniel Straub
- U 21212** AN INVESTIGATION OF THE UNCERTAINTY PROPAGATION IN MULTIBODY DYNAMICS FOR A LONG-TIME EVALUATION USING TIME-DEPENDENT POLYNOMIAL CHAOS
Seok-Hee Han, Hee-Sun Choi, Jin-Gyun Kim

UNCECOMP MS 1 - II UNCERTAINTY QUANTIFICATION, RELIABILITY, AND SENSITIVITY ANALYSIS UNDER LIMITED DATA

Monday
9:00 - 11:00

Salon des Roses A

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

Chair: Michael Hanss

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- U 21460** **KEYNOTE:** CAPACITY BOUNDS OF UNREINFORCED MASONRY WALLS WITH INTERVAL MECHANICAL PROPERTIES
Alba Sofi, Elyas Bayat, Federica Tubino
- U 21200** POSSIBILISTIC NEURAL NETWORKS: RELIABLE CONFIDENCE PREDICTIONS UNDER LIMITED DATA
Jan Schneider, Tom Könecke, Michael Hanss
- U 21075** HETEROSCEDASTIC GAUSSIAN PROCESS THROUGH KERNEL SMOOTHING
Ghifari Adam Faza, Nasrulloh Ratu Bagus Satrio Loka, David Moens
- U 21203** REDUCING COMPUTATIONAL COSTS IN RELIABILITY ANALYSIS OF STOCHASTIC SIMULATORS THROUGH ACTIVE LEARNING AND STOCHASTIC EMULATORS
Anderson Pires, Maliki Moustapha, Stefano Marelli, Bruno Sudret
- U 21076** AN EMPIRICAL EVALUATION OF INTERVAL NEURAL NETWORKS FOR UNCERTAINTY QUANTIFICATION ON REGRESSION TASKS
Kaizheng Wang, Ghifari Adam Faza, Keivan Shariatmadar, David Moens, Hans Hallez

COMPDYN MS 15 - I
ADVANCED NUMERICAL METHODS FOR DYNAMIC ANALYSIS
OF PERIODIC STRUCTURES AND METAMATERIALS

Monday
9:00 - 11:00

Salon des Roses B

MS Organizers: *Jean-Mathieu Mencik, Denis Duhamel*

Chair: *Denis Duhamel*

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- C 24867** **KEYNOTE:** TIME RESPONSE COMPUTATION OF 1D-PERIODIC STRUCTURES WITH WAVE-BASED ABSORBING BOUNDARY CONDITIONS
Jean-Mathieu Mencik, Denis Duhamel
- C 25061** DESIGN OF ELASTIC METASURFACES FOR SCHOLTE-STONELEY WAVE MANIPULATION AND MODE CONVERSION
Farhad Zeighami, Said Quqa, Jacopo Maria De Ponti, Nadeen Ayyash, Alessandro Marzani, Antonio Palermo
- C 24862** NUMERICAL INVESTIGATION OF ELASTIC WAVES IN SPIRAL WIRE ROPES
Fabien Treyssède
- C 24948** SIMPLIFIED MODELING OF ELASTIC GUIDED WAVES IN A PRE-STRESSED CABLE
Konstantinos Kondylidis, Roméo Bi djaha Irie, Fabien Treyssède, Laurent Laguerre, Pierric Mora
- C 25234** REDUCED ORDER MODELING FOR QUANTIFYING THE IMPACT OF VARIABILITY ON THE PERFORMANCE OF AN INFINITE LOCALLY RESONANT METAMATERIAL BEAM
Yves Pillot, Régis Boukadia, Lucas Van Belle, Elke Deckers

UNCECOMP MS 12 - II
MULTISCALE AND MULTIPHYSICS MODELLING FOR COMPLEX
MATERIALS (MMCM 21)

Monday
9:00 - 11:00

Athena

MS Organizers: *Marco Pingaro, Patrizia Trovalusci, George Stefanou, Greta Ongaro, Marco Colatosti*

Chair: *George Stefanou*

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- U 21240** **KEYNOTE:** INFLUENCE OF MACROSCOPIC/MICROSCOPIC RESOLUTION ON MULTISCALE STOCHASTIC STRENGTH ANALYSIS OF COMPOSITES WITH RANDOM FIELD MODELING
Sei-ichiro Sakata, Yuki Arai, Seiji Ono, Atsushi Shigemoto
- U 21478** STOCHASTICALLY RECONSTRUCTING 3D GRAIN MAPS FOR CRYSTAL PLASTICITY SIMULATIONS FROM MICROSCOPIC 2D IMAGE DATA
Orkun Furat, Ucey Suhuddin, Benedikt Prifling, Benjamin Klusemann, Volker Schmidt
- U 21463** MULTISCALE STRUCTURAL OPTIMIZATION WITH EMBEDDED HIERARCHICAL MATERIAL ARCHITECTURES
Andrea Chiozzi, Andrea Nale
- U 21477** ACOUSTIC TRANSMISSION OF MICROPOLAR PLATES
Annamaria Pau, Christian Meso, Zine El Abiddine Fellah, E. Ogam
- U 21314** UNSUPERVISED SEGMENTATION OF LOW-CONTRAST CONCRETE XCT IMAGES: ASSESSING QUALITY WITHOUT GROUND TRUTH
Kaustav Das, Jan Sykora, Anna Kucerova

DAY 2

MONDAY 16 JUNE

COMPDYN MS 67 - II GLOBAL AND LOCAL BEHAVIOUR OF STEEL STRUCTURES UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS

Monday
9:00 - 11:00

Nafsika A

MS Organizers: *Roberto Tartaglia, Alessando Pisapia, Aldo Milone*

Chair: *Alessando Pisapia*

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- C 24759** SEISMIC BEHAVIOUR OF BOLTED BEAM-TO-COLUMN STEEL JOINTS
Francesco Monte, Roberto Tartaglia, Giuseppe Maddaloni
- C 24619** INVESTIGATION OF STRUCTURAL SOLUTIONS FOR A STEEL AND ALUMINUM DECAY VESSEL OF THE SEARCH FOR HIDDEN PARTICLES (SHIP) EXPERIMENT AT CERN
Fabrizio Aloschi, Giovanni De Lellis, Antimo Fiorillo, Richard Jacobsson, Andrea Miano, Andrea Prota
- C 25369** A PROPOSAL OF SEISMIC DESIGN RULES FOR CFS SHEAR WALLS WITH WOODEN PANELS
Vito D'Addesa
- C 25514** COMPUTATIONAL MODELLING AND DESIGN OF IMPROVED I-BEAM TO RECTANGULAR HOLLOW COLUMN CONNECTION USING DIAPHRAGMS AND VERTICAL STIFFENERS
Daniel Enrique González Ramírez, Gelacio Juárez Luna, Alonso Gómez Bernal
- C 24765** SEISMIC PERFORMANCE OF STEEL FRAMES WITH ALUMINIUM BUCKLING RESTRAINED BRACES
Ruban Sugumar, Dipti Ranjan Sahoo, Çigdem Avcı-Karataş
- C 24610** COMPARATIVE LIFE-CYCLE COST ANALYSIS OF EXISTING STEEL FRAMES RETROFITTED WITH DIFFERENT BUCKLING-RESTRAINED BRACE DESIGNS
Giulia Giuliani, Fernando Gutiérrez-Urzúa, Roberto Gentile, Fabio Freddi
- C 25244** CONCENTRICALLY BRACED FRAMES CONNECTIONS ACCORDING TO THE SECOND GENERATION OF EUROCODE 8
Massimo Cicia

COMPDYN TS 14 - II NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS

Monday
9:00 - 11:00

Nafsika B

Chair: *Antonio Morales-Esteban*

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- C 24575** A CALCULATION METHOD FOR THE STRUCTURAL ANALYSIS AND THE DESIGN OF ACTIVE MASS DAMPER SYSTEMS FOR VIBRATION CONTROL AND SEISMIC PROTECTION OF STRUCTURES
Giovanni Rebecchi, Valentina Bellotti, Guido Ducoli, Andrea Codina
- C 25130** SIMPLIFIED MODEL FOR THE TRANSIENT DYNAMIC ANALYSIS OF BOLTED ASSEMBLIES
Quentin Lançon, Pierre-Alain Guidault, Pierre-Alain Boucard, Nicolas Vallino
- C 24945** COMPARISON BETWEEN RADIATIVE TRANSFER THEORY AND WAVE PROPAGATION IN HIGH FREQUENCY HOMOGENISATION REGIME
Lucio de Abreu Correa, Madu Fall, Shahram Khazaie, Cristophe Gomez, Régis Cottureau
- C 25340** EXTENSION OF THE VARIATIONAL THEORY OF COMPLEX RAYS TO VIBRO-ACOUSTIC COUPLING
Raphael Thevenot, Guillaume Puel, Andrea Barbarulo, Patryk Dec
- C 25952** IMPACT OF A TWO-PARAMETER ELASTIC FOUNDATION ON EDGE WAVE PROPAGATION IN AN ORTHOTROPIC LAYER
Saad Althobaiti

- C 25717** FOURIER-BASED ANALYTICAL FRAMEWORK FOR NON-HOMOGENEOUS BALLAST-LESS RAILWAY TRACKS
David Gonzalez Velasco, Denis Duhamel, Tien Hoang, Gilles Foret, Hervé Lenglin, Bertrand Findinier
- C 25942** SIMPLIFIED ANALYTICAL/NUMERICAL MODELS FOR DYNAMIC RESPONSE OF CROSS-ANISOTROPIC POROELASTIC MEDIA: APPLICATIONS TO RETAINING WALLS AND PAVEMENTS
Niki Beskou, Edmond Muho

COMPDYN MS 3 - II
ADVANCED DISCRETIZATION METHODS FOR COMPUTATIONAL STRUCTURAL DYNAMICS

Monday
9:00 - 11:00

Nefeli A

MS Organizers: *Bastian Oesterle, Manfred Bischoff, Alessandro Reali*

Chair: *Manfred Bischoff*

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- C 26182** **KEYNOTE:** HIGHER-ORDER ACCURATE MASS LUMPING IN EXPLICIT ISOGEOMETRIC STRUCTURAL DYNAMICS USING APPROXIMATE DUAL BASIS FUNCTIONS
René Hiemstra, Hoa Nguyen, Sascha Eisenträger, Wolfgang Dornisch, Dominik Schillinger
- C 24508** SPACE-TIME DISCRETIZATION AND CONTINUATION METHODS FOR EVALUATING THE PERIODIC SOLUTIONS OF NONLINEAR DYNAMIC SYSTEMS
Domenico Magisano, Andrea Leonetti, Giovanni Formica, Giovanni Garcea
- C 25471** A COMPARISON OF SELECTIVE MASS SCALING METHODS FOR THIN SOLIDS
Moritz Hoffmann, Anton Tkachuk, Manfred Bischoff, Bastian Oesterle
- C 24794** ISOGEOMETRIC COLLOCATION METHODS FOR EXPLICIT DYNAMICS
Michele Torre, Alessandro Reali
- C 25484** THE INFLUENCE OF PRESTRESS ON THE WRINKLING BEHAVIOR OF SHEARED RECTANGULAR MEMBRANES: FIRST EXPERIMENTAL RESULTS AND TRANSIENT SHELL ANALYSES
Timon Burgwedel, Axel Seils, Sven Reinhart, Bastian Oesterle
- C 26005** A HIGH-ORDER TIME AND SPACE-ACCURATE METHOD FOR THE EXPLICIT DYNAMICS OF GEOMETRICALLY EXACT BEAMS
Giulio Ferri, Enzo Marino

UNCECOMP MS 18 - II
UNCERTAINTY QUANTIFICATION IN THE ERA OF SELF-SUPERVISED LEARNING AND NEURAL OPERATORS

Monday
9:00 - 11:00

Nefeli B

MS Organizers: *Ling Guo, Yannis Pantazis, George Em. Karniadakis*

Chair: *Paris Perdikaris*

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- U 21457** **KEYNOTE:** UNCERTAINTY QUANTIFICATION IN SCIENTIFIC MACHINE LEARNING VIA THE INFORMATION BOTTLENECK PRINCIPLE
Ling Guo
- U 21121** QUANTIFICATION OF TOTAL UNCERTAINTY IN THE PHYSICS-INFORMED RECONSTRUCTION OF CVSIM-6 PHYSIOLOGY
Daniele Schiavazzi, Mario De Florio, Zongren Zou, George Karniadakis
- U 21499** A GENERATIVE MODELING / PHYSICS-INFORMED NEURAL NETWORK APPROACH TO RANDOM DIFFERENTIAL EQUATIONS
Georgios Aratzis, Stylianos Katsarakis, Charalambos Makridakis

DAY 2

MONDAY 16 JUNE

U 21185 DEEP OPERATOR LEARNING FOR SOLVING THE FOKKER-PLANCK EQUATION
Li Zeng

U 20960 TOWARDS SCIENTIFIC FOUNDATION MODELS WITH IN-CONTEXT OPERATOR NETWORKS
Liu Yang

COMPDYN MS 46 - I RECENT ADVANCES IN MULTI-RISK ASSESSMENT OF EXISTING CONSTRUCTIONS HAVING ALSO HISTORICAL VALUE

Monday
9:00 - 11:00

Rotisserie

MS Organizers: *Silvia Caprili, Michele D'Amato, Federica Del Carlo, Roselena Sulla*

Chair: *Michele D'Amato*

C 25703 A MULTILEVEL APPROACH TO SEISMIC ANALYSIS OF RESIDENTIAL BUILDINGS INCORPORATING
TERRITORIAL EXPOSURE
*Federica Del Carlo, Diego Altafini, Tiago Miguel Ferreira, **Silvia Caprili***

C 24764 SEISMIC VULNERABILITY ASSESSMENT OF EXISTING MASONRY BUILDINGS: A COMPARISON BETWEEN
TWO DIFFERENT MODELING APPROACHES
***Annarita Palmiotta**, Roselena Sulla, Michele D'Amato, Rosario Gigliotti*

C 24554 INTEGRATING GEOSCIENCES AND EARTHQUAKE ENGINEERING FOR THE CONSERVATION OF HISTORIC
MONUMENTAL BUILDINGS IN OLD CAIRO: CORENG PERSPECTIVE AND FIRST RESULTS
***Marco Fasan**, Chiara Bedon, H. Abdel Hafez, Hany Hassan, Marco Francesco Funari, Fabio Romanelli*

C 24773 FINITE ELEMENT MODELING FOR SEISMIC ASSESSMENT OF EXISTING MASONRY CHURCHES – PART I:
GLOBAL ANALYSES
***Anna Lo Monaco**, Antonella Ranaldo, Michele D'Amato, Rosario Gigliotti, Marius Mosoarca*

C 24887 AN INNOVATIVE CONNECTION FOR SEISMIC DESIGN OF STEEL EXOSKELETONS
***Alfonso Ferdinando Coniglio**, Lorenzo Audisio, Michele D'Amato, Rosario Gigliotti*

COMPDYN MS 19 - I RECENT ADVANCES IN RISK-INFORMED PRIORITISATION AND ASSESSMENT OF EXISTING BRIDGES

Monday
9:00 - 11:00

Alpha

MS Organizers: *Andrea Nettis, Sergio Ruggieri, Andrea Meoni, Agnese Natali, Mariano Angelo Zanini*

Chair: *Andrea Nettis*

C 25609 **KEYNOTE:** 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 25351 AN ICT MULTI-RISK INFORMED PLATFORM FOR THE MANAGEMENT OF BRIDGES
*Agnese Natali, Giuseppe Chellini, Laura Ierimonti, Michele Morici, Laura Gioiella, Enrique García
Macías, Micheal Bjorn Miletto, Ardit Musaku, Adrian Pitigoi, Bledar Xhaferi, Andrea Dall'Asta, Filippo
Ubertini, **Walter Salvatore***

C 24667 DETECTING AND IDENTIFYING CRACKS IN RC BRIDGES VIA SINGLE-STAGE OBJECT DETECTORS
***Angelo Cardellicchio**, Vito Renò, Vincenzo Mario Di Mucci, Andrea Nettis, Sergio Ruggieri, Giuseppina
Uva*

C 24681 THE IMPACTS OF STRUCTURE-TO-STRUCTURE DAMAGE CORRELATION ON REGIONAL SEISMIC RISK ASSESSMENT
Tomas Mejia, Gerard O'Reilly

C 26094 SELF-SENSING BUILDING MATERIALS FOR ADVANCED STRUCTURAL HEALTH MONITORING OF MASONRY ARCH BRIDGES: A PROOF-OF-CONCEPT STUDY THROUGH NUMERICAL INVESTIGATIONS
Andrea Meoni, F. Falini, G. Comanducci, Filippo Ubertini

**COMPDYN MS 27 - II
 RESILIENCE, STRUCTURAL HEALTH MONITORING AND MANAGEMENT
 OF ASSETS AND NETWORKS IN TRANSPORTATION
 INFRASTRUCTURES**

*Monday
 9:00 - 11:00*

Gamma

MS Organizers: *Gianni Blasi, Marco Civera, Andrea Miano*
 Chair: *Andrea Miano*

C 25460 COMBINING MULTIRISK REGIONAL ASSESSMENT OF CIVIL INFRASTRUCTURES WITH MATERIAL DEGRADATION. A BRIEF REVIEW
Gianni Blasi, Marco Civera, Andrea Miano

C 26036 IDENTIFICATION OF STRAIN INFLUENCE LINES OF A STEEL RAILWAY BRIDGE USING DEEP LEARNING
Dimitrios Anastasopoulos, Xudong Jian, Eleni Chatzi, Edwin Reynders

C 24949 TIME-DEPENDENT STRUCTURAL RESPONSE OF REINFORCED CONCRETE BRIDGE PIERS CONSIDERING DEGRADATION PHENOMENA UNCERTAINTIES
Paolo Andrea Miglietta, Gianni Blasi, Daniele Perrone, Francesco Micelli, Maria Antonietta Aiello

C 25320 FIRE BEHAVIOUR OF FIBER REINFORCED CONCRETE TUNNEL: A REVIEW
Donatella de Silva, Nunzia Gargiulo, Emidio Nigro

C 25317 A METHODOLOGY TO ASSESS THE MULTI-HAZARD FRAGILITY OF BRIDGE PIERS SUBJECTED TO EARTHQUAKE AND FIRE HAZARDS
Antonio Cibelli, Sara Minieri, Donatella de Silva, Andrea Miano, Emidio Nigro

**COMPDYN MS 1
 RETROFIT STRATEGIES FOR SEISMIC PROTECTION OF STRUCTURES
 WITH INNOVATIVE VIBRATION CONTROL SYSTEMS**

*Monday
 9:00 - 11:00*

Epsilon

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

C 25298 FEASIBILITY OF SEMI-ACTIVE MOVABLE SHEAR KEY FOR SEISMIC VIBRATION CONTROL OF BRIDGES
B. Neethu, Ioannis Mikes, Agathoklis Giaralis, Andreas Kappos

C 25439 SEISMIC RETROFITTING METHODS VERSUS BASE ISOLATION SYSTEMS – CASE STUDY OF EVANGELISMOS BUILDING IN HERAKLION CRETE
Stylianios Kapsalis, Dimitrios Koutras, Konstantinos Kapasakalis, Evangelos Sapountzakis

C 24822 EXPERIMENTAL ASSESSMENT AND NUMERICAL ANALYSIS OF A NEW HYSTERETIC TUNED MASS DAMPER WITH BUMPERS FOR SEISMIC PROTECTION
Vinay Yadav Janga, Pranath Kumar Gourishetty, Biagio Carboni, Giuseppe Quaranta, Walter Lacarbonara

DAY 2

MONDAY 16 JUNE

- C 25164** STUDY AND OPTIMIZATION OF THE NEGSV DEVICE FOR SEISMIC PROTECTION VIA MACHINE LEARNING TECHNIQUES
Kyriakos Alexandros Chondrogiannis, Giacomo Arcieri, Vasilis Dertimanis, Eleni Chatzi

UNCECOMP MS 16 - I
MULTI-FIDELITY INFORMATION MANAGEMENT TO MITIGATE HIGH-FIDELITY DATA SCARCITY IN COMPUTATIONAL SCIENCE AND ENGINEERING

Monday
9:00 - 11:00

Room A

MS Organizers: *Gianluca Geraci, Daniele E. Schiavazzi*

Chair: *Daniele E. Schiavazzi*

- U 21129** STOCHASTIC NEURAL MODELS FOR MATERIAL MODELS WITH UNCERTAINTY
Cosmin Safta, Reese Jones, Raelynn Wonnacott, Craig Hamel, Dan Bolintineanu, Sharlotte Kramer, Ravi Patel
- U 20998** MULTI-FIDELITY GENERATIVE MODELING FOR SPATIOTEMPORAL FIELD GENERATION USING FLOW-MATCHING
Sahil Bhola, Karthik Duraisamy
- U 20986** MULTI-FIDELITY UNCERTAINTY QUANTIFICATION AND PERSONALIZATION FOR CORONARY BLOOD FLOW SIMULATIONS INFORMED BY CLINICAL IMAGING
Karthik Menon, Andrea Zanon, Owais Khan, Gianluca Geraci, Koen Nieman, Daniele Schiavazzi, Alison Marsden
- U 21077** MANUFACTURING UNCERTAINTIES IN FIBER-REINFORCED COMPOSITES: MULTILEVEL POLYNOMIAL SURROGATES FOR RELIABLE UNCERTAINTY QUANTIFICATION
Stjepan Salatovic, Sebastian Krumscheid, Florian Wittemann, Luise Kärger
- U 21008** DOMAIN DECOMPOSITION FOR LARGE NEURAL NETWORKS DESCRIBING BATTERY MECHANICAL RESPONSE
Timm Gödde, Bojana Rosić

COMPDYN MS 51 - II
DYNAMIC RESPONSE OF ENGINEERING STRUCTURES: EXPERIMENTAL TECHNIQUES, MATHEMATICAL MODELS AND DESIGN METHODS

Monday
9:00 - 11:00

Room B

MS Organizers: *Mehrdad Aghagholizadeh, Konstantinos Kalfas, Stefania Lo Feudo, Nicolò Vaiana*

Chair: *Nicolò Vaiana*

- C 25482** CHARACTERIZATION OF THE PRESSURIZED-SAND DAMPERS WITH A NEWLY DEVELOPED UNIAXIAL MODEL
Konstantinos Kalfas, Nicolò Vaiana, Nicos Makris
- C 25189** EXPERIMENTAL ANALYSIS OF A SMA-FRP HYBRID COMPOSITE
Yvan Magos, Stefania Lo Feudo, Olga Klinkova, João Pacheco de Almeida
- C 27151** BIOINSPIRED IMPACT-RESISTANT STRUCTURES
Iwona Jasiuk, Shashank Kushwaha, Junyan He, Diab Abueidda
- C 25367** MODELIZATION AND CHARACTERIZATION THE DYNAMICS OF HIGH-RISE WOODEN STRUCTURE
Layla Kordylas, Franck Renaud, Jean-Luc Dion

COMPDYN TS 5 - II
DYNAMICS OF CONCRETE AND MASONRY STRUCTURES
Monday
9:00 - 11:00
Room CChair: *Tadeusz Tatara*
C 26816 SHAKING TABLE EXPERIMENTS FOR POLYMER CHIMNEY MODEL USING DIFFERENT TECHNIQS OF MEASUREMENTS

Pawel Boron, Joanna Dulinska, Tadeusz Tatara
C 26107 DYNAMIC ROCKING BEHAVIOR OF ANCIENT-INSPIRED FREESTANDING SYSTEMS UNDER NEAR-FAULT PULSE-LIKE EXCITATION

Ebru Toy, Ayşe Edinçliler, Eren Uçkan
C 25486 NUMERICAL MODELLING OF CONNECTIONS FOR INSULATED PRECAST CONCRETE WALLS

Alexia Ribeiro, Seyedsajjad Hosseini, André Furtado, Ricardo Carmo, Romain Sousa, Wanchai Detphan, Yllnor Tmava, Wit Derkowski, Eduardo Júlio
C 25841 THE EFFECTS OF MOISTURE-INDUCED DEGRADATION ON THE STRUCTURAL PERFORMANCE OF HISTORICAL BUILDINGS: A CASE STUDY

Matteo Sticchi, Gianni Blasi, Emilia Vasanelli, Maria Antonietta Aiello
C 25957 IMPACT OF PLAN IRREGULARITY ON THE SEISMIC BEHAVIOR OF PARTIALLY GROUTED MASONRY STRUCTURES IN COSTA RICA

Gonzalo Núñez-Álvarez, Laura Navas-Sánchez, Diego Hidalgo-Leiva, Beatriz González-Rodrigo
C 25944 EXPERIMENTAL INVESTIGATION OF RC FRAMES WITH MASONRY INFILLS DECOUPLED FROM THE FRAME USING INNOVATIVE RUBBER CONNECTION

Marko Marinković, Christoph Butnweg
C 26087 RESPONSE REDUCTION FACTOR OF IRREGULAR RC BUILDINGS WITH MASONRY INFILLS IN THE KOYNA-WARNA SEISMIC REGION

Mangeshkumar Shendkar, Denise-Penelope Kontoni, Ashish Singh, Sasankasekhar Mandal, Pabitra Ranjan Maiti
UNCECOMP MS 19 - II
UNCERTAINTY QUANTIFICATION AND MACHINE LEARNING
APPLICATIONS IN SCIENCES AND ENGINEERING
Monday
9:00 - 10:00
Room DMS Organizers: *Ambrosios Antonios Savvides, Denise-Penelope N. Kontoni*Chair: *Ambrosios Antonios Savvides*
U 21380 A NEURAL NETWORK PERSPECTIVE FOR THE ESTIMATION OF METAL ION CONCENTRATION ON DISTILLATE MARINE DIESEL FUELS

Ambrosios-Antonios Savvides, Leonidas Papadopoulos, George Intzirtzis, Stamatios Kalligeros
U 21346 COUPLED CANN-DEM SIMULATION IN SOLID MECHANICS

Stefan Hildebrand, Jonathan Georg Friedrich, Sandra Klinge
U 22243 MACHINE LEARNING-AIDED MULTIPHYSICS SOLVER FOR COMPUTATIONALLY EFFICIENT TUMOR MICROENVIRONMENT MODELING

Gerasimos Sotiropoulos, Konstantinos Atzarakis, Vissarion Papadopoulos
U 21379 AN INVESTIGATION OF THE DYNAMIC SOIL-STRUCTURE INTERACTION FOR SHEAR VULNERABLE STRUCTURES WITH NONLINEAR FINITE ELEMENTS

Ambrosios-Antonios Savvides

DAY 2

MONDAY 16 JUNE

COMPdyn MS 21 EXPLAINABLE AND PHYSICS-INFORMED MACHINE LEARNING FOR NATURAL HAZARDS, EXPOSURE, AND RISK MODELLING

Monday
10:00 - 11:00

Room D

MS Organizers: *Jawad Fayaz, Mohsen Zaker Esteghamati*

Chair: *Jawad Fayaz*

C 25222 ADVANCING EARTHQUAKE EARLY WARNING WITH SPATIAL EFFICACY ANALYSIS AND EXPLAINABLE AI: INSIGHTS FROM ROSERS IN SUBDUCTION ZONES
Jawad Fayaz

C 24923 PHYSICS-INFORMED DEEP OPERATOR NETWORKS WITH STIFFNESS-BASED LOSS FUNCTIONS FOR STRUCTURAL RESPONSE PREDICTION
Bilal Ahmed, Yuqing Qui, Diab Abueidda, Mostafa E. Mobasher

C 25228 AN INTEGRATED METHODOLOGY COMBINING CNN WITH AN INTERVIEW-BASED APPROACH TO ENHANCE RAPID BUILDING INVENTORY AT THE MUNICIPALITY SCALE
Onur Ulku, Maria Polese, Jelena Pejovic, Nina Serdar

COMPdyn MS 2 OPTIMIZATION FOR SEISMIC RISK REDUCTION: FROM STRUCTURAL MONITORING AND ASSESSMENT TO RETROFITTING DESIGN

Monday
9:00 - 11:00

VIP Room

MS Organizers: *Giulia Angelucci, Fabrizio Mollaioli, Giuseppe Quaranta, Humberto Varum*

Chair: *Giulia Angelucci, Fabrizio Mollaioli*

C 26924 SEISMIC RETROFIT OF AN EXISTING CRITICAL FACILITY WITH HORIZONTAL AND VERTICAL IRREGULARITIES
Alessandro Feraudi, Adel Bali, Alessandro Cardoni, Gian Paolo Cimellaro

C 24625 SEISMIC RETROFIT OPTIMIZATION FOR NON-CONFORMING RC BUILDINGS
Giulia Angelucci, Giuseppe Quaranta, Fabrizio Mollaioli

C 26008 EXPERIMENTAL AND NUMERICAL ANALYSIS OF A SUBSTRUCTURE SYSTEM OF A FULLY PRECAST BRIDGE UNDER HORIZONTAL CYCLIC LOADS
Lucas Carvalho, Mário Pimentel, António Arêde, Pedro Delgado

C 24674 ENERGY BASED DESIGN OF LOW DAMAGE ROCKING SYSTEMS FOR STEEL FRAMES
Michela De Angelis, Giulia Angelucci, Giuseppe Quaranta, Fabrizio Mollaioli

C 25619 RAPID ASSESSMENT OF NON-INSTRUMENTED FLOORS: A REVIEW OF METHODS AND A NEW SIMPLIFIED DIGITAL TWIN APPROACH
Emre Gönülcü, Ahmet Anıl Dindar, Engin Orakdoğan

C 24848 BUILDING DAMAGE LEVEL CLASSIFICATION USING DEEP LEARNING: A CNN-BASED APPROACH FOR POST-EARTHQUAKE STRUCTURAL ASSESSMENT
Simone Saquella, Michele Scarpiniti, Livio Pedone, Giulia Angelucci, Mattia Francioli, Michele Matteoni, Stefano Pampanin

11:00-11:30
Coffee Break

PLENARY LECTURES

Monday
11:30 - 13:00

Delphi

Chair: *Martin Ostoja-Starzewski*

C 27305 EXCURSIONS IN DATA ASSIMILATION: FROM OBSERVATIONS TO DECISIONS
*Roger Ghanem***C 26193** DIGITAL TWIN FOR CRITICAL INFRASTRUCTURES USING HIGH-PERFORMANCE COMPUTING – FROM 3 D
TO 4D
Muneo Hori

13:00-14:30

Lunch Break

UNCECOMP MS 7 - II
SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION:
NEW TRENDS

Monday
14:30 - 16:30

Delphi

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

- U 21127** GAUSSIAN PROCESS REGRESSION AND METROPOLIS-ADJUSTED LANGEVIN DYNAMICS FOR ESTIMATING INTRACTABLE POSTERIOR DISTRIBUTIONS
Guillaume Perrin, Romain Jorge Do Marco, Christian Soize, Christine Funfschilling
- U 21234** ADAPTIVE LEARNING OF CONFIDENCE REGIONS FOR EXCURSION SETS OF SIMULATORS WITH FUNCTIONAL OUTPUTS
Lucas Brunel, Mathieu Balesdent, Loïc Brevault, Rodolphe Le Riche, Bruno Sudret
- U 21099** ADDRESSING UNCERTAINTIES IN REAL-TIME CONTROL SYSTEMS WITH THE HELP OF STOCHASTIC POLYNOMIAL CHAOS EXPANSIONS
Johannes von Keler, Christoph Mark, Paolo Pazzaglia, Kevin Schmidt, Melanie Gallant, Laura Beermann, Bruno Sudret
- U 21196** EFFICIENT GLOBAL SENSITIVITY ANALYSIS FOR HIGH-DIMENSIONAL OUTPUTS HARNESSING INTER-OUTPUT DEPENDENCY
Wenjun Jiang, Zihao Song, Jize Zhang
- U 21285** A KERNEL-BASED SURROGATE MODEL FOR THE UNCERTAINTY QUANTIFICATION IN DEBRIS FLOW SIMULATIONS
Damiano Pasetto, Eleonora Spricigo, Deependra Kumar, Mario Putti, Antonia Larese

UNCECOMP MS 1 - III
UNCERTAINTY QUANTIFICATION, RELIABILITY, AND
SENSITIVITY ANALYSIS UNDER LIMITED DATA

Monday
14:30 - 16:30

Salon des Roses A

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

- U 21353** BAYESIAN ROBUST DESIGN OPTIMIZATION: AN EXTREME VALUE APPROACH
Augustin Persoons, Pascal Lafon, David Moens
- U 21556** A WORKFLOW FOR POLYMORPHIC UNCERTAINTY QUANTIFICATION USING PYTHON AND LS-OPT
Zubin Trivedi, Navina Waschinsky, Karsten Keller, Tim Ricken
- U 21202** NUMERICAL STUDY OF DIFFERENT RISK MEASURES FOR RISK-AVERSE DECISION-MAKING
Marie Temple-Boyer, Guillaume Perrin, Vincent Chabridon, Julien Pelamatti, Emmanuel Rémy
- U 21401** UNCERTAINTY QUANTIFICATION OF DISPLACEMENT RESPONSE IN MORPHOLOGICALLY DISCRETISED TOPOLOGY-OPTIMIZED STRUCTURES WITH NODAL VARIATIONS
Clarence Guanzon, Qihan Wang, Wei Gao, Da Chen
- U 21272** OPTIMAL EXPERIMENTAL DESIGNS FOR FRACTURE TOUGHNESS TESTS UNDER UNCERTAINTIES AND LIMITED DATA
Anthony Quintin, Rudy Chocat, Tom Petit, Cécile Mattrand, Jean-Marc Bourinet

COMPDYN MS 15 - II
ADVANCED NUMERICAL METHODS FOR DYNAMIC ANALYSIS
OF PERIODIC STRUCTURES AND METAMATERIALS

Monday
14:30 - 16:30

Salon des Roses B

MS Organizers: *Jean-Mathieu Mencik, Denis Duhamel*

Chair: *Jean-Mathieu Mencik*

C 25307 **KEYNOTE:** DYNAMIC COMPUTATION OF LARGE FINITE TWO-DIMENSIONAL PERIODIC STRUCTURES MADE OF LINEAR ELASTIC MATERIALS
Denis Duhamel

C 25285 MODAL ANALYSIS OF A BISTABLE QUADRUPLEX TENSEGRITY MODULE
Murillo Santana, Joel Marthelot

C 25081 WAVE PROPAGATION AND COMPLETE BAND GAP FORMATION IN MIURA-ORI METABEAMS
Elisabetta Manconi, Marco Riboli, Alessandro Contini, Luca Collini

C 25080 A SEMI-ANALYTICAL APPROACH FOR ANALYZING WAVE SCATTERING BY GEOMETRICALLY NONLINEAR SCATTERERS IN 1D HOMOGENEOUS AND PERIODIC MEDIA
Régis Boukadia, Elke Deckers, Wim Desmet

C 25353 WAVE FINITE ELEMENT BASED PREDICTION OF THE VIBROACOUSTIC BEHAVIOR OF METAMATERIAL PIPES
Marie-Laure Gobert, Jean-Mathieu Mencik

UNCECOMP MS 12 - III
MULTISCALE AND MULTIPHYSICS MODELLING FOR COMPLEX
MATERIALS (MMCM 21)

Monday
14:30 - 16:30

Athena

MS Organizers: *Marco Pingaro, Patrizia Trovalusci, George Stefanou, Greta Ongaro, Marco Colatosti*

Chair: *Marco Pingaro*

U 21513 **KEYNOTE:** HIDDEN VARIABLES IN MULTISCALE COMPOSITE MATERIALS
Elena Cherkhev

U 21535 SIMULATION OF THE BENDING BEHAVIOR OF SHORT FIBER COMPOSITES USING RANDOM FIELDS BASED ON MICROSTRUCTURE
Panagiotis Gavallas, George Stefanou, Eleftherios Tsivolas

U 21484 MULTIPHYSICS MODELING OF GAS PERMEATION IN FLEXIBLE PIPES
Soheil Bazazzadeh, Angelos Mintzas, Jack Davis, Łukasz Figiel

U 21492 ELECTRO-CHEMO-HYDRO-MECHANICAL MODELING OF PROTON EXCHANGE MEMBRANE FOR WATER ELECTROLYSIS
Alberto Antonini, Yousef Heider, Giovanna Xotta, Valentina Salomoni, Fadi Aldakheel

U 22012 ACTIVE LEARNING ENHANCED STOCHASTIC SIZE-DEPENDENT DYNAMIC ANALYSIS OF THE PEROVSKITE SOLAR CELL
Luo Bo, Jize Zhang

U 21413 STOCHASTIC FINITE ELEMENT ANALYSIS OF CONCRETE BEAMS
Leontios Kotropoulos, George Stefanou

COMPDYN MS 67 - III
GLOBAL AND LOCAL BEHAVIOUR OF STEEL STRUCTURES UNDER
SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS

Monday
14:30 - 16:30

Nafsika A

MS Organizers: *Roberto Tartaglia, Alessando Pisapia, Aldo Milone*

Chair: *Aldo Milone*

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- C 25112** SEISMIC DESIGN RULES FOR LIGHTWEIGHT STEEL SYSTEMS IN NEXT EN1998-1-2
Luigi Fiorino, Raffaele Landolfo
- C 25370** SEISMIC PERFORMANCE OF LIGHTWEIGHT STEEL FRAMES IN MEDIUM DUCTILITY CLASS IN THE FRAMEWORK OF 2ND GENERATION EUROCODE
Alessandro Prota
- C 25241** THE SEISMIC RESPONSE OF MOMENT FRAME BUILDINGS CONSIDERING THE GRAVITY CONNECTION TYPE
Aran Naserpour, Ahmed Elkady
- C 25736** HIGH-CYCLE FATIGUE PERFORMANCE PREDICTION OF LASER CUT STEEL CONNECTIONS USING CONVOLUTIONAL NEURAL NETWORK
Hasan Olmez, Gabriele Zanon, Stefano Marelli, Tugberk Guner, Oreste Bursi, Marco Brugnolli, Mattia Vanin
- C 25927** SEISMIC BEHAVIOUR OF THE I-EXOS SYSTEM DESIGNED BY IH-MADE STRONG MIDDLE SECTIONS
William Leni, Konstantinos Skalomenos, Francesca Barbagallo, Shadiya Jamshiyas, Edoardo Marino
- C 25467** EXPERIMENTAL ANALYSIS AND FINITE ELEMENT DAMAGE MODELING OF CONCRETE-FILLED STEEL TUBES SUBJECTED TO PURE BENDING
Rosario Montuori, Elide Nastri, Vincenzo Piluso, Alessandro Pisapia, Paolo Todisco, Francesco Fabbrocino

COMPDYN TS 14 - III
NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS

Monday
14:30 - 16:30

Nafsika B

Chair: *Vagelis Plevris*

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- C 24939** A FAST, HIGH-ORDER, PARALLEL NUMERICAL METHODOLOGY FOR HYPERBOLIC PDES: APPLICATIONS TO ELASTODYNAMICS PROBLEMS IN ULTRASONIC NON-DESTRUCTIVE TESTING & SEISMIC WAVE PROPAGATION
Faisal Amlani
- C 25134** GRAPH NEURAL NETWORK-ENHANCED MODEL ORDER REDUCTION FOR COMPLEX GEOMETRIES
Victor Matray, Faisal Amlani, Frédéric Feyel, David Néron
- C 24563** NUMERICAL STUDY OF THE INSTALLATION OF PILES COMBINING THE ZIPPER AND CEL METHODS
Diaa Alkateeb, Jürgen Grabe
- C 25125** EXPLICIT BUCKLING ANALYSIS WITH 7-PARAMETER SHELL ELEMENTS
Anh-Khoa Chau, Michaël Brun, Pascal Ventura, Hamid Zahrouni, Michel Potier-Ferry
- C 27755** SYMBOLIC MATRIX STRUCTURAL ANALYSIS OF TRUSSES: STATIC AND DYNAMIC APPLICATIONS
Vagelis Plevris, Abdulaziz Almutairi, Usama Ebead
- C 24952** METHODOLOGY FOR THE DEVELOPMENT OF A VEHICLE-SPECIFIC MULTI-BODY DYNAMICS MODEL
Clio Vossou, Loukas Koutsoloukas, Dimitrios Koulocheris

- C 25282** DYNAMIC ANALYSIS OF CRACKED BEAMS UNDER MOVING LOADS USING A FORCE-BASED FINITE ELEMENT FORMULATION
Hugo Santos

COMPDYN MS 36 - I
ADVANCES IN LOW-FIDELITY MODELING FOR STRUCTURAL DYNAMICS

Monday
14:30 - 16:30

Nefeli A

MS Organizers: *Marco Gaetani d'Aragona, Raffaele De Risi, Flavia De Luca, Enrico Spacone*

Chair: *Raffaele De Risi*

- C 25908** AN IMPROVED REDUCED-ORDER MODEL TO ACCOUNT FOR TORSIONAL EFFECTS IN EXISTING INFILLED RC BUILDINGS
Marco Gaetani d'Aragona, Andrea Prota
- C 24753** COMPARING FRAGILITY FUNCTIONS DERIVED FROM SIMPLIFIED ANALYTICAL MODELS TO THOSE DEVELOPED WITH EMPIRICAL DATA FROM PAST EARTHQUAKES
Gerard O'Reilly, Al Mouayed Bellah Nafeh, Volkan Ozsarac, Vitor Silva
- C 25690** LOW-FIDELITY NONLINEAR MODEL FOR THE SEISMIC ANALYSIS OF STRUCTURE-SOIL-STRUCTURE INTERACTION
Felipe Vicencio, Christian Málaga-Chuquitaype
- C 25559** CALIBRATION OF MATERIAL MODEL FOR ANALYTICAL PUSHOVER-BASED ASSESSMENT OF SELF-CENTRING CONCENTRICALLY BRACED FRAMES
Borjan Petreski, Igor Gjorgjiev
- C 25556** AN OPEN-SOURCE TOOLKIT FOR SEISMIC VULNERABILITY ASSESSMENT
Al Mouayed Bellah Nafeh, Karim Aljawhari, Vitor Silva

COMPDYN TS 16 - I
PERFORMANCE-BASED EARTHQUAKE ENGINEERING

Monday
14:30 - 16:30

Nefeli B

Chair: *Stefano Pampanin*

- C 25961** **KEYNOTE:** TOWARDS AN INTEGRATED INTERDISCIPLINARY APPROACH FOR LARGE-SCALE MODELLING, SIMULATION AND MANAGEMENT OF NATURAL DISASTERS: A VIRTUAL CASE STUDY URBAN AREA
Stefano Pampanin, Salvatore Martino, Francesco Petrini, Elisa Tinti, Biagio Carboni, Michele Scarpiniti, Livio Pedone, Matteo Ferrarotti, Mattia Francioli, Giulia Angelucci, Simone Saquella, Michele Matteoni, Maria Eugenia Locchi, Daniela Piacentini, Fabrizio Mollaioli, Giuseppe Quaranta, Omar Alshawa, Maria Elena Di Renzo, Simone D'Amore, Giada Formichetti, Carlo Esposito, Gian Marco Marmoni, Stefano Rivellino, Francesco Troiani, Domenico Liberatore, Nazzareno Pierdicca
- C 24913** DYNAMIC ROCKING BEHAVIOR OF FREE-STANDING RIGID BODIES SUBJECTED TO EXTREME LOADINGS
Erick Zavala
- C 25489** SIMPLIFIED METHOD FOR MODELLING DIAGONALLY REINFORCED CONCRETE COUPLING BEAMS
Marina Krauze Thomaz, Giuseppe Lomiento, Alberto Cuevas
- C 25865** AXIAL LOAD RATIO (ALR) LIMIT OF THE SLENDER FLANGED RC SHEAR WALLS BUILT WITH HIGH-STRENGTH REBAR
Nilanjan Samanta, Kaustubh Dasgupta, Luigi Di-Sarno

- C 25751** IMPLEMENTATION OF CONDITIONAL MEAN SPECTRUM FOR SEISMIC DESIGN IN WESTERN CANADA: CHALLENGES AND RECOMMENDATIONS

Mohammadreza Salek Faramarzi, Vahid Sadeghian, Farrokh Fazileh, Reza Fathi-Fazl

COMPDYN MS 46 - II
RECENT ADVANCES IN MULTI-RISK ASSESSMENT OF EXISTING CONSTRUCTIONS HAVING ALSO HISTORICAL VALUE

Monday
14:30 - 16:30

Rotisserie

MS Organizers: *Silvia Caprili, Michele D'Amato, Federica Del Carlo, Roselena Sulla*

Chair: *Federica Del Carlo*

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- C 25795** FLOOD RISK THROUGH A NETWORK LENS: INTEGRATING ROAD-NETWORK PROPERTIES IN VULNERABILITY ASSESSMENTS
Federica Del Carlo, Diego Altafini, Camilla Pezzica
- C 25127** SEISMIC RISK ASSESSMENT OF EXISTING MASONRY BUILDINGS: A COMPARISON BETWEEN DIFFERENT METHODS
Roselena Sulla, Annarita Palmiotta, Michele D'Amato, Rosario Gigliotti
- C 25470** EMPIRICAL PREDICTIVE MODELS FOR THE ESTIMATION OF ECONOMICAL LOSSES AFTER SEISMIC EVENTS
Michele Morici, Laura Gioiella, Andrea Dall'Asta
- C 24774** FINITE ELEMENT MODELING FOR SEISMIC ASSESSMENT OF EXISTING MASONRY CHURCHES – PART II: LOCAL ANALYSES
Antonella Ranaldo, Anna Lo Monaco, Michele D'Amato, Rosario Gigliotti, Marius Mosoarca
- C 25113** SEISMIC RISK ASSESSMENT OF MASONRY BUILDINGS: INFLUENCE OF STRUCTURAL KNOWLEDGE ON FRAGILITY CURVES
Matteo Tatangelo, Lorenzo Audisio, Michele D'Amato, Rosario Gigliotti
- C 25162** COMPLETION CRITERIA FOR DERIVATION OF MACROSEISMIC FRAGILITY CURVES OF EXISTING BUILDINGS
Lorenzo Audisio, Matteo Tatangelo, Michele D'Amato, Rosario Gigliotti

COMPDYN MS 19 - II
RECENT ADVANCES IN RISK-INFORMED PRIORITISATION AND ASSESSMENT OF EXISTING BRIDGES

Monday
14:30 - 16:30

Alpha

MS Organizers: *Andrea Nettis, Sergio Ruggieri, Andrea Meoni, Agnese Natali, Mariano Angelo Zanini*

Chair: *Sergio Ruggieri*

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- C 26105** **KEYNOTE:** TOWARDS LOSS-BASED SEISMIC DESIGN FOR BRIDGES: ACCURACY OF SIMPLIFIED STRATEGIES FOR LOSS ASSESSMENT
Andrea Nettis, Roberto Gentile, Domenico Raffaele, Giuseppina Uva
- C 24871** MACHINE LEARNING-BASED DAMAGE IDENTIFICATION FOR BRIDGES: METHODOLOGY AND APPLICATION TO THE KW51 BRIDGE
Yuqing Qiu, Bilal Ahmed, Diab Abueidda, Mostafa Mobasher
- C 25581** SEMI-AUTOMATIC POINT CLOUD PROCESSING FOR DIGITAL TWINNING OF BRIDGES: APPLICATION TO A MASONRY ARCH BRIDGE FOR BIM IMPLEMENTATION AND FE MODELING
Pasquale Guarino, Andrea Meoni, Enrique García-Macías, Matteo Castellani, Fabio Antonini, Filippo Ubertini

- C 25818** MULTI-CRITERIA COMPARATIVE ASSESSMENT OF SEISMIC RETROFITTING INTERVENTIONS OF AN OVERPASS RC BRIDGE CONSIDERING ENVIRONMENTAL IMPACT

Ataklti Gebrehiwet Gebrekidan, Nicola Scattarreggia, Martina Cogliano, Ricardo Monteiro

- C 25600** AUTOMATED DETECTION AND EVALUATION OF STRUCTURAL DEFECTS FROM BRIDGE VISUAL INSPECTIONS USING AI-BASED SEGMENTATION TECHNIQUES AND UAV PHOTOGRAMMETRY

Matteo Castellani, Andrea Meoni, Enrique García-Macías, Fabio Antonini, Filippo Ubertini

COMPDYN MS 11 - I

DEVELOPMENTS IN COMPUTATIONAL TOOLS FOR SEISMIC RISK MITIGATION

Monday
14:30 - 16:30

Gamma

MS Organizers: Davit Shahnazaryan, Volkan Ozsarac, Gerard J. O'Reilly

Chair: Davit Shahnazaryan

- C 24990** A FRAMEWORK FOR ENHANCING SEISMIC VULNERABILITY MODELING THROUGH SIMULATED DESIGN

Volkan Ozsarac, Gerard J. O'Reilly, Xavier Romão

- C 24960** A SAMPLING METHODOLOGY FOR ACCOUNTING MULTI-SOURCE DATA IN SEISMIC REGIONAL FRAGILITY OF EXISTING RC BUILDINGS

Sergio Ruggieri, Mirko Calò, Andrea Nettis, Giuseppina Uva

- C 25664** CALIBRATION OF A DAMPING LAW TO PREDICT PROBABILISTIC SEISMIC CAPACITY BY NONLINEAR STATIC ANALYSIS

Francesca Barbagallo, Erika Licciardello, **Edoardo Michele Marino**, Claudia Strano

- C 25992** ENABLING LARGE-SCALE QUANTITATIVE CLIMATE RISK ASSESSMENTS THROUGH GENERATIVE AI AND CLOUD COMPUTING

Jonathan Ciurlanti, Sean Merrifield, Filippo Giunta, Edwin van der Ven, Steven Gavrilovic

- C 25284** INCORPORATING SPATIAL CORRELATION IN PROBABILISTIC LOSS ASSESSMENT: AN IMPROVED CONVOLUTION-BASED METHOD WITH A CASE STUDY

Onur Ulku, Ufuk Yazgan, Sinan Akkar

- C 25341** PREDICTING AND VALIDATING BUILDING RESPONSE TO INDUCED SEISMICITY FROM GEOTHERMAL OPERATIONS

Sonja Cebulj, Francesca Taddei, Gerhard Müller

COMPDYN MS 28 - I

NEW STRATEGIES IN COMPUTATIONAL MODELLING OF SUSTAINABLE CONSTRUCTIONS

Monday
14:30 - 16:30

Epsilon

MS Organizers: Marco Simoncelli, Flavio Stochino, Marco Zucca, Pietro Crespi, Enrica Vecchi

Chair: Marco Simoncelli

- C 24499** DEFORMABILITY OF STEEL-CONCRETE COMPOSITE SLABS

Marco Simoncelli

- C 24492** ON THE MULTIDISCIPLINARY APPROACH FOR THE EVALUATION OF THE STRUCTURAL BEHAVIOUR OF HISTORIC CONSTRUCTIONS

Marco Zucca, Manuela Scamardo, Emanuele Reccia, Enrica Vecchi, Valentina Pintus, Flavio Stochino

- C 24811** TENSILE BEHAVIOR OF LINEAR FASTENING SYSTEMS IN MASONRY STRUCTURES

Pietro Crespi, Manuela Scamardo, Sara Cattaneo

DAY 2

MONDAY 16 JUNE

C 25421 A SPRING MODEL FOR SIMULATING THE CRACK FORMATION PROCESS IN BRITTLE-MATRIX COMPOSITE SYSTEMS SUBJECTED TO TENSILE ACTIONS
Enzo Martinelli, Bruno Paolillo, Marco Pepe

C 24910 NUMERICAL CHARACTERIZATION OF THE TENSILE STRENGTH OF CONCRETES WITH RECYCLED CERAMIC SANITARY AGGREGATES AND REINFORCED WITH POLYPROPYLENE AND STEEL FIBERS
Marcelo Ojeda, Carlos Benedetty, Luis Bedriñana

UNCECOMP MS 16 - II
MULTI-FIDELITY INFORMATION MANAGEMENT TO MITIGATE HIGH-FIDELITY DATA SCARCITY IN COMPUTATIONAL SCIENCE AND ENGINEERING

Monday
14:30 - 16:30

Room A

MS Organizers: *Gianluca Geraci, Daniele E. Schiavazzi*

Chair: *Daniele E. Schiavazzi*

U 21148 STRATIFIED SAMPLING BASED ON NONLINEAR DIMENSIONALITY REDUCTION FOR MULTI-FIDELITY ESTIMATORS
Andrea Zanoni, Gianluca Geraci, Daniele Schiavazzi

U 21190 ENERGETIC VARIATIONAL NEURAL NETWORK DISCRETIZATIONS OF GRADIENT FLOWS
Zhiliang Xu, Yiwei Wang, Chun Liu

U 21120 MULTIFIDELITY BAYESIAN OPTIMIZATION FOR STEADY-STATE PREDICTIONS USING GYROKINETIC SIMULATIONS OF PLASMA TURBULENCE
Pieterjan Robbe, Pablo Rodriguez-Fernandez, Aaron Ho, Christopher Holland, Bert Debusschere

U 21318 HYPER-DIFFERENTIAL SENSITIVITY ANALYSIS WITH RESPECT TO MODEL DISCREPANCY
Bart van Bloemen Waanders, Joseph Hart

COMPDYN TS 3
BRIDGE DYNAMICS

Monday
14:30 - 16:30

Room B

Chair: *Andreas Stollwitzer*

C 25013 DEVELOPING AN EXPERIMENT-BASED HOLISTIC MODEL FOR CONSIDERING TRACK-BRIDGE INTERACTION EFFECTS IN BALLASTED TRACKS
Andreas Stollwitzer, Samuel Loidl, Lara Bettinelli, Josef Fink

C 25657 DYNAMIC MONITORING OF BRIDGES: TRADITIONAL VS VIDEO-BASED APPROACHES
Muneer Ahmed, Pietro Meriggi, Stefano De Santis, Gianmarco de Felice

C 25362 3D NUMERICAL SIMULATION OF CURVED BRIDGES WITH POLYNOMIAL FRICTION PENDULUM ISOLATORS UNDER EARTHQUAKES
Tzu-Ying Lee, Lyan-Ywan Lu, Wei-Lin Ho, Tzu-Chung Chen

C 26268 USING VIBRATION MEASURES TO ESTIMATE FATIGUE STRESS HISTORIES
Alessandro Menghini, Bowen Meng, John Leander

C 26001 IMPROVED MULTIPLICATION FACTORS FOR SIMPLIFIED ANALYSIS OF VERTICAL VIBRATIONS IN FOOTBRIDGES UNDER CROWD LOADS
Ghita Eslami Varzaneh, Federico Ponsi, Veronica Dallari, Elisa Bassoli, Loris Vincenzi

- C 26084** EVALUATING THE STRUCTURAL INTEGRITY OF BRIDGE PIERS UNDER IMPACT AND CYCLIC LOADING: A COMPUTATIONAL AND EXPERIMENTAL APPROACH

Surya Dev Singh, Denise-Penelope Kontoni, Pradyut Anand, Sunil Kumar Yadav

- C 24902** EFFECT OF SPATIAL VARIABILITY OF SEISMIC GROUND MOTION ON NON LINEAR BRIDGE DYNAMICS, USING NUMERICAL METHODS

Issam Ameziane, Hanane Moulay Ali, Oum El Khayat Moustachi

**UNCECOMP MS 5
UNCERTAINTY PROPAGATION AND PROBABILISTIC PERFORMANCE
ASSESSMENT IN ENGINEERING STRUCTURES**

**Monday
14:30 - 16:30**

Room C

MS Organizers: *Meng-Ze Lyu, De-Cheng Feng, Jian-Bing Chen, Michael Beer*

Chair: *Sha Wei*

- U 21363** INVESTIGATION OF THE KERNEL REGRESSION METHOD IN RELIABILITY SENSITIVITY ANALYSIS OF UNCERTAIN STRUCTURAL DYNAMIC SYSTEMS

Oindrila Kanjilal, Iason Papaioannou, Daniel Straub

- U 21042** DYNAMIC ANALYSIS OF A FLUID-CONVEYING PIPE SUBJECT TO ELASTIC SUPPORTS WITH UNCERTAIN MATERIAL PARAMETERS

Xu-Long Li, Sha Wei, Hu Ding, Guang Meng, Li-Qun Chen

- U 21095** PROPAGATING ML MODEL UNCERTAINTIES IN OFFSHORE WIND TURBINE FATIGUE DAMAGE ACCUMULATION

Francisco de Nolasco Santos, Nandar Hlaing, Wout Weijtjens, Christof Devriendt

- U 21376** DATA DRIVEN METHODS FOR UNCERTAINTY PROPAGATION IN PREDICTING BRITTLE RESPONSES OF REINFORCED CONCRETE STRUCTURES

Afaq Ahmad, Vagelis Plevris

**COMPDYN MS 4
ADVANCES IN VIBRATION CONTROL OF OFFSHORE WIND TURBINE
STRUCTURES**

**Monday
14:30 - 16:30**

Room D

MS Organizers: *Konstantinos A. Kapasakalis, Georgios I. Florakis*

Chair: *Konstantinos A. Kapasakalis*

- C 25450** ENHANCED SEISMIC RESILIENCE OF WIND TURBINES USING ADVANCED VIBRATION MITIGATION STRATEGIES

Konstantinos Kapasakalis, Georgios Florakis, Evangelos Sapountzakis

- C 25507** A NEW HOURGLASS LATTICE TRANSITION PIECE TO MITIGATE THE SEISMIC RESPONSE OF OFFSHORE WIND TURBINES

Yucheng Peng, Alessandro Tombari

- C 25267** IMPROVING DIGITAL TWIN USING AI & SCADA

Briac Malbois Le Borgne, Filippo Gatti, Rodrigue Desmorat, Matteo Capaldo

- C 25435** PERFORMANCE ENHANCEMENT OF FLOATING OFFSHORE WIND TURBINES WITH TUNED LIQUID COLUMN DAMPER: A NUMERICAL STUDY

Amiya Pandit, Michael O'Shea

DAY 2

MONDAY 16 JUNE

C 25851 INTEGRATED SIZING AND VIBRATION CONTROL OF MONOPILE IEA-15MW BENCHMARK OFFSHORE WIND TURBINE

Hisham Tariq, George Mylonakis, Muhammad Al-Shudaifat, Jean-Christophe Gilloteaux, Agathoklis Giaralis

COMPDYN MS 5
MACHINE LEARNING APPLICATIONS IN EARTHQUAKE ENGINEERING

Monday
14:30 - 16:30

VIP Room

MS Organizers: *Konstantinos G. Megalooikonomou, Grigorios N. Beligiannis*

Chair: *Konstantinos G. Megalooikonomou*

C 24626 RANDOM FORESTS SUPERVISED MACHINE LEARNING FOR CLASSIFYING FAILURE MODES IN RC COLUMNS USING BASIC STRUCTURAL INFORMATION

Konstantinos Megalooikonomou, Grigorios N. Beligiannis

C 24583 A SPATIO-VECTORIAL GRAPH NEURAL NETWORK MODEL FOR PREDICTING EARTHQUAKE INTENSITY MEASURES (SV-MEIM) AT UNSENSORED LOCATIONS

Ethan Ray, Jawad Fayaz

C 25836 NOVEL DEEP LEARNING FRAMEWORK FOR SEISMIC RESILIENCE ASSESSMENT OF STRUCTURES USING MONTE CARLO SIMULATION AND LARGE-SCALE DATA ANALYSIS

Mohamed Nouredin

C 25934 PHYSICS-INFORMED MACHINE LEARNING MODEL FOR PREDICTING THE DISPLACEMENT DEMANDS OF STRUCTURES: INSIGHTS FROM THE 2023 KAHRAMANMARAŞ EARTHQUAKES

Furkan Çalim, Ahmet Güllü, Ercan Yüksel

C 26203 A MACHINE LEARNING APPROACH FOR GROUND RESPONSE ANALYSIS

Leonidas Alexandros Kouris, Kyriaki Gkoktsi, Konstantinos I. Gkatzogias, Daniel A. Pohoryles, Georgios Tsionis, Elisabeth Krausmann

C 26931 PREDICTING POST EARTHQUAKE DEBRIS OF BUILDINGS USING MACHINE LEARNING TECHNIQUES

Amir Reza Elahi, Alessandro Cardoni, Gian Paolo Cimellaro

C 25715 ELASTIC RESPONSE AND PERMANENT SETTLEMENT PREDICTION OF A REDUCED SCALE HIGH SPEED RAILWAY TRACK PORTION USING MACHINE LEARNING

Ali Al Shaer, Ali Rammal, Chantal Hajjar, Denis Duhamel

16:30-17:00

Coffee Break

UNCECOMP MS 7 - III
SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION:
NEW TRENDS

Monday
17:00 - 19:00

Delphi

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

Chair: *Bruno Sudret*

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- U 21456** A K-NN-BASED ACTIVE LEARNING SURROGATE MODELING TECHNIQUE FOR THE SIMULATION OF COMPOSITE LAMINATED MATERIALS
Georgios Soimoiris, Boyang Chen, Vahid Yaghoubi Nasrabadi
- U 21315** ACTIVE LEARNING FOR EXCURSION SET ESTIMATION: A SUR ADAPTATION OF BICHON AND A VECTORIAL EXTENSION OF RANJAN CRITERIA
*Miguel Munoz **Zuniga**, Clément Duhamel, Céline Helbert, Clémentine Prieur, Delphine Sinoquet*
- U 21444** COMBINING NEURAL NETWORKS WITH GAUSSIAN PROCESSES FOR ROBUST AND INTERPRETABLE PREDICTION
Amalia Macali, Georgios Soimoiris, Nathan Eskue, Vahid Yaghoubi Nasrabadi
- U 21209** BAYESIAN CALIBRATION USING SURROGATE MODELS FOR HYBRID PROGNOSTICS OF STEAM GENERATORS CLOGGING
Edgar Jaber, Vincent Chabridon, Emmanuel Remy, Merlin Keller, Mathilde Mougeot, Didier Lucor
- U 21294** BOUNDARY-CONSTRAINED GAUSSIAN PROCESSES FOR THE CALCULATION OF VAPOR-LIQUID-EQUILIBRIUM SURFACES
Leonard Schnelting, Ulrich Römer, Gabriele Raabe
- U 20950** GENERAL SENSITIVITY INDICES FOR HILBERT SPACE-VALUED RANDOM VARIABLES
*Claude Brayer, Reda Chhaibi, Fabrice Gamboa, **Leonid Lopez***

UNCECOMP MS 1 - IV
UNCERTAINTY QUANTIFICATION, RELIABILITY, AND
SENSITIVITY ANALYSIS UNDER LIMITED DATA

Monday
17:00 - 19:00

Salon des Roses A

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

Chair: *Augustin Persoons*

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- U 21024** TRACTABLE BAYESIAN INVERSE UNCERTAINTY QUANTIFICATION FOR AUTOMOTIVE PASSIVE SAFETY
Maternus Herold, Jonas Jehle, Matthias Gerdts
- U 21215** IMPROVING SEQUENTIAL MIXED-EFFECTS CALIBRATION FOR COMPLEX CONSTITUTIVE MODEL
Clément Laboulfie, Matthias De Lozzo, Ludovic Barriere, Sebastien Bocquet
- U 21417** EFFICIENT CONFIDENCE BOUND ESTIMATION FOR A DYNAMIC COMPOSITE PLATE WITH EPISTEMIC UNCERTAINTIES USING NON-INTRUSIVE IMPRECISE STOCHASTIC SIMULATION
*Ewerton Grotti, Matteo Broggi, **Herbert Martins Gomes**, Michael Beer*
- U 21480** FRAGILITY ANALYSIS OF TRANSMISSION LINE STRUCTURES SUBJECTED TO TORNADIC WIND ACTIONS BASED ON MULTIFIDELITY METAMODELING
Felipe Macedo, Luis Costa, Henrique Kroetz, André Beck, Stefano Marelli, Bruno Sudret
- U 21505** LEVERAGING PHYSICS-INFORMED MODELS AND PRODUCTION DATA FOR QUALITY ASSESSMENT IN RESISTANCE SPOT WELDING
Miriam Dodd, Bouwe Verkens, Augustin Persoons, Matthias Faes, David Moens

COMPDYN MS 15 - III
ADVANCED NUMERICAL METHODS FOR DYNAMIC ANALYSIS
OF PERIODIC STRUCTURES AND METAMATERIALS

Monday
17:00 - 19:00

Salon des Roses B

MS Organizers: *Jean-Mathieu Mencik, Denis Duhamel*

Chair: *Jean-Mathieu Mencik, Denis Duhamel*

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- C 25463** DYNAMIC ELECTROACTIVE METAMATERIALS WITH FLEXOELECTRIC AND PIEZOELECTRIC MICROSTRUCTURES
Eduard Rohan, Ali Hosseinkhani, Robert Cimrman
- C 26026** SEMI-ANALYTICAL FINITE ELEMENT FORMULATION FOR WAVEGUIDES COUPLED TO ARRAYS OF RESONATORS
Stefano Mariani, Antonio Palermo, Alessandro Marzani
- C 25874** HIGH CONTRAST BIPHASIC MECHANICAL METAMATERIALS FOR THE MITIGATION OF ELASTIC WAVE PROPAGATION
Meng Wang, Annamaria Pau, Marco Lepidi, Luigi Martirano
- C 25084** WAVE PROPAGATION AND SLOSHING INTERACTIONS IN STRUCTURES WITH PERIODIC LIQUID DAMPERS
Filippo Dall'Olio, Elisabetta Manconi, Alireza Ghazizadeh Ahsaei, Emiliano Rustighi
- C 25380** MODEL REDUCTION STRATEGY FOR THE DYNAMIC ANALYSIS OF PLATES WITH A NEARLY PERIODIC ARRAY OF CIRCULAR ACOUSTIC BLACK HOLES
Vivien Denis, Jean-Mathieu Mencik
- C 25724** A GENERALIZED FORMULATION OF THE WAVE FINITE ELEMENT METHOD FOR PERIODIC STRUCTURES WITH ANOMALOUS SUBSTRUCTURES
Tien Hoang, Denis Duhamel, Gilles Foret
- C 26196** REFINED BOUNDARY CONDITIONS FOR NONLOCAL MICROPOLAR WAVE PROPAGATION IN LAYERED AND HALF-SPACE
Santanu Manna, Manasa Bhat

COMPDYN TS 20 - I
SEISMIC RISK AND RELIABILITY ANALYSIS

Monday
17:00 - 19:00

Athena

Chair: *Timothy Sullivan*

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- C 24567** **KEYNOTE:** HIGHLIGHTING THE NEED FOR IMPROVED CONSIDERATION OF RISK IN THE DEFINITION OF SEISMIC DESIGN CRITERIA
Timothy Sullivan
- C 24655** SEISMIC VULNERABILITY ASSESSMENT OF SOCIAL HOUSING UNITS IN CÁDIZ (SPAIN): EXPOSURE DATABASE
Daniel Bilbao-Marcos, Juan Romero-Sánchez, Sara Dianez-Santos, Víctor Schmidt, Miguel Pellicer-García, Janira Irizarry, Albert Macau-Roig, Beatriz Zapico-Blanco
- C 24672** RISK-TARGETED GROUND MOTIONS: INSIGHTS FROM A CASE STUDY APPLICATION ON ITALIAN SITES
Georgios Baltzopoulos, Antonio Grella, Iunio Iervolino
- C 25143** SEISMIC FRAGILITY ASSESSMENT FOR WELDED STEEL MOMENT-RESISTING FRAMES UNDER ATMOSPHERIC CORROSION DETERIORATION
Devang Bipinchandra Lad, Fabio Freddi, Jayadip Ghosh

- C 25893** GROUND MOTION SEISMIC HAZARD ASSESSMENT FOR UPDATING THE SEISMIC LOADING PROVISIONS OF STRUCTURAL STANDARDS IN THE PHILIPPINES
Rhommel Grutas, Justine Anne Duka, Miguel Antonio Magandi, Jhon Philip Camayang

COMPDYN TS 8
DYNAMICS OF STEEL STRUCTURES

Monday
17:00 - 19:00

Nafsika A

Chair: *Ahmed Elghazouli*

- C 24907** SEISMIC RESPONSE OF HYBRID STEEL-CONCRETE MODULAR BUILDINGS
Peifeng Tian, Chen Wang, Tak-Ming Chan, Ahmed Elghazouli
- C 25870** SEISMIC PERFORMANCE AND THEORETICAL MODELING OF SELF-CENTERING HYBRID FRAMES WITH CFST COLUMNS
Md Mehedi Hasan, Zhong Tao, Zhang Pinle, Yan Tao, Wahab Abdul Ghafar, Xian Leyong
- C 24896** DEVELOPMENT OF HYBRID SIMULATION COMPUTATIONAL MODEL FOR STEEL ECCENTRICALLY BRACED FRAMES WITH UNBRACED I-SHAPED LINK BEAMS
Vala Mazrouei, Ali Imanpour, Hossein Daneshvar
- C 25400** A COMPREHENSIVE COMPARISON BETWEEN MULTISTORY MODULAR STEEL STRUCTURES WITH CONVENTIONAL PROTOTYPES WITH BRACED FRAME AND SHEAR WALL LATERAL SYSTEMS
Mustafa Mahamid, Mahmood Jabareen
- C 25873** ANALYTICAL STUDY ON DYNAMIC CYCLIC LOCAL BUCKLING BEHAVIOR AND SEISMIC PERFORMANCE OF COLD-FORMED SQUARE STEEL TUBE COLUMNS
Junichiro Tatematsu, Kosuke Sato
- C 24812** SEISMIC RESPONSE OF STEEL FRAMES RETROFITTED AGAINST PROGRESSIVE COLLAPSE
Luca Possidente, Giulia Giuliani, Fabio Freddi
- C 26122** EVALUATING THE SEISMIC BEHAVIOR OF SUSPENDED HIGH-RISE STEEL BUILDINGS INCLUDING END SHEAR WALLS
Denise-Penelope Kontoni, Mehran Akhavan Salmassi
- C 25885** CYCLIC BEHAVIOR OF STAINLESS STEEL BEAM-COLUMN JOINTS: NONLINEAR FE PARAMETRIC STUDY
Shafayat Bin Ali, George Kamaris, Edmond Muho, George Papagiannopoulos

UNCECOMP MS 3
METHODOLOGICAL DEVELOPMENTS AND APPLICATIONS OF GLOBAL SENSITIVITY ANALYSIS IN SCIENCE AND ENGINEERING

Monday
17:00 - 19:00

Nafsika B

MS Organizers: *Gian Marco Melito, Sebastian Brandstätter, Friederike Schäfer, Wouter Huberts*

Chair: *Gian Marco Melito*

- U 21415** INVESTIGATING THE ROLE OF CLINICALLY RELEVANT GEOMETRICAL AORTIC PARAMETERS THROUGH SENSITIVITY ANALYSIS OF HEALTHY AORTIC MORPHOLOGIES
Gian Marco Melito, Domagoj Bošnjak, Richard Schussnig, Thomas-Peter Fries, Günter Brenn, Katrin Ellermann
- U 21486** SEX AS A VARIABLE DURING SENSITIVITY ANALYSIS IN BIOMECHANICAL MODELS
Friederike Schäfer

DAY 2

MONDAY 16 JUNE

- U 21289** MULTIVARIATE SENSITIVITY ANALYSIS IN ELECTRIC MACHINE DESIGN WITH AN ADAPTIVE MULTI-OUTPUT POLYNOMIAL CHAOS EXPANSION METHOD
Eric Diehl, Herbert De Gersem, Dimitrios Loukrezis
- U 21111** LEVERAGING THE DIGITAL TAPESTRY: USING COHORT EMULATION TO AID GLOBAL SENSITIVITY ANALYSIS FOR PERSONALISED CARDIAC DIGITAL TWINS
Christopher Lanyon, Cristobal Rodero, Abdul Qayyum, Steven Niederer, Richard Wilkinson
- U 21140** OPTIMAL INPUT DESIGN FOR PARAMETER IDENTIFICATION OF SYSTEMS
Nicola Henkelmann, Kevin Schmidt
- U 21251** A COMPARISON OF MOMENT-BASED AND MOMENT-INDEPENDENT SENSITIVITY INDICES FOR PULSE-WAVE PROPAGATION HEMODYNAMIC MODELS
Mitchel Colebank
- U 21483** PREDICTING BUILDING OPERATIONAL ENERGY UNDER MATERIAL DEGRADATION AND CLIMATE UNCERTAINTY: A SENSITIVITY ANALYSIS
Anna Maria Koniari, Charalampos Andriotis, Simona Bianchi, Pablo Morato, Seyran Khademi, Mauro Overend
- U 21472** KERNEL-BASED SENSITIVITY INDICES FOR DYNAMIC HAZARDS' MODELS UNDER SAFETY-OBJECTIVES
Matieyendou Lamboni

COMPDYN MS 36 - II
ADVANCES IN LOW-FIDELITY MODELING FOR STRUCTURAL DYNAMICS

Monday
17:00 - 19:00

Nefeli A

MS Organizers: *Marco Gaetani d'Aragona, Raffaele De Risi, Flavia De Luca, Enrico Spacone*
Chair: *Marco Gaetani d'Aragona*

- C 25408** AN UPDATED REDUCED ORDER MODEL FOR SIMULATING THE NON-LINEAR DYNAMIC RESPONSE OF REINFORCED CONCRETE FRAME STRUCTURES
Antonio Sberna, Fabio Di Trapani, Raffaele De Risi, Enrico Spacone
- C 25904** FRAGILITY CURVES FOR RETROFITTED RC BUILDINGS DESIGNED ACCORDING TO OBSOLETE SEISMIC CODES VIA STICK MODEL
Marco Gaetani d'Aragona, Maria Polese, Andrea Prota
- C 24868** THREE-DIMENSIONAL EARTHQUAKE-INDUCED COLLAPSE SIMULATION OF STEEL BUILDINGS WITH A NEW BEAM-COLUMN ELEMENT WITH SELECTIVE GRADIENT-INELASTICITY
Diego Isidoro Heredia Rosa, Albano de Castro e Sousa, Dimitrios Lignos
- C 26014** STUDY OF SPECTRAL MATCHING AND SPECTRAL SCALING METHODS ON SEISMIC DEMAND ESTIMATION OF RC BUILDINGS
Manish Sharma, Priyanshu Thumar, Jagajyoti Panda, Nishant Roy, MK Shrimali
- C 26017** INFLUENCE OF SOIL STRUCTURE INTERACTION ON SEISMIC PERFORMANCE ASSESSMENT OF LOW-RISE RC BUILDINGS IN HILLY REGION
Anubhav Kapur, Shubham Kumawat, Mohit Sharma, Jagajyoti Panda, SD Bharti

COMPDYN TS 16 - II
PERFORMANCE-BASED EARTHQUAKE ENGINEERING
Monday
17:00 - 19:00
Nefeli BChair: *Antonio Janevski*

- C 24968** THE EFFECT OF BUILDING HEIGHT ON THE SEISMIC FRAGILITY ASSESSMENT OF RC FRAMES SUBJECTED TO FLOOR-TO-FLOOR STRUCTURAL POUNDING
Maria Favvata, Effrosyni Tsiaga, Maria Flenga, Ioannis Kakaes
- C 25416** PUSHOVER-BASED SEISMIC DESIGN OF RC WALLS COUPLED BY SLABS WITHOUT COUPLING BEAMS
Antonio Janevski, Tatjana Isaković
- C 25917** SEISMIC RISK OF COMPLEX RESEARCH INFRASTRUCTURES - RECENT EARTHQUAKE ENGINEERING RESEARCH STUDIES AT CERN
Marco Andreini, Saverio La Mendola
- C 25943** NOVEL SCALAR SEISMIC INTENSITY MEASURES FOR ASSESSING THE PERFORMANCE OF STEEL AND REINFORCED CONCRETE STRUCTURES
Nicos Kalapodis, Edmond Muho, Dimitri Beskos
- C 25848** MODELING AND ANALYSIS OF STIFFNESS AND STRENGTH DEGRADATION IN SUBSTANDARD REINFORCED CONCRETE BEAM-COLUMN JOINTS UNDER CYCLIC LOADS
Brwa Hamah Saeed Hamah Ali, Kypros Pilakoutas, Baban Bapir
- C 25108** SEISMIC DAMAGE LIMIT STATE MODELS FOR CORRODED RC BUILDING FRAMES USING MACHINE LEARNING
M K Athul Nath, Needhi Kotoky

UNCECOMP MS 8
UNCERTAINTY QUANTIFICATION IN VIBRATION BASED MONITORING
AND STRUCTURAL DYNAMICS SIMULATIONS
Monday
17:00 - 19:00
RotisserieMS Organizers: *Eleni Chatzi, Manolis Chatzis, Vasilis Dertimanis, Geert Lombaert, Costas Papadimitriou*Chair: *Costas Papadimitriou*

- U 21526** COMBINING EXPERIMENTAL DATA AND NUMERICAL MODELING TO ANALYZE TRAIN-STRUCTURE INTERACTION ON THE HISTORIC SAN MICHELE BRIDGE (ITALY, 1889)
Lorenzo Ermolli, Michele Guerini, Charikleia Stoura, Rosalba Ferrari, Vasilis Dertimanis, Eleni Chatzi, Egidio Rizzi
- U 21227** OPTIMAL SENSOR PLACEMENT FOR VIBRATION MONITORING OF BRIDGE STRUCTURES
Daniele Giunta, Eugenio Chioccarelli, Eleni Chatzi
- U 21130** A GENERALIZED CONTACT POINT RESPONSE ESTIMATION VIA ON-BOARD SENSING
Ho Man Siu, Elias Dimitrakopoulos, Costas Papadimitriou
- U 21051** BRIDGE MODEL UPDATING USING MONITORED SEISMIC RESPONSES: INSIGHTS FROM A NUMERICAL PARAMETRIC STUDY
Pooria Mesbahi, Enrique García-Macías, Marco Breccolotti, Filippo Ubertini
- U 21204** DAMAGE IDENTIFICATION USING EXPERIMENTAL MODAL DATA THROUGH SPARSITY PROMOTING PRIORS
Divyansh Tyagi, Michael Döhler, Paul Winkler, Volkmar Zabel, Martin Weiser, Phaedon-Stelios Koutsourelakis, Philipp Benner, Jörg Unger

DAY 2

MONDAY 16 JUNE

U 21441 INDIRECT MODAL IDENTIFICATION AND UNCERTAINTY QUANTIFICATION FOR RAILWAY BRIDGES
Charikleia Stoura, Szymon Greś, Eleni Chatzi

U 22057 UPDATING DIGITAL TWINS SUBJECTED TO UNCERTAIN CORROSION CONDITIONS USING THE UNSCENTED KALMAN FILTER
Ioannis Prentzas, Spyridon Diamantopoulos, Alexandros Michailidis, Michalis Fragiadakis

COMPDYN MS 19 - III RECENT ADVANCES IN RISK-INFORMED PRIORITISATION AND ASSESSMENT OF EXISTING BRIDGES

Monday
17:00 - 18:00

Alpha

MS Organizers: *Andrea Nettis, Sergio Ruggieri, Andrea Meoni, Agnese Natali, Mariano Angelo Zanini*
Chair: *Agnese Natali*

C 26059 HYDROGEOLOGICAL RISK ASSESSMENT OF EXISTING BRIDGE PORTFOLIOS THROUGH AN INDEX-BASED APPROACH
Ludovico Alberico Grieco, Mattia Calò, Nicola Scattarreggia, Ricardo Monteiro, Fulvio Parisi

C 25204 MACHINE LEARNING BASED FRAMEWORK FOR PREDICTING PRESTRESSING FORCE REDUCTION IN PRESTRESSED REINFORCED CONCRETE BRIDGES
Mirko Calò, Sergio Ruggieri, Manuel Buitrago, Andrea Nettis, Jose Adam, Giuseppina Uva

C 26113 TRAFFIC-LOAD FRAGILITY ANALYSIS OF PRESTRESSED CONCRETE GIRDER BRIDGES CONSIDERING CORROSION OF POST-TENSIONING TENDONS
Alessandro Nettis, Andrea Nettis, Sergio Ruggieri, Giuseppina Uva

C 25332 CV-BASED CORROSION CLASSIFICATION TO IMPROVE FAST SEISMIC ASSESSMENT OF EXISTING RC BRIDGE PIERS
Vincenzo Mario Di Mucci, Angelo Cardellicchio, Andrea Nettis, Sergio Ruggieri, Vito Renò, Giuseppina Uva

COMPDYN MS 68 INTELLIGENT AND SOFT COMPUTING METHODS IN STRUCTURAL AND EARTHQUAKE ENGINEERING

Monday
18:00 - 19:00

Alpha

MS Organizers: *Vagelis Plevris, Afaq Ahmad, Mohamed El Amine Ben Seghier*
Chair: *Vagelis Plevris*

C 25312 ON THE USE OF DEEP REINFORCEMENT LEARNING FOR ONLINE MODEL UPDATING OF STRUCTURES WITH MULTIPLE UNCERTAIN PARAMETERS
Gianluca Bruno, Fabio Parisi, Sergio Ruggieri, Giuseppina Uva

C 25577 FROM PIXELS TO PERFORMANCE: DEEP LEARNING FOR CONCRETE STRUCTURAL HEALTH MONITORING
Afaq Ahmad, Vagelis Plevris, Mati Ullah

C 26186 DEEP LEARNING-BASED CONCRETE AGGREGATE SEGMENTATION AND ANALYSIS FOR FORENSIC APPLICATIONS
Mati Ullah, Vagelis Plevris, Afaq Ahmad

**COMPDYN MS 11 - II
DEVELOPMENTS IN COMPUTATIONAL TOOLS FOR SEISMIC RISK
MITIGATION**
**Monday
17:00 - 19:00**
Gamma

 MS Organizers: *Davit Shahnazaryan, Volkan Ozsarac, Gerard J. O'Reilly*

 Chair: *Volkan Ozsarac*
C 25126 DJURA GROUND MOTION RECORD SELECTOR: A SOFTWARE SOLUTION FOR EARTHQUAKE ENGINEERING

Davit Shahnazaryan, Volkan Ozsarac, Gerard J. O'Reilly
C 25186 A NEW GLOBAL DATABASE OF SEISMIC VULNERABILITY MODELS FOR IMPROVED REGIONAL RISK ASSESSMENTS

Karim Aljawhari, Al Mouayed Bellah Nafeh, Vitor Silva
C 26236 OPENVULNERABILITY: AN INTERACTIVE WEB PLATFORM TO SELECT AND SCORE PHYSICAL IMPACT MODELS

Roberto Gentile
C 25302 THE ROLE OF STORY LOSS FUNCTIONS IN REGIONAL SEISMIC VULNERABILITY MODELLING AND RISK ASSESSMENT

Davit Shahnazaryan, Volkan Ozsarac, Gerard J. O'Reilly
C 25389 SIMULATION OF SEISMIC PERFORMANCE OF RETROFITTED MASONRY BUILDING STOCK

Neja Fazarinc, Matjaž Dolšek
C 27439 UPDATING OF BRIDGE FRAGILITIES USING SEISMIC RESPONSE MEASUREMENTS

Spyridon Diamantopoulos, Ioannis Prentzas, Michalis Fragiadakis
**COMPDYN MS 28 - II
NEW STRATEGIES IN COMPUTATIONAL MODELLING OF SUSTAINABLE
CONSTRUCTIONS**
**Monday
17:00 - 19:00**
Epsilon

 MS Organizers: *Marco Simoncelli, Flavio Stochino, Marco Zucca, Pietro Crespi, Enrica Vecchi*

 Chair: *Marco Zucca*
C 24944 MECHANICAL PERFORMANCE OF COMPOSITE SLABS WITH RECYCLED CONCRETE AGGREGATES: THE SARCOS PROJECT

Flavio Stochino, Alireza Alibeigibeni, Marco Zucca, Monica Valdes, Giovanna Concu, Marta Saccone, Marco Simoncelli, Marco Andrea Pisani, Claudio Bernuzzi
C 24578 EVALUATION OF THE EQUIVALENT DAMPING RATIO OF SEISMICALLY RETROFITTED HISTORIC CHURCHES WITH DISSIPATIVE ROOF STRUCTURES

Nicola Longarini, Pietro Crespi, Luigi Cabras
C 24500 HOUSE-RACK: A MODULAR SYSTEM FOR SUSTAINABLE CONSTRUCTIONS

Marco Simoncelli, Claudio Bernuzzi, Alice Lucidi
C 24535 SUSTAINABLE STRUCTURAL APPLICATIONS: INTEGRATED ANALYSIS OF FLAX FIBER COMPOSITE MATERIALS

Marta Saccone, Flavio Stochino, Monica Valdes

DAY 2

MONDAY 16 JUNE

COMPDYN TS 9 GEOTECHNICAL EARTHQUAKE ENGINEERING

Monday
17:00 - 19:00

Room A

Chair: *Atilla Ansal*

- C 26035** DETERMINATION OF SPECTRAL AMPLIFICATION FACTORS BY A SIMULATION BASED METHOD FOR SOUTH COAST SOILS OF ISTANBUL
Nazife Özge Fercan, Atilla Ansal
- C 25441** SITE RESPONSE OF CHILEAN GROUND MOTION STATIONS DURING SUBDUCTION EARTHQUAKES
Miguel Contreras, Carlos Cáceres, Victor Contreras
- C 25938** EFFECTS OF CONFIGURATION TYPE OF GEOTECHNICAL SEISMIC ISOLATION WITH GEOSYNTHETICS ON SEISMIC PERFORMANCE OF LOW RISE BUILDINGS
Murat Calikoglu, Ayşe Edinçliler
- C 25805** SEISMIC RISK OF SLOPES CONSIDERING UNCERTAINTIES IN GEOTECHNICAL VARIABLES
Ana Maria Zapata-Franco, Yeudy Felipe Vargas-Alzate
- C 26854** ASSESSING THE IMPACT OF VERTICAL ACCELERATION ON SITE RESPONSE: A CASE STUDY FROM ISTANBUL USING THE KAHRAMANMARAS EARTHQUAKE DATA
Shima Shamekhi, Atilla Ansal
- C 25235** 3D NUMERICAL INVESTIGATION OF THE SEISMIC RESPONSE OF A SHALLOW TUNNEL CROSSING A TOPOGRAPHICALLY COMPLEX AREA
Annamaria di Lernia, Gaetano Falcone, Leonardo Todisco, Gaetano Elia
- C 25793** EFFECTIVENESS OF GEOGRID REINFORCEMENT FOUNDATION ON SEISMIC PERFORMANCE OF RETAINING WALLS: A NUMERICAL STUDY
Ayşe Edinçliler, Bilge Sultan Demirtaş

COMPDYN MS 49 ADVANCEMENTS IN SEISMIC VULNERABILITY ASSESSMENT: TOWARD AN INTEGRATED DISASTER RISK GOVERNANCE

Monday
17:00 - 19:00

Room B

MS Organizers: *Maria Zucconi, Carlo Del Gaudio, Barbara Ferracuti, Gerardo Verderame*

Chair: *Maria Zucconi*

- C 25876** INTEGRATING MULTI-HAZARD IMPACTS: A SEQUENTIAL ASSESSMENT OF VOLCANIC ASHFALL AND EARTHQUAKE EFFECTS ON BUILDING VULNERABILITY
Carlo Del Gaudio, Francesca Linda Perelli, Daniela De Gregorio, Gerardo Mario Verderame, Giulio Zuccaro
- C 25883** CENTRAL ITALY EARTHQUAKE: A STATISTICAL ANALYSIS OF THE OBSERVED DAMAGE DATABASE
Maria Zucconi, Carmelo Vairo, Hadi Monsef Ahmadi, Marco Di Ludovico, Barbara Ferracuti
- C 25152** SEISMIC VULNERABILITY ANALYSIS OF HISTORICAL BUILDING AGGREGATES USING THE LOGIC TREE APPROACH
Valentina Cima, Valentina Tomei, Ernesto Grande, Maura Imbimbo
- C 25880** REFINING SIMPLIFIED MECHANICAL METHODS FOR LARGE-SCALE SEISMIC VULNERABILITY ASSESSMENT: INSIGHTS FROM THE POST METHOD
Carlo Del Gaudio

- C 25399** ESTIMATION OF SEISMIC VULNERABILITY IN REINFORCED CONCRETE STRUCTURES CONSIDERING CUMULATIVE DAMAGE
Mauro Niño, Humberto Varum, Rodrigo Gómez
- C 25544** INTEGRATED EARTHQUAKE RISK ASSESSMENT AND MITIGATION FOR THE MARMARA SEA REGION-TÜRKIYE
Ufuk Hancilar, Karin Şeşetyan, Emin Menteşe, Eser Çakti, Fatma Malcioğlu, Hakan Süleyman
- C 24963** A VULNERABILITY INDEX-BASED APPROACH FOR SEISMIC RISK ANALYSIS OF MASONRY STRUCTURES WITHIN THE HISTORICAL CENTRE OF META (NAPLES, SOUTHERN ITALY)
Roberta Di Chicco, Luigi Amitrano, Antonio Formisano

COMPDYN MS 69
INNOVATIONS IN GROUND MOTION SELECTION AND SCALING
TECHNIQUES FOR STRUCTURAL ENGINEERING APPLICATIONS

Monday
17:00 - 19:00

Room C

MS Organizers: *Shaghayegh Karimzadeh, Manolis Georgioudakis, Milad Roohi, Michalis Fragiadakis, Paulo B. Lourenço*

Chair: *Shaghayegh Karimzadeh*

- C 25654** THREE-DIMENSIONAL SEISMIC INPUT FOR NEAR FAULT SCENARIOS AND EFFECTS ON STRUCTURES
Giulia Giuliani, Sara Sgobba, Fabio Micozzi, Fadel Ramadan, Laura Ragni, Giovanni Lanzano, Lucia Luzi, Andrea Dall'Asta
- C 24525** STATISTICAL EVALUATION OF DEEP LEARNING-BASED GENERALIZED GROUND MOTION MODELS – FROM PROBABILISTIC SEISMIC HAZARD ANALYSIS TO STRUCTURAL FRAGILITY ANALYSIS: APPLICATION TO SUBDUCTION ENVIRONMENTS
Jawad Fayaz, Pablo Torres, Miguel Medalla, Yijun Xiang
- C 25993** EFFECT OF INPUT MOTION SELECTION STRATEGY ON THE ASSESSMENT OF SEISMIC PERFORMANCE OF BRIDGES
Ioannis Mikes, Andreas Kappos, Evi Riga, Tadahiro Kishida
- C 24459** CODE-BASED SEISMIC SAFETY-CHECKING OF HISTORICAL MASONRY BUILDINGS
Daniel Caicedo, Shaghayegh Karimzadeh, Vasco Bernardo, Paulo Lourenço
- C 25304** BEYOND SPECTRAL ACCELERATION: ENHANCING SEISMIC RESPONSE PREDICTION IN BRIDGES WITH NEXT-GENERATION INTENSITY MEASURES
Savvinos Aristeidou, Gerard J. O'Reilly
- C 25433** TOWARDS UNBIASED NONLINEAR STRUCTURAL RESPONSE ESTIMATES: INSIGHTS ON FILTERING AND GROUND MOTION RECORD SELECTION
Alessandro Damiani, Mohsen Kohrangi, Paolo Bazzurro
- C 25334** IMPACT OF GROUND MOTION RECORD SELECTION ON HIGHER-MODE RESPONSES IN RC WALL BUILDINGS: COMPARING UNIFORM HAZARD AND CONDITIONAL SPECTRA APPROACHES
Jose Poveda, Gerard O'Reilly

UNCECOMP MS 15
AI-ENHANCED MULTISCALE AND MULTIPHYSICS MODELING FOR
ROBUST UNCERTAINTY QUANTIFICATION

Monday
17:00 - 19:00

Room D

MS Organizers: *M. Giselle Fernández-Godino, Gowri Srinivasan, Joseph Bakarji*

Chair: *M. Giselle Fernández-Godino*

U 21183 UNCERTAINTY QUANTIFICATION FRAMEWORK FOR A 3D TEMPORAL AUTOREGRESSIVE MODEL IN ATMOSPHERIC TRANSPORT
M. Giselle Fernández-Godino, Donald Lucas, Wai Tong Chung, Matthias Ihme, Stephen Myers

U 21305 THE STATISTICAL PHYSICS OF SPARSE EQUATION DISCOVERY
Joseph Bakarji, Andrei Klishin, Nathan Kutz, Krithika Manohar

U 21534 PROBABILISTIC PERFORMANCE CURVE ESTIMATION OF PSC BEAMS WITH CORRODED STRANDS USING A MULTISCALE APPROACH
Seungjun Lee, Jeabeom Lee, Chi-Ho Jeon, Young-Joo Lee

U 21340 ESTIMATING EQUATIONS OF STATE AND THEIR UNCERTAINTY FROM TRAJECTORIES OF DYNAMICAL SYSTEMS
George Kevrekidis, Marc Klasky

U 21143 DATA-DRIVEN ACCELERATION OF PARAMETRIC MULTIDISCIPLINARY SIMULATIONS
Susanna Baars, Ulrich Römer

COMPDYN MS 24
TIMBER-BASED STRUCTURAL SYSTEMS: RESEARCH ADVANCEMENTS
AND INSIGHTS FOR NEW AND EXISTING STRUCTURES IN SEISMIC-
PRONE AREAS

Monday
17:00 - 18:20

VIP Room

MS Organizers: *Antonio Sandoli, Valentina Tomei, Martina Sciomenta, Michele Mirra, Ivan Giongo*

Chair: *Antonio Sandoli*

C 24704 FIRST INSIGHTS ON THE SEISMIC RESPONSE OF EXISTING BUILDINGS WITH TIMBER VERTICAL ADDITIONS
Antonio Sandoli, Gennaro Vesce, Giovanni Fabbrocino

C 25844 EXTENSION OF FUNCTIONALITIES OF EXISTING BUILDINGS IN SEISMIC-PRONE AREAS USING TIMBER-BASED ELEMENTS
Martina Sciomenta, Valentina Tomei, Michele Mirra, Ivan Giongo, Antonio Sandoli

24551 NUMERICAL INVESTIGATIONS OF THE INFLUENCE OF IN-PLANE STIFFNESS OF TIMBER ROOF STRUCTURES ON THE SEISMIC OUT-OF-PLANE RESPONSE OF MASONRY GABLES
Michele Mirra, Satyadhrik Sharma, Francesco Messali

C 25543 SEISMIC ANALYSIS AND DESIGN OPTIMIZATION OF LIGHT TIMBER FRAME VERTICAL ADDITIONS ON RC LOW-CODE BUILDINGS
Andrea Bartolotti, Simone Piarulli, Ivan Giongo

COMPDYN MS 65
PARAMETRIC STRUCTURAL DESIGN: OPTIMIZING MATERIALS,
ENVIRONMENTAL IMPACT, AND COST

Monday
18:20 - 19:40

VIP Room

MS Organizers: *Laura Sardone, Giuseppe Carlo Marano, Giulia Angelucci, Fabrizio Mollaioli*

Chair: *Laura Sardone, Giuseppe Carlo Marano*

C 24629 **KEYNOTE:** PARAMETRIC DESIGN MEETS AI: SHAPING THE FUTURE OF STRUCTURAL ENGINEERING
Giuseppe Carlo Marano

C 24971 ENVIRONMENTAL ANALYSIS-DRIVEN STRUCTURAL OPTIMIZATION FOR HYBRID STRUCTURAL SYSTEMS
Laura Sardone, Giulia Angelucci, Giuseppe Marano, Fabrizio Mollaioli

C 25579 OPTIMAL BASED LATERAL STIFFNESS PRELIMINARY DESIGN IN MULTISTOREY FRAME STRUCTURES
UNDER SEISMIC LOADS
Giuseppe Carlo Marano, Laura Sardone, Alessandra Fiore, Rita Greco

DAY 3

TUESDAY 17 JUNE

COMPDYN SEMI-PLENARY LECTURES

Tuesday
9:00 - 11:00

Delphi

Chair: *M. Fragiadakis*

C 27806 ASSESSMENT OF ENVIRONMENTAL VIBRATION AND NEWTONIAN NOISE FOR THE EINSTEIN TELESCOPE
Geert Degrande

C 27215 INTEGRATED STRUCTURAL HEALTH MONITORING WITH REAL-TIME DATA ASSIMILATION AND HYBRID TWINS OF DYNAMICAL SYSTEMS
Ludovic Chamoin

U 21564 CALIBRATION AND DISCOVERY OF MATERIAL MODELS ACCOUNTING FOR UNCERTAINTY
Laura De Lorenzis

COMPDYN SEMI-PLENARY LECTURES

Tuesday
9:00 - 11:00

Salon des Roses A

Chair: *Muneo Hori*

C 27687 DYNAMICS OF STRUCTURES WITH FRACTIONAL VISCOELASTIC DEVICES SUBJECTED TO STOCHASTIC EXCITATION
Giuseppe Muscolino

C 27767 ACCELERATING NATURAL HAZARDS RESEARCH THROUGH SHARED COMPUTATION: APPLICATIONS IN EARTHQUAKE AND WIND ENGINEERING
Matthew DeJong

C 25772 ADVANCING SEISMIC RESILIENCE OF STRUCTURES WITH OPTIMISED RUBBER-BASED DEVICES
E. Tubaldi, M. Marinković, F. Freddi, D. Losanno, H. Ahmadi, M. Gams, N. Krtinić, C. Butenweg, M. Bošković, A. Lotti, P. K. Dhir, A. Bogdanovic, F. Manojlovski, J. Bojadjeva, Z. Rakicevic, V. Sheshov

UNCECOMP SEMI-PLENARY LECTURES

Tuesday
9:00 - 11:00

Salon des Roses B

Chair: *Wolfgang Wall*

U 21682 ADAPTIVE UNCERTAINTY PROPAGATION FOR REGIONAL COASTAL RISK ASSESSMENT
Alexandros Taflanidis

U 21434 STOCHASTIC FINITE ELEMENT ANALYSIS OF NON-LINEAR PROBLEMS IN LARGE DIMENSIONS
Udo Nackenhorst

U 21710 STRUCTURAL UNCERTAINTY MODELING AT THE FINITE ELEMENT LEVEL
Marc Mignolet

**UNCECOMP
SEMI-PLENARY LECTURES****Tuesday
9:00 - 11:00****Athena**Chair: *Laura De Lorenzis***U 21554** UNCERTAINTY QUANTIFICATION AND GENERATIVE MODELING USING MULTI-FIDELITY STRATEGIES*Alireza Doostan***U 22088** COPING WITH UNCERTAINTY IN LINEAR DYNAMICS WITH ADVANCED SIMULATION METHODS*Marcos Valdebenito***U 22234** EFFICIENT RELIABILITY ASSESSMENT OF DYNAMICAL SYSTEMS UNDER PARAMETER UNCERTAINTY*Iason Papaioannou, Oindrila Kanjilal, Kai Cheng, Daniel Straub***11:00-11:30
Coffee Break**

UNCECOMP MS 7 - IV
SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION:
NEW TRENDS

Tuesday
11:30 - 13:30

Delphi

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

Chair: Jean-Marc Bourinet

U 21511 KEYNOTE: GAUSSIAN PROCESS-ENHANCED SURROGATE MODELING AND ACTIVE LEARNING FOR EFFICIENT RARE EVENT PROBABILITY ESTIMATION IN ENGINEERING
Miroslav Vořechovský

U 21316 ADAPTIVE REDUCED ORDER SPECTRAL NON-DETERMINISTIC FEM
Dmytro Pivovarov, Kai Willner, Paul Steinmann

U 21531 STOCHASTIC MODELLING OF MATERIAL TENSORS OF HOMOGENEOUS ANISOTROPIC MATERIALS WITH POLYNOMIAL CHAOS EXPANSION
Merit Fernhout, Bojana Rosić

U 21507 PHYSICS-INFORMED NEURAL NETWORKS COMBINED WITH POLYNOMIAL CHAOS EXPANSION TO PROPAGATE RANDOM FIELD PROPERTIES OF COMPOSITES
Damien Bonnet-Eymard, Augustin Persoons, Panagiotis Gavallas, Matthias Faes, George Stefanou, David Moens

U 21530 SURROGATE MODELLING WITH UNCERTAIN SPD MATERIAL TENSORS USING CONSTITUTIVE MANIFOLD NEURAL NETWORKS
Wouter Schuttert, Mohammed Abdul Rasheed, Bojana Rosić

COMPDYN MS 39
INNOVATIVE STRATEGIES AND TECHNOLOGIES FOR VIBRATION
CONTROL OF BUILDINGS AND INFRASTRUCTURES

Tuesday
11:30 - 13:30

Salon des Roses A

MS Organizers: Emanuele Gandelli, Alessia Monaco, Giuseppe Lomiento, Virginio Quaglini

Chair: Emanuele Gandelli

C 24994 DISPLACEMENT-BASED DESIGN OF SDOF FRAMES CLADDED WITH DISSIPATIVE ROCKING PANELS
Emanuele Gandelli, Marco Lamperti Tornaghi, Dionysios Bournas

C 25500 SHEAR AND ROCKING MECHANISMS IN LIGHT WOOD FRAME STRUCTURES: A CLOSED-FORM ANALYSIS OF GSI SYSTEMS
Zenab Ali, Giuseppe Lomiento

C 25382 MULTI-STAGE FIBER-REINFORCED BEARINGS: A NOVEL, COST-EFFECTIVE APPROACH TO MULTI-HAZARD BASE ISOLATION USING RUBBER
Simone Galano, Andrea Calabrese

C 26252 PHYSICS-BASED WIRELESS STRUCTURAL HEALTH MONITORING AND CONTROL USING TEMPORAL FINITE ELEMENTS
Kosmas Dragos, Clara Martínez, George Manolis, Kay Smarsly

C 24463 VARIATION IN THE FRICTION PROPERTIES OF A SLIDING ISOLATOR DUE TO WEAR
Esengül Çavdar, Gökhan Özdemir, Virginio Quaglini, Eleonora Bruschi, Uğurcan Özçamur

C 24928 NUMERICAL AND EXPERIMENTAL INVESTIGATION OF A NOVEL HYBRID SEISMIC ISOLATION SYSTEM
Kai Guo, Gaetano Pianese, Gabriele Milani

- C 25518** DISTRIBUTION IN PLAN AND ELEVATION OF DISSIPATIVE BRACING FOR SEISMIC RETROFIT OF R.C. FRAMES

*Muhammad Ahmed, **Piero Colajanni**, Michele Fabio Granata, Leonardo Arfeli*

COMPDYN MS 14 - I
PRESERVATION OF MASONRY STRUCTURES AND
INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC
RISKS: FROM THE PAST TO THE FUTURE ADVANCES

Tuesday
11:30 - 13:30

Salon des Roses B

MS Organizers: *Michele Betti, Nicola Cavalagli, Francesco Clementi, Antonio Formisano, Salvador Ivorra Chorro, Gabriele Milani*

Chair: *Michele Betti*

- C 25588** **KEYNOTE:** ANALYSIS OF THE RECORDED RESPONSE OF THE COLOSSEUM TO AN EARTHQUAKE
***Fabrizio Vestroni**, Adriano De Sortis, Annamaria Pau*

- C 25253** STRENGTHENING OF MASONRY CROSS-VAULTS UNDER SHEAR SETTLEMENTS: COMPARISON BETWEEN DIFFERENT FRM SYSTEMS

*Emanuele Gandelli, **Alessia Monaco**, Marco Alforno, Luca Facconi, Fausto Minelli*

- C 24512** A NUMERICAL STRATEGY TO ASSESS THE STABILITY OF MASONRY VAULTS: A CASE STUDY IN THE URBINO PALACE

***Natalia Pingaro**, Marco Magnani, Carlo Priori, Guido Camarda, Gabriele Milani*

- C 24690** ON THE REAL-TIME DAMAGE PROGNOSIS OF CRACKED MASONRY WALLS BASED ON SIMULATION-DRIVEN MACHINE LEARNING

*Antonio Maria D'Altri, Mauricio Pereira, **Stefano de Miranda**, Branko Glisic*

- C 25308** MACROELEMENT MODELING OF UNREINFORCED AND REINFORCED EXPERIMENTAL TESTS ON MASONRY WALLS

***Alessandra Paoloni**, Domenico Liberatore, Daniela Addressi, Alessandro Vari, Ivan Roselli, Gianmarco de Felice, Stefano de Santis*

COMPDYN TS 20 - II
SEISMIC RISK AND RELIABILITY ANALYSIS

Tuesday
11:30 - 13:30

Athena

Chair: *Alessandro Cardoni*

- C 26884** SEISMIC VULNERABILITY ANALYSIS OF A NATURAL GAS NETWORK WITH HYDROGEN BLENDING
***Alessandro Cardoni**, Amir Reza Elahi, Simone Salvatori, Gian Paolo Cimellaro*

- C 25274** EVALUATION OF THE SEISMIC HAZARD IN THE EASTERN MEDITERRANEAN REGION
Zehra Cagnan

- C 24542** SEISMIC RISK OF TYPICAL SICILIAN HIGHWAY OVERPASSES: PRELIMINARY RESULTS
*Daniele Giunta, Davide Messina, **Eugenio Chioccarelli**, Antonino Recupero*

- C 25806** AVERAGE RESPONSE OF SINGLE DEGREE OF FREEDOM SYSTEMS FOR ESTIMATING THE NONLINEAR RESPONSE OF STRUCTURES

***Yedy Felipe Vargas-Alzate**, Ana Maria Zapata-Franco, R. Gonzalez-Drigo*

- C 26844** AUTOMATED ALGORITHM FOR SPATIAL CHARACTERISATION OF BUILDINGS WITHIN URBAN BLOCKS
*Miguel Ureña-Pliego, **Javier Rodríguez-Saiz**, Beatriz González-Rodrigo, Miguel Marchamalo-Sacristán*

DAY 3

TUESDAY 17 JUNE

- C 25153** FREQUENCY RESPONSE IDENTIFICATION OF OBJECTS FROM VIDEO MOTION MAGNIFICATION OF THE SHAKING TABLE TEST OF A SEISMIC ISOLATION SYSTEM

Vincenzo Fioriti, Alessandro Colucci, Eugenia Verrigni Petrei, Ivan Roselli

- C 25366** CREEP INFLUENCE ON DYNAMIC RELIABILITY IN REINFORCED CONCRETE SILOS UNDER HIGH TEMPERATURES

Jose Raul Martinez Zayas, Jesus Gerardo Perez Vega

COMPDYN MS 73 - I ADVANCES AND CHALLENGES IN DYNAMIC SOIL-FOUNDATION- STRUCTURE INTERACTION

Tuesday
11:30 - 13:30

Nafsika A

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

Chair: *Emmanouil Rovithis*

- C 25699** DAMPING MODIFICATION FACTORS INCLUDING SOIL-PILE KINEMATIC INTERACTION

Emmanouil Rovithis, Maria Iovino, Dimitris Sotiriadis, Raffaele Di Laora

- C 25860** DYNAMIC SOIL PRESSURES ON RIGID VERTICAL ROTATIONAL WALLS IN PRESENCE OF GENERALISED INHOMOGENEOUS SOILS

Armando Della Corte, Nunzia Letizia, Maria Giovanna Durante, Aggelos Tsikas, Adel Younan, Stijn François, George Anoyatis

- C 24645** EVALUATION OF SOIL STRUCTURE INTERACTION EFFECTS ON PEAK FLOOR ACCELERATION PREDICTIONS IN NUCLEAR POWER PLANTS USING RECORDED DATA FROM THE FUKUSHIMA EVENT

Yakub Adeyemi Muniru, Tadahiro Kishida, Elia Voyagaki, Agathoklis Giaralis

- C 25582** EXPERIMENTAL-TO-ANALYTICAL MODELLING OF SSI FOR A SMALL-SCALE WIND TURBINE

Shahin Huseynli, Ella Lee, Dimitris Karamitros, Raffaele De Risi, Matthew Dietz, Flavia De Luca

- C 25740** INFLUENCE OF GROUND MOTION CHARACTERISTICS ON THE SEISMIC PERFORMANCE OF SCoured BRIDGE PIERS

Marlio Molina Manrique, Mauro Aimar, Andrea Ciancimino, Sebastiano Foti

UNCECOMP MS 4 - I MODEL REDUCTION FOR UNCERTAINTY QUANTIFICATION

Tuesday
11:30 - 13:30

Nafsika B

MS Organizers: *Iason Papaioannou, Dimitris Giovanis, Jakob Scheffels, Elizabeth Qian*

Chair: *Iason Papaioannou*

- U 21427** **KEYNOTE:** COUPLED NEURAL NETWORKS FOR MULTIPHYSICS PROBLEMS

Bojana Rosic, Timm Goedde, Wouter

- U 21199** HIGH-ORDER INTEGRATORS FOR DYNAMICAL LOW-RANK METHODS WITH A VIEW TO FILTERING PROBLEMS

Fabio Nobile, Sébastien Riffaud

- U 21004** SYSTEM-THEORETIC MODEL ORDER REDUCTION FOR DATA ASSIMILATION

Josie König, Elizabeth Qian, Melina Freitag

- U 21157** NON-INTRUSIVE REDUCED ORDER MODELLING FOR EMULATING COMPLEX STOCHASTIC DYNAMICAL SYSTEMS

Kai Cheng, Iason Papaioannou, Daniel Straub

- U 21210** PARAMETRIC MODEL ORDER REDUCTION AND DATA-ASSIMILATION APPROACHES FOR SOLVING INVERSE PROBLEMS IN STRUCTURAL HEALTH MONITORING
Saddam Hijazi, *Carmen Gräßle*

COMPDYN MS 12 - I**ERIES: ADVANCING SYNERGIES IN EARTHQUAKE AND WIND ENGINEERING THROUGH LABORATORY TESTING**

Tuesday
11:30 - 13:30

Nefeli A

MS Organizers: *Gerard J. O'Reilly, Gian Michele Calvi*

Chair: *Gerard J. O'Reilly*

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- C 24714** ERIES: ADVANCING FRONTIER KNOWLEDGE IN EARTHQUAKE AND WIND ENGINEERING THROUGH EXPERIMENTAL RESEARCH
Gerard O'Reilly, *Gian Michele Calvi*
- C 25510** ERIES-STRONG – “SUSTAINABLE TIMBER RETROFIT OF CONCRETE BUILDINGS”
Ivan Giongo, *Francesco Graziotti, Nikolaos Stathas, Stathis Bousias, Francesco Smioldo, Andrea Bartolotti, Nicolò Damiani, Albino Angeli, Dmytro Dizhur*
- C 25229** SHAKING TABLE TESTS OF A 2-STOREY R.C. BUILDING WITH FIBER-REINFORCED ELASTOMERIC ISOLATORS
Daniele Losanno, *Shiv Prakash, Fulvio Parisi, Dimitrios Konstantinidis, Enrico Tubaldi, Hamid Ahmadi, Alfred Strauss, Dario De Domenico, Michalis Vassiliou, Dimitrios Vamvatsikos, Felipe Luis Ribeiro, Antonio Araujo Correia*
- C 24412** A COMPREHENSIVE EXPERIMENTAL CAMPAIGN ON THE IN-PLANE CYCLIC RESPONSE OF STONE MASONRY PIERS JACKETED WITH COMPOSITE MATERIALS
Madalena Ponte, Larisa Garcia- Ramonda, Igor Lanese, Gerard O'Reilly, Elisa Rizzo Parisi, Francesco Graziotti, Luca Pelà, Andrea Penna, Guido Magenes, Rita Bento, Gabriele Guerrini
- C 25166** FINITE ELEMENT ANALYSIS OF SELF-CENTRING BEAM-TO-COLUMN SUBASSEMBLIES IN SEISMIC-RESILIENT STEEL MRF: PRELIMINARY EVALUATION OF THE FRAME EXPANSION EFFECTS
A. Roumieh, *L. Kauntz Moderini, E. Elettore, S. Di Benedetto, A. B. Francavilla, M. Latour, F. Gutierrez-Urzu, L. Pieroni, S. Ramhormozian, B. Simpson, A. R. Barbosa, G. Rizzano, D. Grant, F. Ribeiro, A. A. Correia, F. Freddi*

COMPDYN MS 33 - I**OPEN CHALLENGES IN SEISMIC RISK ASSESSMENT, MODELING AND STRENGTHENING OF UNREINFORCED MASONRY STRUCTURES**

Tuesday
11:30 - 13:30

Nefeli B

MS Organizers: *Omar Alshawa, Stefania Degli Abbatì, Giacomo Destro Bisol, Linda Giresini, Francesca Taddei, Claudia Casapulla*

Chair: *Omar Alshawa, Christian Salvatori*

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- C 25118** PRELIMINARY RESULTS ON EXPERIMENTAL INVESTIGATION OF FUSE-BASED CROSS TIES USED IN OUT-OF-PLANE STABILIZATION OF MASONRY FACADES
Eugenia Verrigni Petrei Castelli, *Giacomo Destro Bisol, Luigi Sorrentino*
- C 25260** COMPARATIVE EXPERIMENTAL AND NUMERICAL ANALYSIS OF THE IN-PLANE LATERAL CYCLIC BEHAVIOR OF CLAY BRICK AIR LIME-BASED MASONRY WALLS
Armando Zagaroli, *Iwona Galman, Jan Kubica*

DAY 3

TUESDAY 17 JUNE

C 25529 IMPACT OF GEOMETRY, INTER-UNIT CONNECTIONS AND FLOOR DEFORMABILITY ON THE DYNAMIC RESPONSE OF UNREINFORCED MASONRY AGGREGATE BUILDINGS
Sofia Villar, Fabio Di Trapani, Massimo Petracca, Guido Camata

C 24538 FaiMec: AN APP FOR FAST SEISMIC ASSESSMENT OF LOCAL MECHANISMS IN UNREINFORCED MASONRY BUILDING AGGREGATES
Luca Umberto Argiento, Claudia Casapulla, Elena Speranza

COMPDYN MS 66 - I
SEISMIC RESPONSE AND CAPACITY EVALUATION OF NONSTRUCTURAL ELEMENTS THROUGH EXPERIMENTAL, ANALYTICAL, AND NUMERICAL METHODS

Tuesday
11:30 - 13:30

Rotisserie

MS Organizers: *Roberto Tartaglia, Alessandra de Angelis, Alessia Campiche, Danilo D'Angela*

Chair: *Alessandra de Angelis*

C 24835 SEISMIC PERFORMANCE OF COLD FORMED NON-STRUCTURAL PARTITION USED FOR ENREGY RETROFIT
Roberto Tartaglia, Alessandra De Angelis, Giuseppe Maddaloni

C 24866 EXPERIMENTAL SEISMIC ASSESSMENT OF SANDWICH PANELS FOR FAÇADE SYSTEMS
Enrico Bernardi, Orsola Coppola, Laura Nironi, Antonio Bonati

C 24842 DYNAMIC IDENTIFICATION OF MASONRY PARTITION WALLS BY AMBIENT VIBRATION DATA
Alessandra De Angelis, Vera Rillo, Salvatore Pengue, Giuseppe Maddaloni

C 25373 EXPERIMENTAL ANALYSIS OF GYPSUM PANEL-TO-CFS PROFILE SCREW CONNECTIONS
Vito D'Addesa

C 24847 IN-SITU EXPERIMENTAL TESTS OF PIPING SYSTEMS IN HOSPITALS AND HEALTH FACILITIES
Alessandra De Angelis, Roberto Tartaglia, Vera Rillo, Giuseppe Maddaloni

C 26030 EFFECT OF NON-STRUCTURAL ELEMENTS ON STRUCTURE AND DAMAGE ASSESSMENT USING NON-LINEAR STATIC AND DYNAMIC ANALYSIS
Sarmad Shakeel, Alessia Campiche

COMPDYN MS 57 - I
ADVANCEMENTS IN OPENSEES APPLICATIONS FOR EARTHQUAKE ENGINEERING

Tuesday
11:30 - 13:30

Alpha

MS Organizers: *Fabio Di Trapani, Igor Tomić, Massimo Petracca, Cristoforo Demartino*

Chair: *Massimo Petracca*

C 25516 **KEYNOTE:** GENETIC ALGORITHM-BASED FRAMEWORK FOR ENVIRONMENTAL AND ECONOMIC SUSTAINABLE SEISMIC RETROFITTING DESIGN OF REINFORCED CONCRETE FRAME STRUCTURES
Antonio Pio Sberna, Josephine Voigt Carstensen, Fabio Di Trapani

C 24834 IMPLEMENTATION OF A ROTATIONAL FRICTION INTERFACE FOR THE NUMERICAL MODELLING OF A BIDIRECTIONAL ROTATIONAL FRICTION DAMPER (BRFD)
Eleonora Grossi, Raffaele De Risi, Matteo Zerbin, Flavia De Luca, Alessandra Aprile

C 25325 A MACROSCOPIC UNIAXIAL MATERIAL MODEL FOR STEEL INCORPORATING FRACTURE, BOND-SLIP, AND BUCKLING VIA MULTISCALE HOMOGENIZATION
Alessia Casalucci, Guido Camata, Massimo Petracca

C 25068 PROFESSIONAL TOOLKIT FOR OPENSEES - STKO-PROFESSIONAL

Kristijan Kolozvari, Guido Camata, Massimo Petracca

C 25925 INFLUENCE OF PILE PARAMETERS ON SEISMIC FRAGILITY ASSESSMENT OF RC BRIDGE PIER

Begum Emte Ajom, Kaustubh Dasgupta, Arindam Dey

COMPDYN MS 26 - I

NEW PERSPECTIVES IN BASE ISOLATION AND ENERGY DISSIPATION DEVICES

Tuesday

11:30 - 13:30

Gamma

MS Organizers: *Eleonora Bruschi, Elena Miceli, Diego Gino, Marco Furinghetti*

Chair: *Eleonora Bruschi, Marco Furinghetti*

C 24458 EXPERIMENTAL AND NUMERICAL ANALYSES OF A RESILIENT PRESTRESSED LEAD DAMPER

Eleonora Bruschi, Virginio Quaglini, Carlo Pettoruso, Gabriele Dubini

C 25019 HIGH VELOCITY AND SEISMIC TETING OF VISCOUS FLUID DAMPERS

Frederik Bomholt, Toshihisa Mano, Torsten Ebert

C 25951 A NUMERICAL INVESTIGATION ON THE RATE-DEPENDENCE OF LEAD EXTRUSION DAMPERS

Furkan Çalim, Ahmet Güllü, Cihan Soydan, Ercan Yüksel

C 24552 IDENTIFICATION OF EFFECTIVE SEISMIC PARAMETERS FOR SIMULATING NON-LINEAR STRUCTURAL RESPONSE USING MACHINE LEARNING APPROACH

Massimiliano De Iuliis

C 25571 SEISMIC ISOLATION AND ENERGY DISSIPATION FOR THE NEW LACMA: RESILIENT ART PROTECTION VIA STATE-OF-THE-ART METHODOLOGIES

Abel Diaz, Alessandro Beghini, Eric Long

C 25462 AN EDUCATIONAL COMPUTER PROGRAM FOR NONLINEAR RESPONSE HISTORY ANALYSIS, VISUALIZATION AND ANIMATION OF RESPONSE OF SEISMICALLY ISOLATED STRUCTURES

Isak Idrizi, Michael Constantinou

COMPDYN MS 56 - I

NUMERICAL MODELLING AND ANALYSIS OF STRUCTURES AND INFRASTRUCTURES USING DISCRETE ELEMENT APPROACHES

Tuesday

11:30 - 13:30

Epsilon

MS Organizers: *Nicola Scattarreggia, Daniele Malomo, Bora Pulatsu, Matthew DeJong, Ricardo Monteiro, Nicolò Damiani*

Chair: *Bora Pulatsu*

C 26019 APPLIED ELEMENT MODELLING OF MASONRY ARCHES STRENGTHENED WITH FRCM

Nicola Scattarreggia, Mattia Calò, Ricardo Monteiro

C 24729 ON THE BLOCK-BASED SIMULATION OF ROCKING MASONRY WALLS VIA NUMERICAL DISSIPATION

A. M. D'Altri, G. Vlachakis, S. de Miranda, P. B. Lourenço

C 24969 IMPACT OF SUPERSTRUCTURE GEOMETRY ON THE SEISMIC BEHAVIOR OF MASONRY ARCH BRIDGES USING DISCRETE ELEMENT MODELING

Alessia Furijsi, Nicolò Damiani, Maria Rota, Andrea Penna

C 25485 FAILURE ANALYSIS OF URM STRUCTURES USING VIDEOGAME-INSPIRED PHYSICS ENGINES

Anna Wang, Bora Pulatsu, Sheldon Andrews, Daniele Malomo

DAY 3

TUESDAY 17 JUNE

- C 26176** NUMERICAL INVESTIGATION OF SEISMIC RESPONSE OF INFILLS SUBJECTED TO DYNAMIC OUT-OF-PLANE TESTS

Maithree Kurukulasuriya, Paolo Morandi, Guido Magenes

COMPDYN MS 30 - I
DAMAGE-CONTROL LOW-CARBON BUILDING TECHNOLOGIES FOR
ENHANCING SEISMIC RESILIENCE AND ENVIRONMENTAL
SUSTAINABILITY

Tuesday
11:30 - 13:30

Room A

MS Organizers: *Jonathan Ciurlanti, Simona Bianchi, Simone D'Amore, Livio Pedone*

Chair: *Simone D'Amore*

- C 25939** MULTI-HAZARD RISK ASSESSMENT OF TRADITIONAL VS. LOW DAMAGE REINFORCED CONCRETE BUILDINGS

Jonathan Ciurlanti, Simona Bianchi, Michele Matteoni, Barbara Polidoro, Michele Palmieri, Stefano Pampanin

- C 25427** QUASI-STATIC CYCLIC TESTING OF LOW-DAMAGE POST-TENSIONED BEAM-COLUMN CONNECTION WITH HYBRID STEEL-TIMBER CONFIGURATION

Livio Pedone, Simone D'Amore, Giada Formichetti, Michele Matteoni, Stefano Pampanin

- C 25352** INTEGRATING HEAT AND SEISMIC RISK: A MULTI-OBJECTIVE DECISION-MAKING APPROACH FOR BUILDING RETROFIT DESIGN

Kyujin Kim, Simone D'Amore, Alessandra Luna-Navarro, Thaleia Konstantinou, Mauro Overend, Stefano Pampanin, Simona Bianchi

- C 25356** A RESILIENCE BASED FRAMEWORK FOR ASSESSING SOCIO-ECONOMIC INDIRECT LOSSES DUE TO NATURAL HAZARDS

Michele Matteoni, Jonathan Ciurlanti, Simona Bianchi, Mauro Overend, Stefano Pampanin

- C 25918** ORGANIC-BASED ENHANCED COMPRESSED EARTH BRICK-MASONRY PANELS SUBJECTED TO SEISMIC LOADINGS: EXPERIMENTAL TESTS AND NUMERICAL SIMULATIONS

Curtis Jones, Cesar Javier Chacara Espinoza, Bartolomeo Panto'

COMPDYN MS 17 - I
SEISMIC DEMANDS AND PERFORMANCE ASSESSMENT OF
NON-STRUCTURAL COMPONENTS: CRITICAL ISSUES AND
ADVANCED ANALYSIS

Tuesday
11:30 - 13:30

Room B

MS Organizers: *Daniele Perrone, Sergio Ruggieri, Vladimir Vukobratović, Rola Assi*

Chair: *Vladimir Vukobratović*

- C 25415** SEISMIC FRAGILITY ANALYSIS OF SOLAR ENERGY GENERATION SYSTEMS

Andrea Santo Scarlino, Daniele Perrone, Amjad J Aref, Maria Antonietta Aiello

- C 25966** EFFECT OF TORSION ON FLOOR ACCELERATION DEMANDS OF NSCS ATTACHED TO RC BUILDINGS WITH DIFFERENT LATERAL LOAD RESISTING SYSTEMS

Nezar Gomeed, Rola Assi

- C 25064** PIPING SYSTEMS OF INDUSTRIAL PLANTS SUBJECTED TO AXIAL AND SEISMIC INPUTS

Bryan Chalarca, Giammaria Gabbianelli, Emanuele Brunesi, Francesco Micelli, Mariano Ciucci

- C 25283** PRELIMINARY NUMERICAL MODELLING OF A PIPE-TO-TANK CONNECTIONS EXPERIMENTAL CAMPAIGN

Chiara Miglietta, Daniele Perrone, Giammaria Gabbianelli, Gianni Blasi, Francesco Micelli, Mariano Ciucci

- C 25105** SIMPLIFIED VULNERABILITY ASSESSMENT METHODOLOGY OF THE ARCHITECTURAL-ARTISTIC ASSETS IN EXISTING HISTORICAL BUILDINGS IN TIMISOARA CITY, ROMANIA
Mouaki Benani Moundher, Iasmina Onescu, Cristina Bureşin

COMPDYN TS 10
IMPACT DYNAMICS

Tuesday
11:30 - 13:30

Room C

Chair: *Andrej Cherkaev*

- C 25975** DESIGN OF RESILIENT METAMATERIALS
Andrej Cherkaev, Debdeep Bhattacharya, Tyler Evans
- C 25476** HEAVY DROP LOAD ANALYSIS OF THE TWO-WAY SPANNING FLOORS IN AN INDUSTRY BUILDING
Huan He, Sander Meijers
- C 24703** COMPARISON OF BLAST PERFORMANCE OF CORRUGATED CRIMP AND FLAT PLATES
Bulent Erkmen
- C 25265** SIMULATION AND EXPERIMENTAL STUDY OF A MOVING NONLINEAR IMPACT OSCILLATOR TO CHARACTERIZE THE INTERACTIONS BETWEEN THE COMPONENTS OF A FUEL ROD WITH DIFFERENT GAPS
Matheus Versao Carnieri, Guillaume Ricciardi, Frédéric Lebon, Stéphane Bourgeois, Christophe Destouches
- C 26068** THE DYNAMIC IMPACT OF SURGE WAVES ON MULTI-COLUMN BRIDGE BENTS
S. M. Hadi Moosavian, Shooka Karimpour, Stavroula Pantazopoulou
- C 24972** ANALYSIS OF SEISMIC STRUCTURAL DAMAGES OBSERVED DURING RECENT SEVERE EARTHQUAKES WORLDWIDE
Mohamed Omar Hussein, Shehata Abdelrahem

COMPDYN MS 16
IN HONOR OF PROFESSOR GEORGE MANOS: EXPERIMENTAL MEASUREMENTS AND NUMERICAL SIMULATION IN THE FIELD OF EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS - INNOVATIVE SOLUTIONS FOR STRUCTURAL RETROFITTING

Tuesday
11:30 - 13:30

Room D

MS Organizer: *Konstantinos Katakalos*

Chair: *Konstantinos Katakalos*

- C 27072** INNOVATIVE METHOD OF PRESTRESSING FOR THE REHABILITATION OF THE POLYFYTOS BRIDGE
Alexandros Chortis, Eleni Charalampidou, Lazaros Melidis, Panagiotis Panetsos, Konstantinos Katakalos, Dimitrios Korres
- C 27071** INNOVATIVE DESIGN AND EXPERIMENT OF A 3D PRINTED TOPOLOGY OPTIMIZED PEDESTRIAN BRIDGE
Paraschos Boutsikas, Alexandros Chortis, Apostolos Argyros, Nikolaos Michailidis, Konstantinos Katakalos
- C 27079** SIMULATING THE ANISOTROPY OF ADDITIVELY MANUFACTURED STRUCTURES
Alexandros Chortis, Apostolos Argyros, Nikolaos Michailidis, Konstantinos Katakalos
- C 25481** EXPERIMENTAL CAMPAIGN OF THE RATE-INDEPENDENT PRESSURIZED SAND DAMPERS
Konstantinos Kalfas, Nicos Makris

DAY 3

TUESDAY 17 JUNE

C 27760 BRIDGING ANALYTICAL AND EXPERIMENTAL DOMAINS WITH EXPLAINABLE AI: GRAD-CAM++ FOR DAMAGE DETECTION IN LIGHTWEIGHT STRUCTURES UNDER MOVING MASSES
*Georgios Dadoulis, George Manolis, **Konstantinos Katakalos***

C 27070 A CASE STUDY FOR SEISMIC ASSESSMENT AND RETROFITTING OF MASONRY HERITAGE BUILDING FOLLOWING GREEK CODE FOR INTERVENTIONS (KADET)
Dimitrios Bares, Lazaros Melidis, Lambros Kotoulas, Konstantinos Katakalos

COMPDYN MS 10 - I
MODELLING AND ANALYSIS OF STRUCTURES UNDER ADVERSE
EVENTS BEFORE OR AFTER EARTHQUAKES

Tuesday
11:30 - 13:30

VIP Room

MS Organizers: *Mariano Di Domenico, Francesca Ferretti, Paolo Ricci, Gerardo Verderame, Andrea Prota*
Chair: *Paolo Ricci*

C 25629 **KEYNOTE:** VULNERABILITY OF MASONRY STRUCTURES UNDER A COMBINATION OF LOADS DUE TO TSUNAMI AND EARTHQUAKE
*Anthea Amato, **Liborio Cavaleri**, Maria Concetta Oddo*

C 25902 A SIMPLIFIED MECHANICS-BASED MODEL FOR THE ASSESSMENT OF INFILLED RC BUILDINGS UNDER PYROCLASTIC DENSITY CURRENTS
***Marco Gaetani d'Aragona**, Maria Polese, Gerardo Mario Verderame*

C 25630 MULTI-HAZARD FRAGILITY ASSESSMENT OF BRIDGES IN THE MEDITERRANEAN COASTAL REGIONS
***Maria Concetta Oddo**, Liborio Cavaleri, Anthea Amato*

C 25294 SEISMIC FRAGILITY OF CLAY-CERAMICS HOLLOW-BRICKS INFILL PANELS UNDER OUT-OF-PLANE LOADS
***Fernando Saitta**, Ivano Iovinella, Anna Marzo, Ivan Roselli, Concetta Tripepi*

C 26129 COASTAL FLOODING AND TSUNAMI LOSS ASSESSMENT: STATE OF THE ART AND PROPOSAL FOR PREDICTING BUILDING DAMAGE AND REPAIR COSTS
*Maria Zucconi, **Valerii Maksimov**, Barbara Ferracuti, Marco Di Ludovico, Marta Del Zoppo*

13:30-14:30
Lunch Break

UNCECOMP MS 9 - I
SOFTWARE FOR UNCERTAINTY QUANTIFICATION
Tuesday
14:30 - 16:30
DelphiMS Organizers: *Matteo Broggi, Stefano Marelli, Edoardo Patelli, Dirk Pflüger*Chair: *Stefano Marelli*
U 20949 UM-BRIDGE: ACCELERATING RESEARCH, DEMOCRATIZING UQ
Linus Seelinger, Anne Reinarz
U 20995 OVERVIEW OF OPENTURNS AND ITS GRAPHICAL INTERFACE PERSALYS
Joseph Muré
U 21116 A BENCHMARKING MODULE FOR UNCERTAINTY QUANTIFICATION ALGORITHMS IN UQLAB
Adéla Hlobilová, Stefano Marelli, Bruno Sudret
U 21277 THE URANIE PLATFORM: AN OPEN-SOURCE SOFTWARE FOR OPTIMIZATION AND UNCERTAINTY QUANTIFICATION
Rudy Chocat
U 21085 RISQ: RANDOM INTERVAL SPATIAL UNCERTAINTY QUANTIFICATION SOFTWARE
Ben Van Bavel, Robin Callens, David Moens
U 20934 BAYESIAN INVERSION FOR TSUNAMI SOURCES
Anne Reinarz, Linus Seelinger
UNCECOMP TS 17 - I
UNCERTAINTY QUANTIFICATION
Tuesday
14:30 - 16:30
Salon des Roses AChair: *Vagelis Plevris*
U 21569 **KEYNOTE:** NAVIGATING UNCERTAINTY IN IMAGE-BASED STRUCTURAL HEALTH MONITORING: THE ROLE OF FALSE POSITIVES, FALSE NEGATIVES, AND BASE RATE BIAS
Vagelis Plevris, Alejandro Jiménez Rios
U 21017 SOME CHALLENGES ASSOCIATED WITH THE PERSONALISATION AND REDUCTION OF UNCERTAINTY IN HUMAN CARDIOVASCULAR MODELS
Karolina Tlačka, Harry Saxton, Ian Halliday, Andrew Narracott, Maciej Malawski
U 21176 UNCERTAINTY QUANTIFICATION OF WIRE TOLERANCES IN COIL ASSEMBLY
Romas Zubavicius, Maria Nogal, Gan Fu, Mitrofan Curti, Oswaldo Morales-Nápoles
U 21047 A NOVEL METHOD FOR UNCERTAINTY QUANTIFICATION OF INELASTIC MATERIALS AND STRUCTURES: TIME-SEPARATED STOCHASTIC MECHANICS
Hendrik Geisler, Philipp Junker
U 21141 A GAUSSIAN PROCESS AND LINEARIZATION-BASED METHOD FOR COMPUTATION OF A CUT DISTRIBUTION AS PART OF BAYESIAN CALIBRATION OF CHAINED COMPUTER MODELS
Oumar Baldé, Guillaume Damblin, Amandine Marrel, Antoine Bouloré, Loïc Giraldi

COMPDYN MS 14 - II
PRESERVATION OF MASONRY STRUCTURES AND
INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC
RISKS: FROM THE PAST TO THE FUTURE ADVANCES

Tuesday
14:30 - 16:30

Salon des Roses B

MS Organizers: *Michele Betti, Nicola Cavalagli, Francesco Clementi, Antonio Formisano, Salvador Ivorra Chorro, Gabriele Milani*

Chair: *Francesco Clementi*

C 26923 **KEYNOTE:** PRELIMINARY DAMAGE ASSESSMENT OF MOLETTA TOWER OF CIRCUS MAXIMUS DUE TO CROWD-INDUCED VIBRATIONS
Adel Bali, Alessandro Cardoni, Med Abderraouf Louar, Gian Paolo Cimellaro

C 25755 PROBABILISTIC DAMAGE IDENTIFICATION THROUGH BAYESIAN INFERENCE
Silvia Monchetti, Cecilia Viscardi, Michele Betti, Gianni Bartoli, Giacomo Zini

C 25683 EXPERIMENTAL AND NUMERICAL APPROACH TO THE ASSESSMENT OF THE DISSIPATIVE BEHAVIOUR OF A TUFF MASONRY ARCH SUBJECTED TO CYCLIC LOAD TESTS
Anna Castellano, Mariella Diaferio, Aginaldo Fraddosio, Nataliia Pinchuk, Francesco Salvatore Toscano

C 24541 MODELLING THE COLLAPSE OF A MASONRY TOWER DURING THE 2015 NEPAL EARTHQUAKE WITH SUPPORT FROM A VIDEO-CAMERA RECORDING
José Lemos, Carlos Sousa Oliveira, Rajesh Rupakhety

C 24758 ENHANCEMENT OF SEISMIC PERFORMANCE OF HISTORICAL CLUSTERED BUILDINGS BY AN ORIGINAL SEISMIC COATING SYSTEM: A PARAMETRIC CASE STUDY IN MIRANDOLA
Giovanna Longobardi, Antonio Formisano

C 25732 SEISMIC FRAGILITY OF HISTORICAL MASONRY CONSTRUCTIONS: A VARIATIONAL-BASED NON-SMOOTH CONTACT DYNAMICS APPROACH
Nicola Nodargi, Paolo Bisegna

UNCECOMP MS 17 - I
BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE
AND ENGINEERING

Tuesday
14:30 - 16:30

Athena

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

Chair: *Oindrila Kanjilal*

U 21168 SURROGATE-AIDED BAYESIAN CALIBRATION WITH ADAPTIVE LEARNING STRATEGIES
Alexandros Taflanidis, Aakash Bangalore, Sang-ri Yi, Joel Conte

U 21169 VIRTUAL LOAD MONITORING OF OFFSHORE WIND FARMS VIA UNCERTAINTY-AWARE DEEP LEARNING MODELS
Nandar Hlaing, Pablo Morato, Francisco de Nolasco Santos, Wout Weijtjens, Christof Devriendt

U 21252 BELIEF DEEP MARKOV MODELS FOR POMDP MODEL INFERENCE IN COMPLEX DECISION-MAKING PROBLEMS
Giacomo Arcieri, Konstantinos Papakonstantinou, Daniel Straub, Eleni Chatzi

U 21347 INVERSE INSIGHTS THROUGH MULTIPHYSICS: LEARNING FROM COUPLED FIELDS
Lea Haeusel, Jonas Nitzler, Lea Köglmeier, Wolfgang Wall

- U 21487** WILDFIRE SPREADING FORECASTING WITH QUANTIFIED UNCERTAINTIES: A BAYESIAN UNCERTAINTY QUANTIFICATION AND PROPAGATION FRAMEWORK
Konstantinos Vogiatzoglou, Sergey Litvinov, Sebastian Kaltenbach, Konstantinos Ampountolas, Vassilis Bontozoglou, Petros Koumoutsakos, Costas Papadimitriou

COMPDYN MS 73 - II
**ADVANCES AND CHALLENGES IN DYNAMIC SOIL-FOUNDATION-
 STRUCTURE INTERACTION**

Tuesday
14:30 - 16:30

Nafsika A

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

Chair: *Raffaele Di Laora*

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- C 25729** KINEMATICALLY-INDUCED BENDING OF BRIDGE PIERS ON CAISSON FOUNDATIONS
Raffaele Di Laora, Raffaele Cesaro, Emmanouil Rovithis
- C 25930** NEAR-FAULT EARTHQUAKES: VERTICAL ACCELERATIONS AND SOIL-STRUCTURE INTERACTION
Armando Lucio Simonelli, Augusto Penna, Raffaele De Risi
- C 25313** FREQUENCY-WAVENUMBER METHOD FOR THE WAVE PROPAGATION THROUGH THE SOIL AND THE SOIL-STRUCTURE INTERACTION OF RAILWAY TRACKS AND BUILDING FOUNDATIONS NEAR RAILWAY LINES
Lutz Auersch
- C 25695** KINEMATIC RESPONSE OF END-BEARING PILES IN GENERALISED INHOMOGENEOUS SOILS UNDER P-WAVE EXCITATION
Armando Della Corte, Stijn François, Aggelos Tsikas, Jens Vankeirsbilck, Jeroen Boydens, George Anoyatis
- C 26850** SEISMIC BEHAVIOR OF A VIADUCT AFFECTED BY FOUNDATION SCOUR: A NUMERICAL STUDY
Samuele Franciolini, Mauro Aimar, Marco Civera, Luca Martinelli, Sebastiano Foti, Bernardino Chiaia

UNCECOMP MS 4 - II
MODEL REDUCTION FOR UNCERTAINTY QUANTIFICATION

Tuesday
14:30 - 16:30

Nafsika B

MS Organizers: *Iason Papaioannou, Dimitris Giovanis, Jakob Scheffels, Elizabeth Qian*

Chair: *Dimitris Giovanis*

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- U 21373** **KEYNOTE:** MODEL ORDER REDUCTION FOR LINEAR BAYESIAN INVERSE PROBLEMS
Jakob Scheffels, Elizabeth Qian, Iason Papaioannou
- U 21029** ENSEMBLE KALMAN INVERSION (EKI) FOR LINEAR GAUSSIAN BAYESIAN INVERSE PROBLEMS
Pavlos Stavrinos, Elizabeth Qian
- U 21166** PROJECTION-BASED MODEL ORDER REDUCTION AS BAYESIAN CONDITIONING
Anne Poot, Iuri Rocha, Pierre Kerfriden, Frans van der Meer
- U 21509** DATA-DRIVEN INVERSE UNCERTAINTY QUANTIFICATION: APPLICATION TO THE CHEMICAL VAPOR DEPOSITION REACTOR MODELING
Jeremy Loachamín, Eleni Koronaki, Dimitris Giovanis, Martin Kathrein, Christoph Czettl, Andreas Boudouvis, Stéphane Bordas

- U 21465** GOAL-ORIENTED UNCERTAINTY QUANTIFICATION FOR INVERSE PROBLEMS WITH APPLICATION TO X-RAY CT

Babak Maboudi Afkham, Yiqiu Dong, Per Christian Hansen

COMPDYN MS 12 - II
ERIES: ADVANCING SYNERGIES IN EARTHQUAKE AND WIND
ENGINEERING THROUGH LABORATORY TESTING

Tuesday
14:30 - 16:30

Nefeli A

MS Organizers: *Gerard J. O'Reilly, Gian Michele Calvi*

Chair: *Gerard J. O'Reilly*

- C 24687** ASSESSING WIND VULNERABILITY OF MODULAR BUILDINGS UNDER EXTREME WIND EVENTS

Said Elias Rahimi, Michael Beer

- C 25552** NUMERICAL MODELLING OF BASE-COLUMN CONNECTIONS IN EXISTING STEEL FRAMES

Luigi Di Sarno, Mario D'Aniello, Fabio Freddi

- C 25796** EXPERIMENTAL INVESTIGATION OF SEISMIC PERFORMANCE OF A NOVEL LIGHTWEIGHT CONCRETE STRUCTURAL SYSTEM USING PUMICE AGGREGATE

Dietlinde Koeber, Christoph Butenweg, Philippe Mongabure, Darius Seyed, Lorenzo Miccoli, Markus Hesse, Maria Nomikou, Vasileios Kaloidas, Marius Dumitrescu, Felix Bernauer

- C 25079** TRULY RESILIENT TIMBER BUILDINGS THROUGH ROCKING AND INERTANCE: PRELIMINARY ANALYSES FOR SHAKE TABLE TESTING

Christian Malaga-Chuquitaype, Yixuan Zhang, Zilan Zhang, Bohumil Kasal, David Escolano-Margarit, Juan Li, Cagatay Demirci, Aleksandra Bogdanovic, Juliana Bojadjeva, Zoran Rakicevic, Vlatko Sheshov

- C 25169** OUT-OF-PLANE SHAKE-TABLE TESTING OF URM GABLE WALLS CONSIDERING DIFFERENT ROOF CONFIGURATIONS

Marta Bertassi, Nicolò Damiani, Satyadhrik Sharma, Marco Smerilli, Michele Mirra, Igor Lanese, Elisa Rizzo Parisi, Gerard O'Reilly, Francesco Messali, Francesco Graziotti

COMPDYN MS 33 - II
OPEN CHALLENGES IN SEISMIC RISK ASSESSMENT, MODELING
AND STRENGTHENING OF UNREINFORCED MASONRY STRUCTURES

Tuesday
14:30 - 16:30

Nefeli B

MS Organizers: *Omar Alshawa, Stefania Degli Abbat, Giacomo Destro Bisol, Linda Giresini, Francesca Taddei, Claudia Casapulla*

Chair: *Omar Alshawa, Eugenia Verrigni Petrei Castelli*

- C 25387** A NOVEL 3D MACROELEMENT FOR THE SEISMIC ANALYSIS OF MASONRY STRUCTURES WITH EQUIVALENT-FRAME MODELS

Christian Salvatori, Gabriele Guerrini, Alessandro Galasco, Andrea Penna

- C 26083** NUMERICAL SEISMIC PERFORMANCE OF A VERNACULAR RAMMED EARTH DWELLING STRENGTHENED BY A COMPATIBLE TEXTILE REINFORCED MORTAR SYSTEM

Jennifer D'Anna, Daniel V. Oliveira, Rui A. Silva, Lidia La Mendola

- C 25429** SEISMIC VULNERABILITY AND STRENGTHENING OF A MASONRY BUILDING AGGREGATE: A CASE STUDY IN PRATA (L'AQUILA)

Francesca Pompili, Giulia Angelucci, Omar Alshawa, Fabrizio Mollaioli, Domenico Liberatore

- C 27302** AI-BASED CRACK DETECTION AND CLASSIFICATION TO AID THE IDENTIFICATION OF SEISMIC FAILURE MECHANISMS OF MASONRY CHURCHES
*E. Mousavian, **Andrea Pollastro**, Francesco Isgrò, Claudia Casapulla*

COMPDYN MS 66 - II
SEISMIC RESPONSE AND CAPACITY EVALUATION OF NONSTRUCTURAL ELEMENTS THROUGH EXPERIMENTAL, ANALYTICAL, AND NUMERICAL METHODS

Tuesday
14:30 - 16:30

Rotisserie

MS Organizers: *Roberto Tartaglia, Alessandra de Angelis, Alessia Campiche, Danilo D'Angela*

Chair: *Roberto Tartaglia*

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- C 25376** ENRICH PROJECT: ENHANCING THE RESILIENCE OF ITALIAN HEALTHCARE AND HOSPITAL FACILITIES
***Danilo D'Angela**, Carmen Rosaria Addeo, Margherita Agresti, Maria Antonietta Aiello, Orsola Coppola, Alessandra De Angelis, Anna Giannino, Marianovella Leone, Giuseppe Maddaloni, Gemma Musacchio, Maria Giovanna Sestito, Antonio Bonati, Umberto Signoriello, Roberto Tartaglia, Silvia Zidarich, Gennaro Magliulo*
- C 26099** ABOUT THE ASSESSMENT OF SEISMIC CAPACITY OF MULTI-STORY VENTILATED FAÇADES
***Orsola Coppola**, Maddalena Cimmino, Alessandra De Angelis*
- C 24844** A PROCEDURE TO IDENTIFY THE TYPE OF MASONRY INFILL WALLS IN FRAMED STRUCTURES BASED ON FAST AMBIENT VIBRATION TESTS
*Alessandra De Angelis, **Vera Rillo**, Giuseppe Maddaloni*
- C 25374** STATE OF THE ART AND EXPERIMENTAL SETUP FOR SEISMIC EVALUATION OF LARGE CONCEALED GRID SUSPENDED CEILINGS
Alessandro Prota
- C 25419** SEISMIC RISK AND FUNCTIONAL ADAPTIVITY ASSESSMENT OF A HOSPITAL BUILDING BY RAPID VISUAL SCREENING: A PILOT STUDY
***Carmen Rosaria Addeo**, Danilo D'Angela, Antonio Rocchio, Luca Damiani, Gennaro Magliulo*
- C 25854** EXPERIMENTAL INVESTIGATION OF THE IN-PLANE AND OUT-OF-PLANE CAPACITY OF TYPICAL ITALIAN INFILL WALLS
***Ivano Iovinella**, Anna Marzo, Fernando Saitta, Concetta Tripepi, Ivan Roselli*
- C 26031** NUMERICAL MODELLING OF IN-PLANE SEISMIC BEHAVIOUR OF CFS DRYWALL PARTITION WALLS AND FAÇADES
***Alessia Campiche**, Sarmad Shakeel*

COMPDYN MS 57 - II
ADVANCEMENTS IN OPENSEES APPLICATIONS FOR EARTHQUAKE ENGINEERING

Tuesday
14:30 - 16:30

Alpha

MS Organizers: *Fabio Di Trapani, Igor Tomić, Massimo Petracca, Cristoforo Demartino*

Chair: *Fabio Di Trapani*

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- C 25328** ADVANCED MODELING STRATEGIES FOR RC BEAMS, WALLS, AND SLABS USING OPENSEES
***Massimo Petracca**, Stefano Fusella, Guido Camata*
- C 25035** FM-2D/3D: GUI FOR THE 2D AND 3D SIMULATION OF STEEL FRAME BUILDINGS
Ahmed Elkady

DAY 3

TUESDAY 17 JUNE

- C 25406** RESPONSE PARAMETER ASSESSMENT THROUGH HIGH FIDELITY MODELING OF IN-PLANE AND OUT-OF-PLANE RESPONSE OF INFILLED FRAMES
Marilisa Di Benedetto, Fabio Di Trapani, Raffaele De Risi, Guido Camata
- C 25114** RESPONSE OF EARTHQUAKE-DAMAGED REINFORCED CONCRETE COLUMNS UNDER FIRE EXPOSURE: A NUMERICAL STUDY
Anand Kumar, P. Ravi Prakash
- C 24618** INTEGRATING OPENBIM WITH OPENSEES: AN APPLICATION TO TRADITIONAL MASONRY STRUCTURES
Maria Laura Leonardi, José Luis Granja, Daniel Oliveira, Miguel Azenha
- C 25525** OPTIMIZATION OF SOIL PROFILE NUMERICAL MODELS FOR MULTI-DIRECTIONAL SEISMIC SITE RESPONSE ANALYSIS USING OPENSEES
Shima Sadeghzadeh, Antonio Sberna, Fabio Di Trapani, Cristoforo Demartino
- C 25998** SEISMIC RETROFITTING OPTIMIZATION OF RC BUILDINGS USING CROSS-LAMINATED TIMBER PANELS AND ACCOUNTING FOR MORPHOLOGY-BASED CRITERIA
Carlotta Contiguglia, Giuseppe Quaranta, Cristoforo Demartino

COMPDYN MS 26 - II NEW PERSPECTIVES IN BASE ISOLATION AND ENERGY DISSIPATION DEVICES

Tuesday
14:30 - 16:30

Gamma

MS Organizers: *Eleonora Bruschi, Elena Miceli, Diego Gino, Marco Furinghetti*

Chair: *Diego Gino, Elena Miceli*

- C 24678** FULL-PROBABILISTIC SEISMIC RESPONSE OF 3D ISOLATED BRIDGES UNDER SPATIALLY VARIABLE EARTHQUAKE GROUND MOTION
Elena Miceli, Guglielmo Amendola, Massimiliano De Iuliis, Gaetano Alfano, Paolo Castaldo
- C 26114** DEFINITION OF A SIMPLIFIED DESIGN PROCEDURE FOR ENERGY DISSIPATION DEVICES COUPLED WITH SEISMIC ISOLATION SYSTEMS
Marco Furinghetti
- C 25973** A HIGHLY-TUNABLE NOVEL ROCKING TUBE DAMPER (RTD)
Samantha Krieg, Geoffrey Rodgers, Henry Xu, Lisa Tobber
- C 25706** PARAMETRIC STUDY ON RETROFIT OF RC FRAMED BUILDINGS BY DISSIPATIVE TOWER
Francesca Barbagallo, Edoardo Michele Marino, Claudia Strano
- C 26004** DYNAMIC SOIL-STRUCTURE INTERACTION EFFECTS ON THE PERFORMANCE OF BASE ISOLATION TECHNIQUES IN BUILDINGS
Davide Noè Gorini, Elide Nastri, Rosario Montuori, Imma Califano, Maria Luisa Di Salvatore
- C 24437** SENSITIVITY OF DYNAMIC FRICTION COEFFICIENT OF A CURVED SURFACE SLIDER TO LOW TEMPERATURES
Esengül Çavdar, Gökhan Özdemir, Virginio Quaglini, Eleonora Bruschi, Uğurcan Özçamur
- C 24580** EFFICIENT DESIGN OF TRUSS FOOTBRIDGES WITH STIFFNESS-PROPORTIONAL INERTERS
Nir Itzhak Ben-Israel, Oren Lavan

COMPDYN MS 56 - II
NUMERICAL MODELLING AND ANALYSIS OF STRUCTURES AND
INFRASTRUCTURES USING DISCRETE ELEMENT APPROACHES

Tuesday
14:30 - 15:30

Epsilon

MS Organizers: *Nicola Scattarreggia, Daniele Malomo, Bora Pulatsu, Matthew DeJong, Ricardo Monteiro, Nicolò Damiani*

Chair: *Nicola Scattarreggia*

C 25758 PREDICTING THE EFFECT OF CONSTRUCTION QUALITY ON THE SEISMIC RESPONSE OF A STONE MASONRY BUILDING USING DEM
Peter Griesbach, Andrei Farcasiu, Sinan Acikgoz, Bora Pulatsu

C 25161 DISCRETE ELEMENT MODELING OF THE OUT-OF-PLANE SEISMIC RESPONSE OF UNREINFORCED MASONRY GABLES
Nicolò Damiani, Marta Bertassi, Lucy Davis, Francesco Graziotti, Daniele Malomo

C 25002 CYCLIC IMPLEMENTATION OF THE CONTACT MODEL FOR MASONRY ANALYSIS USING THE DISTINCT ELEMENT METHOD
Yopi Oktiovan, Francesco Messali, José Lemos, Bora Pulatsu, Jan Rots

COMPDYN MS 44
ASSESSMENT, RETROFIT AND ASSET MANAGEMENT OF STRUCTURES
AND INFRASTRUCTURE SYSTEMS

Tuesday
15:30 - 16:30

Epsilon

MS Organizers: *Marco Domaneschi, Valentina Villa, Bernardino Chiaia, Stergios A. Mitoulis, Raffaele Cucuzza, Giuseppe Andrea Ferro, Sotiris Argyroudis*

Chair: *Marco Domaneschi*

C 24630 RESILIENCE ASSESSMENT OF RETROFITTING SOLUTIONS FOR A PRESTRESSED CONCRETE VIADUCT
Marco Domaneschi, Raffaele Cucuzza, Sotirios Argyroudis, Valentina Villa, Nadiia Kapiika, Stergios A. Mitoulis

C 25062 STRUCTURAL DAMAGE DETECTION IN BRIDGES UNDER OPERATIONAL AND ENVIRONMENTAL VARIABILITY
Leonardo Zunino, Joan Ramon Casas, Marco Domaneschi

C 25063 A METHOD FOR GENERATING SYNTHETIC IMPACT ECHO IMAGES IN STRUCTURAL HEALTH MONITORING
Giuseppe Desiderio, Leonardo Zunino, Maurizio Morgese, Valentina Villa, Marco Domaneschi, Ali Maher

C 25202 A RAPID METHODOLOGY FOR ASSESSING BUILDING STOCKS AND PRIORITIZING MAINTENANCE INTERVENTIONS
Luca Tosolini, Margherita Fabris, Marco Gaspari, Francesca da Porto

C 25607 RETROFITTING OF EARTHQUAKE-DAMAGED REINFORCED CONCRETE STRUCTURES THROUGH KAN.EPE. AND 3D DETAILED MODELING
Dimitra Gkogkidou, George Markou

DAY 3

TUESDAY 17 JUNE

COMPDYN MS 30 - II DAMAGE-CONTROL LOW-CARBON BUILDING TECHNOLOGIES FOR ENHANCING SEISMIC RESILIENCE AND ENVIRONMENTAL SUSTAINABILITY

Tuesday
14:30 - 16:30

Room A

MS Organizers: Jonathan Ciurlanti, Simona Bianchi, Simone D'Amore, Livio Pedone

Chair: Jonathan Ciurlanti

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- C 25797** ENHANCING THE RESILIENCE OF EXISTING BUILDINGS USING LOW-DAMAGE EXOSKELETONS: A PROOF OF CONCEPT THROUGH A MULTI-HAZARD RISK ASSESSMENT PROCEDURE
Simone D'Amore, Jonathan Ciurlanti, Michele Matteoni, Kyujin Kim, Simona Bianchi, Alessandra Luna Luna-Navarro, Barbara Polidoro, Mauro Overend, Stefano Pampanin
- C 25948** SUSTAINABLE RETROFITTING TECHNIQUES FOR SEISMIC PROTECTION OF MASONRY STRUCTURES
Aakarsha Khawas, Prateek Kumar Dhir, Gopal Singh Bhandari, Rajan Suwal, Bartolomeo Panto, Stefan Szyniszewski
- C 25946** PROBABILISTIC SEISMIC ASSESSMENT OF UNITISED GLASS CURTAIN WALLS WITH TIMBER FRAMING
Giovanni Milan, Jonathan Ciurlanti, Danny Bond, Simona Bianchi, Nebojša Buljan, Guido Lori, Jamie Dennis
- C 25896** MULTI-CRITERIA APPROACH FOR THE EVALUATION OF THE SEISMIC-ENERGETIC RETROFIT SOLUTIONS FOR A PUBLIC RESIDENTIAL BUILDING
Valerio Cerracchio, Simone D'Amore, Miriam Di Matteo, Andrea Vallati, Stefano Pampanin
- C 25264** NEURAL NETWORK-ENHANCED HYBRID VIBRATION CONTROL FOR BASE-ISOLATED STRUCTURES
Nour Elhouda Ghanemi, Mahdi Abdeddaim, Abdelhafid Ounis, Michela Basili
- C 25322** INNOVATIVE INTEGRATED RETROFIT STRATEGIES FOR ENHANCING THE SEISMIC AND ENERGY PERFORMANCES OF EXISTING BUILDINGS EXHIBITING NONLINEAR BEHAVIOR
Michela Basili, Chiara Scarapazzi, Maurizio De Angelis, Filippo Busato

COMPDYN MS 17 - II SEISMIC DEMANDS AND PERFORMANCE ASSESSMENT OF NON-STRUCTURAL COMPONENTS: CRITICAL ISSUES AND ADVANCED ANALYSIS

Tuesday
14:30 - 15:30

Room B

MS Organizers: Daniele Perrone, Sergio Ruggieri, Vladimir Vukobratović, Rola Assi

Chair: Daniele Perrone

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- C 25473** QUANTIFICATION OF NON-STRUCTURAL SEISMIC DEMANDS IN BUILDINGS WITH FLEXIBLE DIAPHRAGMS THROUGH DIFFERENT MODELLING APPROACHES
Gianni Blasi, Sergio Ruggieri, Daniele Perrone, Vladimir Vukobratović
- C 24726** LESSONS ON THE ROLE OF NON-STRUCTURAL ELEMENT VULNERABILITY IN BUILDING LOSS AND FUNCTIONAL RECOVERY USING JAPANESE POST-EARTHQUAKE FIELD DATA
Gerard O'Reilly, Kan Hasegawa, Davit Shahnazaryan, José Poveda, Yu Fukutomi, Akihiro Kusaka, Masayoshi Nakashima
- C 25888** SEISMIC FRAGILITY ASSESSMENT OF COLD-FORMED STEEL GYPSUM DRYWALLS: EXPERIMENTAL INSIGHTS AND COMPARISONS
Ghislain Rivron

COMPDYN MS 60
ADVANCED DISSIPATIVE DEVICES FOR EARTHQUAKE RESISTANT
STEEL STRUCTURES

Tuesday
15:30 - 16:30

Room B

MS Organizers: *Paolo Zampieri, Federico Gusella, Riccardo Piazzon, Kara Peterman*

Chair: *Paolo Zampieri*

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- C 25982** SEISMIC PERFORMANCE AND CAPACITY DESIGN OF STEEL STRUCTURES WITH KNEE BRACING SYSTEMS
*Riccardo Piazzon, Federico Gusella, **Paolo Zampieri***
- C 25831** STRUCTURAL PERFORMANCE AND FAILURE ANALYSIS OF NOVEL STEEL PLATE SHEAR WALLS
Hadi Monsef Ahmadi, *Maria Zucconi, Antonio Formisano, Barbara Ferracuti*
- C 25216** STRUCTURAL ANALYSIS AND OPTIMISATION OF DISSIPATIVE STEEL FRAME STRUCTURES
*Riccardo Piazzon, Jordan Stevy Defo Wabo, **Paolo Zampieri**, Carlo Pellegrino*

COMPDYN MS 77
ADVANCEMENTS OF SIGNAL AND DATA PROCESSING METHODS
FOR STRUCTURAL HEALTH MONITORING

Tuesday
14:30 - 16:30

Room C

MS Organizers: *Pierre Argoul, Michalis Fragiadakis*

Chair: *Pierre Argoul, George Mylonakis*

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- C 27734** STRUCTURAL IDENTIFICATION AND SINGULARITY DETECTION ON SEISMIC DATA USING THE WAVELET TRANSFORM
Pierre Argoul, *Michalis Fragiadakis, Françoise Argoul*
- C 25991** FIRST RESULTS OF THE APPLICATION OF A VISION-BASED METHODOLOGY FOR MONITORING DISPLACEMENTS DURING FULL-SCALE BUILDING SHAKE TABLE TESTING
Laura Gioiella, *Fabio Micozzi, Morgan McBain, Michele Morici, Alessandro Zona, Andrea Dall'Asta, Barbara Simpson, Andre Barbosa*
- C 26038** COMPARISON OF OPTIMIZATION STRATEGIES APPLIED ON VIBRATION-BASED STRUCTURAL DAMAGE DETECTION
Roger Serra, *Julien Olivier*
- C 27102** A COPULA BASED STOCHASTIC MODEL FOR THE GENERATION OF ARTIFICIAL ACCELEROGRAMS
Hera Yanni, *Michalis Fragiadakis*

COMPDYN TS 2 - I
ALGORITHMS FOR STRUCTURAL HEALTH MONITORING

- C 24861** SEMI-SUPERVISED DAMAGE DETECTION IN WIND TURBINE COMPONENTS UNDER ENVIRONMENTAL VARIABILITY
Maria Quiroz, *Sathiskumar Ponnusami, Miguel Bravo-Haro*
- C 25048** ADVANCES IN STRUCTURAL HEALTH MONITORING OF BURIED PIPELINES USING GROUND-VIBRATION MEASUREMENTS
Oscar Scussel, *Michael Brennan, Fabricio de Almeida, Amarildo Paschoalini*
- C 27030** COUPLING FEM MODELLING AND MT-INSAR MONITORING FOR DAM SAFETY: THE CASE OF VADOMOJÓN DAM (SPAIN)
*Ignacio González-Tejada, Elías Esteban, Antonio Ruiz Armenteros, Francisco Lamas-Fernández, Beatriz González-Rodrigo, Candela Sancho, Alfredo Fernández-Landa, Álvaro Hernández-Cabezudo, Alfredo Granados, Isabel Granados, Luis Jordá, Rubén Martínez-Marin, **Miguel Marchamalo-Sacristán***

DAY 3

TUESDAY 17 JUNE

COMPDYN MS 38 - I STRUCTURAL HEALTH MONITORING AND DAMAGE DETECTION IN EXISTING STRUCTURES AND INFRASTRUCTURES: ADVANCED TECHNOLOGIES, DATA ANALYSIS, AND DAMAGE THRESHOLDS

Tuesday
14:30 - 16:30

Room D

MS Organizers: *Rocco Ditommaso, Nicla Lamarucciola, Felice Carlo Ponzo*

Chair: *Nicla Lamarucciola*

C 25598 **KEYNOTE:** FRAMEWORK FOR A PRACTICAL AND COST-EFFECTIVE IOT-ENHANCED STRUCTURAL HEALTH MONITORING AND DAMAGE DIAGNOSTICS SYSTEM WITH DIGITAL TWINNING
Jack Huang, André Broekman, George Markou, Hua-Peng Chen

C 25347 DINSAR - SBAS SATELLITE MONITORING OF INFRASTRUCTURE: MISSING DATA AND AIR TEMPERATURE IMPACT
Felice Carlo Ponzo, Rocco Ditommaso

C 24837 STATISTICAL THRESHOLDS TO DISTINGUISH PATHOLOGICAL FROM PHYSIOLOGICAL VARIATIONS IN STRUCTURAL EIGENFREQUENCIES
Rocco Ditommaso, Felice Carlo Ponzo

C 25810 ANOMALY DETECTION ON A CONCRETE ARCH DAM: EXPLORING THE INFLUENCE OF TRAINING PERIODS
Sergio Pereira, Filipe Magalhães, Juan Mata, Jorge Gomes, Álvaro Cunha

C 25431 AI-BASED ANALYSIS OF AMBIENT VIBRATION DATA FOR THE STRUCTURAL HEALTH MONITORING AND DAMAGE ASSESSMENT IN EXISTING STRUCTURES
Domenico Palumbo, Ivan Roselli

COMPDYN MS 10 - II MODELLING AND ANALYSIS OF STRUCTURES UNDER ADVERSE EVENTS BEFORE OR AFTER EARTHQUAKES

Tuesday
14:30 - 15:10

VIP Room

MS Organizers: *Mariano Di Domenico, Francesca Ferretti, Paolo Ricci, Gerardo Verderame, Andrea Prota*

Chair: *Mariano Di Domenico*

C 25299 SEISMIC-RESILIENT BUILDING DESIGN AND ASSESSMENT FOR WITHSTANDING NATURAL CATASTROPHES
Mariano Di Domenico, Paolo Ricci, Gerardo M. Verderame

C 25549 COMBINING SEISMIC MONITORING AND SHM: INNOVATIONS IN RISK ASSESSMENT AT CAMPI FLEGREI CALDERA
Giuseppe Occhipinti, Claudio Martino, Giuseppina Tusa, Maria D'Amico, Domenico Patanè, Aldo Zollo

COMPDYN MS 45 - I SEISMIC RISK ASSESSMENT AND RETROFITTING STRATEGIES FOR STEEL STORAGE RACKS

Tuesday
15:10 - 16:30

VIP Room

MS Organizers: *Marco Donà, Giammaria Gabbianelli, Gianrocco Mucedero, Dimitris Tsarpalis*

Chair: *Giammaria Gabbianelli*

C 25251 SEISMIC FRAGILITY MODELS FOR UNBRACED STEEL PALLET RACKS CONSIDERING EVENTS ON AMPLIFYING SOILS
Marco Donà, Alberto Zonta, Enrico Bernardi, Giacomo Piredda, Francesca da Porto

C 25357 BEARING RESISTANCE OF HINGED THIN-WALLED PROFILES
Agnese Natali, Daniele Mattoccia, Francesco Morelli

- C 25331** PERFORMANCE ASSESSMENT OF STEEL STORAGE PALLET RACKS USING DIFFERENT SEISMIC ANALYSIS APPROACHES

Aldo Rapone, Bryan Chalarca, Giammaria Gabbianelli

- C 25256** SEISMIC PERFORMANCE OF INDUSTRIAL RACKS: A PARAMETRIC FRAMEWORK FOR EVALUATING RETROFITTING STRATEGIES

Marco Ceresara, Alberto Zonta, Giacomo Piredda, M. Baraldo, Francesca da Porto

16:30-17:00

Coffee Break

UNCECOMP MS 9 - II
SOFTWARE FOR UNCERTAINTY QUANTIFICATION

Tuesday
17:00 - 19:00

Delphi

MS Organizers: *Matteo Broggi, Stefano Marelli, Edoardo Patelli, Dirk Pflüger*

Chair: *Stefano Marelli*

U 21283 POLYUQ: A SOFTWARE TOOL FOR THE SIMULTANEOUS CONSIDERATION OF ALEATORY AND EPISTEMIC UNCERTAINTIES IN ENGINEERING PROBLEMS

Martin Drieschner

U 21088 LAGUN: AN OPEN-SOURCE AND FLEXIBLE PLATFORM FOR DATA EXPLORATION AND OPTIMIZATION

*Delphine Sinoquet, David Chazalviel, Thierry Gonon, **Morgane Menz**, Ayoub El Bachiri*

U 21300 MULTI-DISCIPLINARY DESIGN OPTIMIZATION UNDER UNCERTAINTY: THE OPEN SOURCE CAPABILITIES OF GEMSEO

***Matthias De Lozzo**, Clément Laboulfie, Olivier Sapin, Nicolas Roussouly, François Gallard, Amine Aziz-Alaoui, Antoine Dechaume, Anne Gazaix*

U 21337 A GENERAL SOFTWARE TOOL FOR GLOBAL SENSITIVITY ANALYSIS AND UNCERTAINTY QUANTIFICATION AT SCALE OF TIME-DEPENDENT MODEL OUTPUTS

Ivana Jovanovic Buha

U 21274 BAYESIAN INVERSE UNCERTAINTY QUANTIFICATION FOR COMPUTATIONAL ENGINEERING USING SIMULATION-BASED INFERENCE

Maternus Herold, Jan Boelts

U 20997 ENABLING REAL-TIME VISUALIZATION OF UNCERTAINTY QUANTIFICATION RESULTS BY EFFICIENTLY IMPLEMENTING STOCHASTIC METHODS IN THE JULIA LANGUAGE

Maximilian Bittens, Jan Thiedau, Jobst Maßmann

UNCECOMP TS 17 - II
UNCERTAINTY QUANTIFICATION

Tuesday
17:00 - 19:00

Salon des Roses A

Chair: *Taotao Zhou*

U 21030 TOLERANCE DESIGN METHOD FOR NON-STANDARD OIL AND GAS EQUIPMENT STRUCTURES BASED ON ACTIVE LEARNING KRIGING MODEL

*Junyuan Ma, **Taotao Zhou**, Yuntao Li, Laibin Zhang*

U 21079 A MULTI-FIDELITY REDUCED-ORDER MODEL TO QUANTIFY AERODYNAMIC FORCES ON A VERTICAL-AXIS WIND TURBINE WITH UNCERTAIN ROTATIONAL SPEED

***Fausto Dicech**, Lucia Parussini*

U 21431 HOW TO COLLECT AND HANDLE AMBIGUOUS EXPERT KNOWLEDGE?

***Éva Kenyeres**, Alex Kummer, János Abonyi*

U 21071 UNCERTAINTY QUANTIFICATION IN THE SIMULATION OF FINITE INELASTIC DEFORMATIONS USING TIME-SEPARATED STOCHASTIC MECHANICS

***Luisa Alina Kinat**, Hendrik Geisler, Philipp*

U 21258 VARIANCE-INFORMED SUBSPACE: A GRADIENT-FREE DIMENSION REDUCTION FOR ADAPTIVE BAYESIAN INFERENCE

***Nadège Polette**, Olivier Le Maître, Pierre Sochala, Alexandrine Gesret*

- U 21419** UNCERTAINTY QUANTIFICATION OF TRANSIENT THERMODYNAMIC STATES IN A CRYOGENIC LIQUID HYDROGEN TANK DURING FILLING AND FLIGHT OPERATIONS
Mehdi Anhichem, Francesco Montomoli, Vito Tagarielli, Georgios Arvithis, Konstantinos Bollas, Vasilis Gkoutzamanis, Anestis Kalfas
- U 21437** MODELING AND MECHANICAL CHARACTERIZATION OF THE UNCERTAINTY OF INJECTION MOLDED SHORT FIBER REINFORCED POLYMERS
Nicolas Christ, Jörg Hohe, Carla Beckmann
- U 20972** CONFORMAL PREDICTION: EVALUATING THE RELIABILITY OF DEEP LEARNING MODELS FOR SOLVING PDEs ACROSS VARYING CONFIDENCE INTERVALS
Aoming Liang, **Qi Liu**, Weicheng Cui, Changhui Song

COMPDYN MS 14 - III
PRESERVATION OF MASONRY STRUCTURES AND
INFRASTRUCTURES AGAINST NATURAL AND ANTHROPIC
RISKS: FROM THE PAST TO THE FUTURE ADVANCES

Tuesday
17:00 - 19:00

Salon des Roses B

MS Organizers: Michele Betti, Nicola Cavalagli, Francesco Clementi, Antonio Formisano, Salvador Ivorra Chorro, Gabriele Milani

Chair: Antonio Formisano

- C 26080** **KEYNOTE:** ON THE DYNAMICS OF MASONRY CHURCH: DISCONTINUOUS AND CONTINUOUS APPROACHES
Martina Di Giosaffatte, Mattia Schiavoni, Francesca Roscini, **Francesco Clementi**
- C 27726** SIMPLE INTERFACE ELEMENT EQUIPPED WITH THICKNESS FOR THE NON-LINEAR STATIC HETEROGENEOUS ANALYSIS OF MASONRY WALLS IN-PLANE LOADED: IMPLEMENTATION AND VALIDATION
Natalia Pingaro, **Gabriele Milani**
- C 25702** DYNAMIC ANALYSIS OF THE OUT-OF-PLANE BEHAVIOUR OF MASONRY FAÇADES USING RIGID BEAM MODEL
Daniele Baraldi, Gabriele Milani, Vasilis Sarhosis
- C 24950** COMBINED GENETIC ALGORITHM AND LIMIT ANALYSIS APPROACH FOR THE OPTIMAL DESIGN OF TIE RODS IN HISTORICAL MASONRY STRUCTURES
Martina Buzzetti, Gabriele Milani
- C 25837** A NOVEL HETEROGENEOUS LIMIT ANALYSIS TOOL WITH STEREOTOMY FOR THE ASSESSMENT OF MASONRY CURVED STRUCTURES
Natalia Pingaro, Mohammad Pourfouladi, Gabriele Milani

UNCECOMP MS 17 - II
BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE
AND ENGINEERING

Tuesday
17:00 - 19:00

Athena

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

Chair: Iason Papaioannou

- U 21175** A HYBRID VI-HMC APPROACH FOR ACCELERATED POSTERIOR INFERENCE IN BAYESIAN NEURAL NETWORKS
Ponkrshnan Thiagarajan, Tamer Zaki, Michael Shields

DAY 3

TUESDAY 17 JUNE

- U 21220** EMBEDDING MODEL FORM UNCERTAINTIES FOR BAYESIAN INFERENCE OF DISCREPANT SIMULATIONS
Daniel Andrés Arcones, Martin Weiser, Phaedon-Stelios Koutsourelakis, Jörg Unger
- U 21306** EFFICIENT TREATMENT OF THE MODEL ERROR IN THE CALIBRATION OF COMPUTER CODES: THE COMPLETE MAXIMUM A POSTERIORI METHOD
Omar Kahol, Pietro Marco Congedo, Enora Denimal-Goy, Olivier Le Maître
- U 21522** AN EFFICIENT INVERSE DESIGN APPROACH COMBINING BAYESIAN OPTIMIZATION AND INVERSION
Mihaela Chiappetta, Massimo Carraturo, Alexander Raßloff, Ferdinando Auricchio, Markus Kästner
- U 21424** BAYESIAN INFERENCE OF CONCRETE PROPERTIES FROM DEFORMATIONS AND MOISTURE LOSS UNDER VARIOUS DRYING CONDITIONS
David Šilhánek, Anna Kučerová, Petr Havlásek

COMPDYN MS 41
INNOVATIVE APPROACHES FOR SEISMIC ASSESSMENT OF BUILT HERITAGE: FROM CONVENTIONAL TO PIONEERING TECHNIQUES

Tuesday
17:00 - 19:00

Nafsika A

MS Organizers: *Shaghayegh Karimzadeh, Matteo Salvalaggio, Marco Donà, Pinar Usta, Vasco Bernardo*
Chair: *Shaghayegh Karimzadeh*

- C 25326** EFFECTIVENESS OF AN INTERNAL SEISMIC RETROFIT STRATEGY ADDRESSED TO LISBON PRE-CODE MASONRY BUILDINGS
Vasco Bernardo, Matteo Salvalaggio, Paulo Lourenço
- C 25636** SEISMIC FRAGILITY ANALYSIS OF MASONRY BUILDINGS USING REAL AND SIMULATED GROUND MOTION RECORDS
Daniel Caicedo, Shaghayegh Karimzadeh, Vasco Bernardo, Paulo B. Lourenço
- C 25345** STRUCT-STAINABILITY ASSESSMENT OF THE COLUMN-CAPREOLI A-TRUSSES OF THE SAN LORENZO AD SEPTIMUM MONASTERY AULA MAGNA
Luca Damiani, Ester Sallicandro, Luigi Massaro, Giorgio Frunzio, Roberto Serpieri
- C 25248** PRIORITIZATION OF METHODOLOGY FOR SEISMIC RETROFITTING OF HETEROGENEOUS BUILDING STOCKS
Giulia Scarabottolo, Marco Gaspari, Margherita Fabris, Luca Tosolini, Francesca da Porto
- C 25258** SURROGATE MODEL-BASED SEISMIC VULNERABILITY ANALYSIS OF HISTORIC MASONRY BUILDINGS: A NOVEL APPROACH INCORPORATING MATERIAL PARAMETER UNCERTAINTIES
Zhengxi Yang, Li Xu, Francesca da Porto, Marco Donà
- C 25861** LIQUEFACTION VULNERABILITY MODEL FOR URBAN AREAS: TOWARDS SEISMIC RISK ASSESSMENT IN CENTRES PRONE TO LIQUEFACTION
Alejandro Cruz, Nicola Chieffo, Shaghayegh Karimzadeh, Eimar Sandoval, Paulo Lourenço
- C 25371** AUTOMATIC RECOGNITION OF DAMAGES IN CULTURAL HERITAGE BUILDING IMAGES USING AN ENCODER-DECODER NETWORK
Yunpeng Yue, Hai Liu, Xiaoyu Liu, Francesca da Porto, Marco Donà

COMPdyn MS 31 - I
ADVANCES AND CHALLENGES IN THE ASSESSMENT OF EXISTING
BRIDGE STRUCTURES

Tuesday
17:00 - 19:00

Nafsika B

MS Organizers: *Marco Furinghetti, Tracy Becker, Simone Reale, Alberto Pavese*

Chair: *Marco Furinghetti*

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- C 25363** SEISMIC RISK ASSESSMENT OF A DETERIORATING RC BRIDGE INCLUDING REFINED MODELING OF CORROSION EFFECTS
Simone Reale, Marco Furinghetti, Alberto Pavese
- C 24757** PRESTRESSED CONCRETE BEAMS WITH ARTIFICIALLY DAMAGED STRANDS: PLAN OF EXPERIMENTAL TESTS AND NUMERICAL MODELING
Dario De Domenico, Amir Shamsaddinlou, Dario La Mazza, Monica Longo, Natale Maugeri, Paolo Longo, Davide Messina, Antonino Recupero
- C 24502** INFLUENCE OF CORROSION PATTERN AND CORROSION MODEL ON THE SEISMIC PERFORMANCE OF RC PIERS
Donatello Cardone, Giuseppe Perrone, Vito Possidente
- C 25965** VISION-BASED REAL-TIME MULTI-TARGET DYNAMIC MONITORING: LABORATORY TESTS AND APPLICATION TO A POST-TENSIONED CONCRETE BRIDGE
Fabio Micozzi, Francesco Allegranza, Michele Morici, Alessandro Zona, Andrea Dall'Asta
- C 25610** SIMPLIFIED SOLUTION FOR EVALUATING THE FOUNDATION INPUT MOTION OF EMBEDDED CAISSONS
Stefano Stacul, Cecilia Capotorti, Nunziante Squeglia

COMPdyn MS 12 - III
ERIES: ADVANCING SYNERGIES IN EARTHQUAKE AND WIND
ENGINEERING THROUGH LABORATORY TESTING

Tuesday
17:00 - 19:00

Nefeli A

MS Organizers: *Gerard J. O'Reilly, Gian Michele Calvi*

Chair: *Gerard J. O'Reilly*

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- C 24564** ENFRAG: ENHANCING STATE-DEPENDENT FRAGILITY THROUGH EXPERIMENTALLY VALIDATED ENERGY-BASED APPROACHES
Roberto Gentile, Giulia Angelucci, Jingren Wu, Marilisa Di Benedetto, Fabio Di Trapani, Paolo Morandi, Riccardo Milanese, Fabrizio Mollaioli, Gerard O'Reilly, Fabio Freddi, Fatemeh Jalayer
- C 25963** ERIES POUNDBACK2 PROJECT: PROGRESSES AND CHALLENGES ON AN SSI DECK-ABUTMENT IMPACT TEST
*Tansu Gokce, Hala Mehyar Abu Shehab, Cristoforo Demartino, Ziliang Zhang, Dimitris Karamitros, Ilias Dimitrakopoulos, Raffaele Di Laora, Raffaele De Risi, Adam Crewe, Matt Dietz, Tony Horseman, David Williams, Bruno Briseghella, Davide Lavorato, Tatjana Isakovic, Anastasios Sextos, George Mylonakis, Camillo Nuti, Andreas Kappos, **Flavia De Luca***
- C 25803** RECORDED DATA FROM REAL-SCALE FORCED VIBRATION TESTS ON DYNAMIC IMPEDANCES OF PILE GROUPS
Raffaele Di Laora, Raffaele Cesaro, Emmanouil Rovithis, Luca de Sanctis, George Anoyatis, Stjin Francois, Eleni Filoglou, Chiara Amendola, Georgia Kroupi, Anastasios Anastasiadis, Dimitris Pitilakis
- C 25327** DYNAMIC FIELD TESTING OF A 15-YEAR-OLD BASE ISOLATED RESIDENTIAL BUILDING
Aldo Rapone, Paolo M. Calvi, Giammaria Gabbianelli, Tracy C. Becker, Halûk Sucuoğlu, Bryan Chalarca, Igor Lanese, Elisa Rizzo Parisi, Filippo Dacarro, Gerard J. O'Reilly

DAY 3

TUESDAY 17 JUNE

- C 25198** OPTICAL METHODS FOR MEASURING THE SEISMIC RESPONSE OF A REINFORCE CONCRETE U-SHAPED CORE WALL IN SHAKE TABLE TESTS
Yunhyeok Han, Stefania Lo Feudo, Gwendal Cumunel, Ryan Hoult, Alex Bertholet, Denis Garnier, Paulo Candeias, António Correia, João Pacheco de Almeida

UNCECOMP MS 20
ADVANCING SCIENTIFIC DISCOVERY WITH SCIML: NEURAL OPERATORS, GENERATIVE MODELING, AND PHYSICS-INFORMED TECHNIQUES

Tuesday
17:00 - 19:00

Nefeli B

MS Organizers: *Daniele Venturi, Panos Stinis, Paris Perdikaris*
Chair: *Paris Perdikaris*

- U 21365** MICROMECHANICS TRANSFORMER FOR PREDICTING MECHANICAL RESPONSES OF HETEROGENEOUS MATERIALS
Paris Perdikaris
- U 20946** AUTOMATED DEEP NEURAL NETWORK ENSEMBLES FOR UNCERTAINTY QUANTIFICATION IN SCIENTIFIC MACHINE LEARNING
Romain Egele, Prasanna Balaprakash, Romit Maulik
- U 21312** UNCERTAINTY PROPAGATION IN FEED-FORWARD NEURAL NETWORK MODELS
Daniele Venturi, Jeremy Diamzon
- U 21345** VIBRATIONS ANALYSIS OF STRUCTURAL PROPERTIES WITH UNCERTAINTIES USING OSCILLATORY PHYSICS-INFORMED NEURAL NETWORKS (OPINN)
Stefan Hildebrand, Sandra Klinge
- U 21494** NEURAL GALERKIN NORMALIZING FLOW FOR BAYESIAN INFERENCE OF STOCHASTIC VOLATILITY MODELS
Riccardo Saporiti, Fabio Nobile, Li Zeng
- U 21035** SUPERVISED LEARNING OF GENERATIVE MODELS FOR HIGH-DIMENSIONAL SAMPLING
Hoang Tran, Guannan Zhang, Feng Bao, Zezhong Zhang

COMPDYN MS 35
DYNAMICS OF SOFT AND ULTRA-SOFT NATURAL MATERIALS AND METAMATERIALS: VIBRATION, IMPACT ANALYSIS AND OPTIMIZATION-BASED DESIGN OF THE MICROSTRUCTURE

Tuesday
17:00 - 19:00

Rotisserie

MS Organizers: *Giuseppina Uva, Siro Casolo, Vito Diana, Luis Carlos Martins Da Silva*
Chair: *Giuseppina Uva*

- C 25430** ENERGY ABSORBING MULTILAYERED SELF-RECOVERING METAMATERIALS WITH ALTERNATING CHIRALITY FOR VIBRATION ATTENUATION
Vito Diana, Andrea Bacigalupo, Luigi Gambarotta
- C 25140** EXPLORING THE MECHANICAL RESPONSE OF A DISCRETE-BASED HEURISTIC MOLECULAR MODEL WITH NONLINEAR CONSTITUTIVE RESPONSE FOR IMPACT PROBLEMS
Luis Carlos Martins da Silva, Nicola Zani, Siro Casolo
- C 24785** DYNAMIC PERFORMANCE OF ARCHITECTED BEAM STRUCTURES
Irfan Ul Hassan, Agyapal Singh, Dimitrios Rodopoulos, Andrea Bergamini, Nikolaos Karathanasopoulos

- C 25149** LOCALIZED TOPOLOGICAL STATES VIA COUNTER-PROPAGATING WAVE MODE CONVERSION IN SC-DOPED ALN MICROELECTROMECHANICAL DEVICES
Jacopo Maria De Ponti, Xuanyi Zhao, Luca Iorio, Tommaso Maggioli, Marco Colangelo, Davaji Benyamin, Raffaele Ardito, Richard V. Craster, Cristian Cassella
- C 25599** MULTIFIELD IDENTIFICATION OF DISCRETE SYSTEMS
Francesca Fantoni, Andrea Bacigalupo, Luigi Gambarotta
- C 26062** PREVENTING VOLUMETRIC LOCKING IN SIMULATIONS OF NEARLY-INCOMPRESSIBLE SOFT TISSUES USING PERIDYNAMIC CORRESPONDENCE MODELS
Francesco Scabbia, Vito Diana, Francesca Fantoni, Mirco Zaccariotto, Ugo Galvanetto
- C 25177** DYNAMIC BEHAVIOUR OF COMPRESSED MASONRY COLUMNS REINFORCED THROUGH INNOVATIVE TECHNIQUES
Luigi Salvatore Rainone, Luis Carlos Martins da Silva, Giuseppina Uva, Siro Casolo
- C 25333** CHARACTERIZATION OF 3D PRINTED TPU: IMPACT OF GEOMETRIC IMPERFECTIONS ON WAVE PROPAGATION IN LATTICE METAMATERIALS
Daniela Addessi, Cristina Gatta, Alessandra Paoloni, Luca Parente, Rachele Zuppi

COMPDYN MS 57 - III
ADVANCEMENTS IN OPENSEES APPLICATIONS FOR EARTHQUAKE ENGINEERING

Tuesday
17:00 - 17:40

Alpha

MS Organizers: *Fabio Di Trapani, Igor Tomić, Massimo Petracca, Cristoforo Demartino*
 Chair: *Fabio Di Trapani*

- C 25842** OPENSEES-BASED AUTOMATED COMPUTATIONAL TOOL FOR THE STRUCTURAL DESIGN OF RC MOMENT-RESISTING FRAME BUILDINGS
Thomas Rojas-Vallejo, Maritzabel Molina-Herrera, Orlando Arroyo, Jesús Villalba-Morales
- C 25969** OPENSEES-BASED PROCEDURE FOR THE COMPUTATION OF CONSTANT-DUCTILITY SEISMIC PARAMETERS
Najib Bouaanani, Ehsan Rowzeh

UNCECOMP TS 16
SYSTEM RELIABILITY ANALYSIS, DESIGN AND RISK ASSESSMENT

Tuesday
17:40 - 19:00

Alpha

Chair: *Stergios-Aristoteles Mitoulis*

- U 21282** TIERED MULTI-SCALE DAMAGE ASSESSMENT OF CRITICAL INFRASTRUCTURE USING COHERENCE CHANGE DETECTION AND SAM-BASED DEEP LEARNING
Nadiia Kopiika, Sotirios Argyroudís, Jelena Ninic, Zehao Ye, Stergios-Aristoteles Mitoulis
- U 21286** SENSITIVITY ANALYSIS FOR BAYESIAN OPTIMIZATION WITH UNCERTAINTIES
Noé Fellmann, Christophette Blanchet, Céline Helbert, Delphine Sinoquet, Adrien Spagnol
- U 21124** ACTIVE KRIGING FOR RELIABILITY ANALYSIS OF SEQUENTIAL MODELS
Thomas Constant, Cécile Mattrand, Laëtitia Fouché, Nicolas Gayton
- U 21502** COMPARISON OF ARTIFICIAL INTELLIGENCE MODELS IN TERMS OF RISK AND RELIABILITY IN SAFETY-CRITICAL ENVIRONMENTS
László Ady, Dániel Tokody, Péter János Varga, György Schuster

U 21520 RELIABILITY ANALYSIS OF CRACKED STRUCTURES WITH UNCERTAIN-BUT-BOUNDED DAMAGE
Roberta Santoro

COMPDYN MS 48 - I
DEVELOPING ACCURATE NONLINEAR NUMERICAL MODELS BASED ON EXPERIMENTAL RESULTS

Tuesday
17:00 - 19:00

Gamma

MS Organizers: *Francesca Barbagallo, Marco Terrenzi, Mariano Di Domenico, Cristina Cantagallo*
Chair: *Francesca Barbagallo*

C 24423 **KEYNOTE:** MULTI-STAGED OPTIMIZATION FRAMEWORK FOR THE EFFICIENT CALIBRATION OF DAMAGE MECHANICS MODELS
Mostafa Mobasher, Roshan Saji, Panos Pantidis, Lampros Svolos

C 25017 SHAKING-TABLE TESTS ON 3D SCALED RC STRUCTURE FOR THE ASSESSMENT OF FLOOR RESPONSE SPECTRA
Mariano Di Domenico, Paolo Ricci

C 25005 VALIDATION OF A NUMERICAL MODEL FOR THE SIMULATION OF THE CYCLIC RESPONSE OF RC COLUMNS WITH BUCKLING-PRONE LONGITUDINAL REBARS
Melina Bosco, Andrea Floridia, Dario Panarelli, Pier Paolo Rossi, Nino Spinella

C 25288 VALIDATION OF A NUMERICAL MODEL TO SIMULATE THE CYCLIC RESPONSE OF SEISMIC LINKS
Melina Bosco, Marco Caragliano, Elga Mangiameli, Pier Paolo Rossi

C 25309 FORCE-BASED 3D ELEMENT FOR RC AND PC BEAMS WITH BOND SLIP, AND TIME-DEPENDENT EFFECTS
Luca Parente, Daniela Addessi, Enrico Spacone

C 25468 HIGH-CYCLE FATIGUE OF MILD AND HIGH-STRENGTH STEEL COMPONENTS FOR OFFSHORE ENERGY APPLICATIONS
Ilias Gavrilidis, Theocharis Papatheocharis, Spyros Karamanos

COMPDYN MS 18
SEISMIC INTERVENTIONS AND SIMULATION FOR REGIONAL SCALE RETROFITTING

Tuesday
17:00 - 19:00

Epsilon

MS Organizers: *Ciro Del Vecchio, Marco Di Ludovico, Hasan Huseyin Aydogdu, Alper Ilki*
Chair: *Ciro Del Vecchio*

C 24517 ANALYTICAL MODEL OF FRP SPIKE ANCHORS IN THE SEISMIC RESTORATION OF RC MEMBERS
Ciro Del Vecchio, Hothaifa Alibeigibeni, Marco Di Ludovico, Andrea Prota

C 25856 EXPERIMENTAL ASSESSMENT OF SHEAR-CRITICAL EXISTING REINFORCED CONCRETE COLUMNS STRENGTHENED WITH PRE-STRESSED STEEL STRIPS
Maria Teresa De Risi, Carlo Del Gaudio, Gerardo Mario Verderame

C 24446 A FRAMEWORK ON REDUCING THE SEISMIC RISK ON A REGIONAL SCALE: A CASE STUDY FOR ISTANBUL
Hasan Huseyin Aydogdu, Masaki Maeda, Alper Ilki

C 25052 THE EXTERNAL THERMAL INSULATION COMPOSITE SYSTEM AS A MEASURE OF CONFORMING EARTHQUAKE RESILIENT NEAR ZERO ENERGY BUILDINGS IN A REGIONAL SCALE
Anthimos Anastasiadis, Emmanouil Golias, Christos Chatziastrou

- C 25262** NUMERICAL MODELLING AND FRP STRENGTHENING OF REINFORCED CONCRETE BUILDINGS FOR REGIONAL SCALE RETROFITTING

Carmine Moliterno, Ciro Del Vecchio, Ozgur Yurkadul, Ladislav Routil, Marco Di Ludovico

- C 25557** TOWARDS A SEISMIC VULNERABILITY DATABASE FOR BENEFIT-COST ANALYSIS CONSIDERING RETROFITTING INTERVENTIONS - AN EXAMPLE FROM ISTANBUL

Furkan Narlıtepe, Al Mouayed Bellah Nafeh, Karim Aljawhari, Vitor Silva

- C 24362** CIRCULARITY THROUGH REPAIR ACTIONS IN HEAVILY DAMAGED RC SUBSTANDARD COLUMNS

Özgür Yurdakul, Petr Vnenk, Ladislav Routil, Bohumil Culek, Özgür Avşar

- C 24573** FRP STRENGTHENING OF BEAM-COLUMN JOINTS: EXPERIMENTAL VALIDATION AND ANALYTICAL MODELLING

Martha Karabini, Ciro Del Vecchio, Theodoros Rousakis, Marco Di Ludovico, Andrea Prota

COMPDYN MS 72
DIGITAL TOOLS AND INNOVATIVE MONITORING SYSTEMS FOR BUILT
CULTURAL HERITAGE CONSERVATION

Tuesday
17:00 - 19:00

Room A

MS Organizers: *Armando La Scala, Maria Francesca Sabbà, Marco Francesco Funari, Nicola Ivan Giannoccaro, Dora Foti*

Chair: *Armando La Scala*

- C 24827** MACHINE LEARNING APPROACH FOR SENSOR PLACEMENT OPTIMIZATION

Armando La Scala, Maria Francesca Sabbà, Fabio Rizzo, Dora Foti

- C 24828** DYNAMIC IDENTIFICATION AND DIGITAL TWIN DEVELOPMENT FOR A ROMAN MASONRY BRIDGE: A METHODOLOGICAL APPROACH

Dora Foti, Armando La Scala, Nicola Ivan Giannoccaro, Fabio Rizzo, Maria Francesca Sabbà

- C 24984** APPLICATION OF A NON-DESTRUCTIVE APPROACH FOR STRUCTURAL HEALTH MONITORING ON REAL-WORLD STRUCTURES

Giada Faraco, Andrea Vincenzo De Nunzio, Nicola Ivan Giannoccaro, Arcangelo Messina

- C 25773** INTEGRATED APPROACH TO EVALUATE THE SEISMIC BEHAVIOR OF A FORMER CHURCH CONVERTED TO MUSEUM: MARINO MARINI MUSEUM IN FLORENCE

Vieri Cardinali, Maria Teresa Cristofaro, Mario De Stefano, Antonino Maria Marra, Gianfranco Stipo, Marco Tanganelli, Nicoletta Vettori

- C 25478** ENERGY MANAGEMENT OF HISTORICAL BUILDINGS THROUGH A AC-DC MICROGRID ARCHITECTURE, MONITORING AND CONTROL

Giovanni Giannoccaro, Massimo La Scala

- C 25003** OPTIMIZING BUILDING SCAN DATA: COMPARING LEVELS OF ACCURACY AND CLOUD DETAIL IN THE BUILDING RENOVATION PROCESS

Andrea Hrubovcakova, Peter Mesaros, Marcela Spisakova

COMPDYN TS 15 - I
OPTIMUM DESIGN AND CONTROL IN STRUCTURAL DYNAMICS
AND EARTHQUAKE ENGINEERING

Tuesday
17:00 - 19:00

Room B

Chair: *Petros Sideris*

- C 25852** STRUCTURAL TESTING OF FULL-SCALE 3D PRINTED HEMPCRETE WALLS UNDER OUT-OF-PLANE LOADING
Daron Smith, Sumedh Sharma, Mohammad Eltahlawi, Petros Sideris
- C 24741** EFFECTS DUE TO CONCRETE CONFINEMENT ON THE SEISMIC RELIABILITY OF RC FRAMES
Diego Gino, Gabriele Neri, Gaetano Alfano
- C 24562** COMPARATIVE ANALYSIS OF THREE METAHEURISTIC ALGORITHMS FOR TRUSS SIZE AND TOPOLOGY OPTIMIZATION
Sofia Noreña Salazar, Luis Augusto Lara Valencia, Leandro Zapata Longas
- C 24462** OPTIMAL DESIGN OF A TUNED MASS DAMPER USING A WHALE OPTIMIZATION ALGORITHM
Carlos Daniel Hincapié Ospina, Luisa Fernanda Agudelo Gallego, Luis Augusto Lara Valencia
- C 24480** DATA-DRIVEN MODELING OF STRUCTURAL DYNAMICS: IMPROVING MEASUREMENT NOISE ROBUSTNESS WITH AUGMENTED DYNAMIC MODE DECOMPOSITION
Mohamed Abdennadher, Francisco Williams-Riquer, Duy Anh Dao, Jürgen Grabe
- C 24497** OPTIMAL DESIGN OF A TUNED LIQUID COLUMN DAMPER USING A WHALE OPTIMIZATION ALGORITHM
Luisa Fernanda Agudelo Gallego, Carlos Daniel Hincapié Ospina, Luis Augusto Lara Valencia
- C 24780** DISCRETE ELEMENT MODELING OF T-BAGS AND APPLICATIONS TO LOW-COST SEISMIC VIBRATION REDUCTION IN STRUCTURES
Joshua Panganiban, Ali Vakilazadsarabi, Kinji Takeuchi, Yasuo Tomono, Tatsunori Matsumoto

COMPDYN TS 2 - II
ALGORITHMS FOR STRUCTURAL HEALTH MONITORING

Tuesday
17:00 - 19:00

Room C

Chair: *Sotiria Stefanidou*

- C 26139** MODAL IDENTIFICATION AND DAMAGE DETECTION OF AN EXISTING BRIDGE USING ON-SITE MEASUREMENTS
Sotiria Stefanidou, Konstantinos Mixios, Olga Markogiannaki, Vassilis Papanikolaou
- C 26210** STRUCTURAL IDENTIFICATION OF A TWO-SPAN R/C HIGHWAY BRIDGE USING VIBRATIONAL DATA AND LASER-BASED SURVEYING
Olga Markogiannaki, Konstantinos Mixios, Sotiria Stefanidou, Vassilis Papanikolaou, Kostas Kalogirou, Lefteris Tentolouris
- C 26049** MODAL DYNAMIC IDENTIFICATION OF THE HISTORIC SAN MICHELE BRIDGE (ITALY, 1889)
Michele Guerini, Lorenzo Ermolli, Charikleia Stoura, Rosalba Ferrari, Vasilis Dertimanis, Eleni Chatzi, Egidio Rizzi
- C 25194** FREE VIBRATIONS OF FRAME STRUCTURES ADOPTING FUNCTIONALLY GRADED MATERIALS FOR DAMAGE MODELLING
Annalisa Greco, Lorenzo Ledda
- C 25271** AI-DRIVEN CRACK ANALYSIS FOR STRUCTURAL HEALTH MONITORING OF ENGINEERING CEMENT COMPOSITE : A LABORATORY STUDY
Azadeh Yeganehfallah, Carlo Alberto Avizzano, Silvia Caprili, Arash Yeganehfallah

C 25496 HIGH-ACCURACY DAMAGE IDENTIFICATION BUILT UPON HIERARCHICAL INVERSE ANALYSIS

Yang Zhang, Jiong Tang

C 26002 COMBINING DISPLACEMENT AND ACCELEROMETRIC DATA FOR STRUCTURAL HEALTH ASSESSMENT

Federico Ponsi, Ghita Eslami Varzaneh, Veronica Dallari, Giorgia Ghirelli, Laura Dieci, Elisa Bassoli, Loris Vincenzi

COMPdyn MS 38 - II
STRUCTURAL HEALTH MONITORING AND DAMAGE DETECTION IN EXISTING STRUCTURES AND INFRASTRUCTURES: ADVANCED TECHNOLOGIES, DATA ANALYSIS, AND DAMAGE THRESHOLDS

Tuesday
17:00 - 17:40

Room D

MS Organizers: *Rocco Ditommaso, Nicla Lamarucciola, Felice Carlo Ponzo*

Chair: *Rocco Ditommaso*

C 24932 REFINING PERIOD-HEIGHT RELATIONSHIPS FOR IMPROVED SEISMIC DESIGN OF INFILLED RC BUILDINGS ACROSS LIMIT STATES

Rocco Ditommaso, Nicla Lamarucciola, Felice Carlo Ponzo

C 25348 DOMAIN ADAPTATION FOR REGRESSION IN SHM

Daniel Clarkson, Timothy Rogers, Aidan Hughes, Nikolaos Dervilis

COMPdyn MS 25
A PATH TOWARDS EARTHQUAKE-RESILIENT COMMUNITIES: NOVEL METHODS FOR ASSESSING RISK AND RELIABILITY

Tuesday
17:40 - 19:00

Room D

MS Organizers: *Aikaterini Kyprioti, Maria Koliou*

Chair: *Maria Koliou*

C 24870 COMMUNITY RESILIENCE ANALYSIS FOR SEISMIC HAZARDS USING AN AGENT-BASED MODELING APPROACH

Xu Han, Maria Koliou

C 27297 RESILIENT INFRASTRUCTURES FOR RESILIENT COMMUNITIES: ADVANCING METHODS FOR ASSESSING MULTI-HAZARD FUNCTIONAL IMPACT SCENARIOS

Luisa Lavalle, Maria Luisa Villani, Sonia Giovinnazzi

C 24875 MULTI-LEVEL RISK ASSESSMENT OF WOOD RESIDENTIAL BUILDINGS SUBJECTED TO SEISMIC LOADS

Yosef Gebreyesus, Maria Koliou

C 25561 RAPID EARTHQUAKE LOSS ASSESSMENT THROUGH DIGITAL TWINS: A MACHINE LEARNING AND SENSOR-BASED APPROACH

Amir Taherian, Vitor Silva, Al Mouayed Bellah Nafeh, Gerard O'Reilly, Romeu Vicente

COMPdyn MS 45 - II
SEISMIC RISK ASSESSMENT AND RETROFITTING STRATEGIES FOR STEEL STORAGE RACKS

Tuesday
17:00 - 19:00

VIP Room

MS Organizers: *Marco Donà, Giammaria Gabbianelli, Gianrocco Mucedero, Dimitris Tsarpalis*

Chair: *Marco Donà*

C 25039 SEISMIC ASSESSMENT OF AN INNOVATIVE ENERGY DISSIPATION DEVICE FOR STEEL STORAGE PALLET RACKS

Giammaria Gabbianelli, Andrea Tonello, Aldo Rapone, Bryan Chalarca

DAY 3

TUESDAY 17 JUNE

- C 25388** SEISMIC LOSS ESTIMATION OF STEEL PALLET RACKS
Gianrocco Mucedero, Giammaria Gabbianelli, Ricardo Monteiro
- C 25434** EXPERIMENTAL BEHAVIOUR OF REDUCED-SECTION THIN WALLED DIAGONALS
*Agnese Natali, **Francesco Morelli***
- C 25037** PARAMETRIC STUDY ON THE MODELLING ASSUMPTIONS OF WOOD PALLET SLIDING
Bryan Chalarca, Giammaria Gabbianelli, Aldo Rapone
- C 25094** SEISMIC DEMAND ON STEEL STORAGE PALLET RACKS LOCATED ON UPPER FLOORS
Santiago Rodas-Orrego, Juan Herrera, Bryan Chalarca, Giammaria Gabbianelli, Daniel Bedoya-Ruiz

COMPDYN MS 8 - I

ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN DESIGN AND ASSESSMENT OF STRUCTURES

Wednesday
9:00 - 11:00

Delphi

MS Organizers: *George Markou, Nikolaos P. Bakas, Savvas A. Chatzichristofis*Chair: *George Markou*

- C 25536** DEVELOPMENT OF PREDICTIVE MODELS FOR COMPUTING THE STRENGTH OF SFRC BEAMS THROUGH A LARGE DATASET

Kevin Braun, Koketso Lucas, George Markou, Chris Roth

- C 25537** A PARAMETRIC INVESTIGATION OF TRAIN-TEST RATIOS FOR MACHINE LEARNING ALGORITHMS ANALYSING LOAD-DISPLACEMENT BEHAVIOUR IN REINFORCED CONCRETE PILES

Kevin Braun, George Markou, Chris Roth

- C 24693** TRANSFER LEARNING SCHEME TO EFFICIENTLY ASSESS THE FLEXURAL STRENGTH OF FIBER-REINFORCED CONCRETE WITH STEEL AND POLYPROPYLENE FIBERS

Diana Vargas, Carlos Benedetty, Luis Bedriñana

- C 26142** DEVELOPING AN ACCURATE PREDICTIVE MODEL FOR COMPUTING THE SHEAR CAPACITY OF RC COLUMNS THROUGH THE USE OF ADVANCED MACHINE LEARNING ALGORITHMS

David Galbraith, George Markou, Anthos Ioannou

- C 26143** USE OF HPC IN THE DEVELOPMENT OF LARGE DATASETS FOR THE DEVELOPMENT OF PREDICTIVE MODELS THROUGH MACHINE LEARNING ALGORITHMS

Duan Calitz, Asma Yahiaoui, George Markou, Saida Dorbani

- C 25364** APPLICATION OF MACHINE LEARNING ALGORITHMS IN THE INVESTIGATION OF THE DYNAMIC RESPONSE OF MOMENT-RESISTING FRAMES

Todor Zhelyazov

- C 25999** USE OF MACHINE LEARNING TO DETERMINE MECHANICAL PROPERTIES OF NON-ENGINEERED MASONRY HOUSING IN COLOMBIA

Juan Reyes, Julian Carrillo, Santiago Portilla, Juan E. Lasso

UNCECOMP TS 17 - III

UNCERTAINTY QUANTIFICATION

Wednesday
9:00 - 11:00

Salon des Roses A

Chair: *Olivier Ezvan*

- U 21000** NEURAL NETWORK HYPERREDUCTION FOR PARAMETERIZED REDUCED-ORDER MODELS IN NONLINEAR STOCHASTIC DYNAMICS

Olivier Ezvan, Christophe Desceliers, Christian Soize, Evangéline Capiez-Lernout

- U 21532** ADDRESSING EPISTEMIC UNCERTAINTY IN STATISTICAL TOLERANCE ANALYSIS: A NON-DETERMINISTIC APPROACH

Sonia Carolina Garcia Gomez, Pierre Beaurepaire, Nicolas Gayton, Chahrazed Amrane

- U 21454** TRAINING AND DEPLOYMENT OF A DEEP ABSTAINING CLASSIFIER UNDER FEDERATED LEARNING

Cristina Garcia Cardona, Jamaludin Mohd Yusof

- U 25031** IDENTIFICATION OF THE LATERAL TRACK IRREGULARITIES FROM THE BEHAVIOR OF THE TRAIN'S AXLES ON A SURROGATE RAILWAY DYNAMICS MODEL

Malek Chihaoui, Denis Duhamel, Christine Funfschilling, Guillaume Perrin

DAY 4

WEDNESDAY 18 JUNE

U 21271 HOMOGENIZATION UNDER POLYMORPHIC UNCERTAINTY BASED ON PHYSICALLY AUGMENTED NEURAL NETWORKS

Felix Harazin, Wolfgang Graf, Michael Kaliske

U 21435 A NEW GRADIENT-BASED ROBUST OPTIMIZATION FOR HIGH DIMENSIONAL PROBLEM USING GRADIENT-BASED POLYNOMIAL CHAOS EXPANSION AND ACTIVE SUBSPACE

Imane Fadli, Joel Brezillon, Jean-Christophe Jouhaud

COMPDYN MS 42 - I SEISMIC RISK ASSESSMENT AND MITIGATION OF MASONRY ARCHITECTURAL HERITAGE

Wednesday
9:00 - 11:00

Salon des Roses B

MS Organizers: *Cristina Cantagallo, Francesca Mattei, Diego Alejandro Talledo, Mattia Zizi*

Chair: *Cristina Cantagallo*

C 26043 APPLICATION OF HYBRID QUANTITATIVE-QUALITATIVE MODELS FOR SEISMIC VULNERABILITY OF HISTORIC CITY CENTERS

Diego Alejandro Talledo, Irene Rocca, Luisa Berto, Anna Saetta

C 25276 MULTILEVEL SEISMIC VULNERABILITY ASSESSMENT OF AN ITALIAN MEDIEVAL BELL TOWER

Maddalena Della Pietra, Mattia Zizi, Corrado Chisari, Gianfranco De Matteis

C 25354 INTEGRATED PROCEDURES FOR KNOWLEDGE AND MONITORING OF EXISTING BUILDINGS: APPLICATION TO CASE STUDIES

Michele D'Amato, Antonio Di Cesare, Rocco Ditommaso, Nicla Lamarucciola, Anna Lo Monaco, Antonella Ranaldo, Roselena Sulla, Felice Ponzo

C 25168 ADVANCES IN SEISMIC VULNERABILITY ASSESSMENT OF HISTORIC MASONRY BUILDINGS: INSIGHTS FROM THE MW5.4 ZAGREB (CROATIA) EARTHQUAKE OF MARCH 22, 2020

Christoph Unterweger, Amel Karic, Galeb El Chabaan

C 25292 AN INNOVATIVE AGENT-BASED MODEL FOR RISK ASSESSMENT AND COMMUNITY RESPONSE IN SMALL TOWNS

Alessio Barbaro Chisari, Roberto Gueli, Antonio Amatore, Giuseppe Giadone, Miriam Raccuglia, Rosaria Ausilia Giandolfo, Emanuele Spampinato, Wladimiro Carlo Patatu

UNCECOMP MS 17 - III BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE AND ENGINEERING

Wednesday
9:00 - 11:00

Athena

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

Chair: *Costas Papadimitriou*

U 21224 BAYESIAN INVERSION WITH ADAPTIVELY-REFINED SURROGATE MODELS FOR HIGH-DIMENSIONAL UNCERTAINTY QUANTIFICATION

Giovanni Angelo Meles, Stefano Marelli, Niklas Linde

U 21470 EFFICIENT VARIATIONAL BAYESIAN FRAMEWORK FOR REAL-TIME STRUCTURAL MODEL UPDATING WITH STREAMING DATA

Xinyu Jia, Wang-Ji Yan, Iason Papaioannou, Costas Papadimitriou, Daniel Straub

U 21225 BAYESIAN ESTIMATION OF SEISMIC FRAGILITY CURVES BASED ON VARIATIONAL REFERENCE PRIORS USING NEURAL NETWORKS

Nils Baillie, Antoine Van Biesbroeck, Cyril Feau, Clément Gauchy

- U 21308** A BLACK BOX VARIATIONAL INFERENCE SCHEME FOR BAYESIAN INFERENCE WITH DEMANDING PHYSICS-BASED FORWARD MODELS
Gil Robalo Rei, Jonas Nitzler, Maximilian Dinkel, Christoph Schmidt, Wolfgang Wall
- U 21426** AN ACTIVE LEARNING APPROACH USING RATIONAL PCE FOR FREQUENCY DOMAIN BASED BAYESIAN MODEL UPDATING
Felix Schneider, Iason Papaioannou, Bruno Sudret, Gerhard Müller
- U 21529** TOWARDS HIGHER INFORMATION GAIN FROM BAYESIAN CALIBRATION IN REAL-WORLD ENGINEERING APPLICATIONS
Maximilian Dinkel, Wolfgang Wall

UNCECOMP MS 13 - I**MONTE CARLO SAMPLING FOR STOCHASTIC SOLVERS: ADVANCES IN UNCERTAINTY QUANTIFICATION****Wednesday**
9:00 - 11:00**Nafsika A**MS Organizers: *Elisa Iacomini, Emil Lønbak*Chair: *Emil Lønbak*

- U 21009** INVESTIGATING UNCERTAINTY IN TRAFFIC FLOW MODELING: MULTI-LEVEL MONTE CARLO AND MULTI-FIDELITY APPROACHES
Elisa Iacomini
- U 21021** MULTI-FIDELITY APPROACHES FOR UNCERTAINTY QUANTIFICATION IN SIR AND AGE-STRUCTURED EPIDEMIOLOGICAL MODELS
Federica Ferrarese
- U 21261** ADAPTIVE STRATIFIED SAMPLING FOR NON-SMOOTH PROBLEMS: APPLICATION TO UPSCALING AND FAULT LEAKAGE IN CO₂ STORAGE
Per Pettersson, Sebastian Krumscheid, Sarah Gasda, Eirik Keilegavlen, Tor Harald Sandve
- U 21299** MULTI-ORDER MONTE CARLO APPROACH LEVERAGING HIERARCHIES OF IMEX RUNGE-KUTTA SCHEMES
Giulia Bertaglia, Lorenzo Pareschi
- U 21172** PARAMETER ESTIMATION IN NON-LINEAR REGRESSION OF SHRINKAGE AND DEFORMATIONS INDUCED BY VARIED DRYING REGIMES IN CONCRETE
Michal Zdražil, Daniela Jarušková
- U 21231** ESTIMATING NESTED INTEGRALS USING RANDOMIZED DOUBLE-LOOP QUASI-MONTE CARLO
Arved Bartuska, Andre Carlon, Luis Espath, Sebastian Krumscheid, Raul Tempone

COMPDYN MS 31 - II**ADVANCES AND CHALLENGES IN THE ASSESSMENT OF EXISTING BRIDGE STRUCTURES****Wednesday**
9:00 - 11:00**Nafsika B**MS Organizers: *Marco Furinghetti, Tracy Becker, Simone Reale, Alberto Pavese*Chair: *Simone Reale*

- C 25646** ASSESSMENT OF STRENGTHENING TECHNIQUES FOR PRESTRESSED REINFORCED CONCRETE BRIDGES: A COMPARATIVE ANALYSIS
Valentina Picciano, Giuseppe Santarsiero, Antonio Paternoster, Andrea Digrisolo
- C 25910** A REFINED FINITE ELEMENT MODEL FOR THE ASSESSMENT OF NIAGARA-TYPE OVERPASS BRIDGES
Marco Gaetani d'Aragona, Antonino Recupero, Andrea Prota

DAY 4

WEDNESDAY 18 JUNE

- C 24856** NUMERICAL EVALUATION OF THE SEISMIC PERFORMANCE OF BRIDGES MADE OF UHPC AND TITANIUM ALLOY REINFORCING BARS
Luis Alberto Bedriñana, Jorge Atusparia, Heider Mendoza, Mahesh Acharya, Mustafa Mashal
- C 25158** MACHINE LEARNING APPROACH TO MODELLING WHEEL-RAIL CONTACT FORCES IN HYBRID VEHICLE-STRUCTURE INTERACTION ALGORITHM
Eduardo Granato, Pedro Montenegro, Túlio Bittencourt
- C 25833** INFLUENCE OF NONSYMMETRIC TRAIN LOADING IN THE DYNAMICS OF HIGH-SPEED BRIDGES
Pedro Museros, Carlos Riascos

UNCECOMP MS 2 - I PHYSICS-ENHANCED MACHINE LEARNING IN ENGINEERING

Wednesday
9:00 - 11:00

Nefeli A

MS Organizers: *Alice Cicirello, Elizabeth Cross, Eleni Chatzi*

Chair: *Eleni Chatzi*

- U 21550** UNCERTAINTY EFFECTS ON PHYSICS-BIASES AND MEASUREMENTS COMBINATION FOR EQUATION DISCOVERY
Alice Cicirello
- U 21297** INCLUDING PRIOR KNOWLEDGE IN COMPOSITIONAL GAUSSIAN PROCESSES
Matthew Jones, Elizabeth Cross
- U 21057** ONLINE ADAPTATION OF SINDy VIA EXTENDED KALMAN FILTER
Luca Rosafalco, Paolo Conti, Andrea Manzoni, Stefano Mariani, Attilio Frangi
- U 22046** EXTRAPOLATING PLATE DYNAMICS THROUGH NEURAL DIFFERENTIAL EQUATIONS
Taniya Kapoor, Anastasios Stamou, Michalis Fragiadakis
- U 21428** IDENTIFYING TIME-VARYING MODAL PARAMETERS FOR OFFSHORE WIND TURBINES WITH PHYSICS-ENHANCED MACHINE LEARNING
Melisa Bozaci, Alice Cicirello

COMPDYN MS 23 - I ADVANCED NUMERICAL METHODS IN DYNAMICS, PARTITIONED ANALYSIS AND COUPLED PROBLEMS

Wednesday
9:00 - 11:00

Nefeli B

MS Organizers: *Radek Kolman, Jin-Gyun Kim, José A. González, K.C. Park*

Chair: *K.C. Park*

- C 25762** INVERSE-FORWARD TIME INTEGRATION METHODS FOR REAL-TIME OPERATIONAL SOURCE IDENTIFICATION
Jin-Gyun Kim, Hyunwoo Baek, Seungin Oh
- C 24964** A STUDY OF MULTI-PHYSICS MODE SYNTHESIS FOR VIBRO-ACOUSTIC INTERACTION WITH RESIDUAL MODAL FLEXIBILITY
Danyyal Shakaib Hussain, M. Faizan Baqir, Jin-Gyun Kim
- C 25193** A REDUCED ORDER FORMULATION FOR THE ELASTODYNAMIC BOUNDARY ELEMENT METHOD
Zainab Farooq, Amar Pashov, Geert Degrande, Stijn François

- C 25821** DISPLACEMENT-ONLY PARTITIONED METHOD TOWARD THE STRUCTURAL OPTIMIZATION
Seung-Hoon Kang, DuHyun Gong, SangJoon Shin, K. C. Park
- C 25892** DOMAIN DECOMPOSITION ANALYSIS FOR COUPLING THE BEAM AND SOLID ELEMENTS IN THE FIBER-REINFORCED COMPOSITES
Sangmin Lee, José González, Seung-Hoon Kang, SangJoon Shin

COMPDYN MS 54 - I**NOVEL TRENDS AND APPLICATIONS OF ISOLATION AND DISSIPATION DEVICES FOR IMPROVED RESILIENCE OF STRUCTURES TO EARTHQUAKES****Wednesday**
9:00 - 11:00**Rotisserie**MS Organizers: *Enrico Tubaldi, Laura Ragni, Dario De Domenico, Daniele Losanno*Chair: *Enrico Tubaldi*

- C 25250** VIBRATION CONTROL DEVICES WITH COMPLEX RATE-INDEPENDENT HYSTERETIC BEHAVIOR: RECENT MODELING AND IDENTIFICATION ADVANCEMENTS
Nicolò Vaiana, Luciano Rosati
- C 24679** OPTIMAL SEISMIC DESIGN OF IRREGULAR SHEAR FRAMES CONSIDERING ALTERNATIVE ISOLATION SYSTEMS AND DAMPERS
Ghazal Alwilly, Oren Lavan
- C 25065** EVALUATION OF CLUSTER-BASED AND RANDOM RECORD ASSIGNMENT HEURISTICS TO OPTIMIZE DAMPER DISTRIBUTIONS IN BUILDINGS SUBJECTED TO EARTHQUAKES
Oscar Contreras-Bejarano, Diego Lopez-Garcia, Jesus D. Villalba-Morales, Dario De Domenico
- C 25032** A PARAMETRIC STUDY OF FRICTION PENDULUM SYSTEMS FOR BASE-ISOLATED BUILDINGS: INSIGHTS INTO PERFORMANCE ACROSS SEISMIC INTENSITIES
Livia Fabbretti, Eleni Chatzi, Filippo Ubertini, Marco Breccolotti
- C 25624** DESIGN AND OPTIMIZATION OF NONSTRUCTURAL BISTABLE METAPANELS FOR NEW AND EXISTING BUILDINGS
Tugberk Guner, Oreste Bursi, Hasan Olmez
- C 24886** EXPERIMENTAL CONTROL OF THE MECHANICAL PROPERTIES OF PRESSURIZED FLUID VISCOUS DAMPERS OVER TWENTY YEARS AFTER THEIR PRODUCTION
Gloria Terenzi, Stefano Sorace, Carlo Vienni

COMPDYN MS 55 - I**OPTIMIZATION-DRIVEN DESIGN AND RETROFIT STRATEGIES FOR ENHANCING SUSTAINABILITY IN STRUCTURAL SYSTEMS****Wednesday**
9:00 - 11:00**Alpha**MS Organizers: *Cristoforo Demartino, Carlotta Contiguglia, Vittoria Borghese, Antonio P. Sberna, Nikola Tošić*Chair: *Vittoria Borghese*

- C 25174** INTEGRATING SEISMIC STRENGTHENING AND ENERGY EFFICIENCY FOR BUILDING RENOVATION: BIO-BASED INSULATION, BIPV, AND STRUCTURAL RETROFITS FOR MINIMAL DISRUPTION
Giuseppe Santarsiero, Fabio Parolini, Giuseppe Ventura, Jamal Ngoyaro, Pierluigi Bonomo, Valentina Picciano
- C 25137** SEISMIC RETROFITTING OPTIMIZATION OF RC BUILDINGS USING CROSS-LAMINATED TIMBER PANELS AND ACCOUNTING FOR MORPHOLOGY-BASED CRITERIA
Carlotta Contiguglia, Giuseppe Quaranta, Cristoforo Demartino

DAY 4

WEDNESDAY 18 JUNE

- C 25278** A MULTI-OBJECTIVE OPTIMIZATION FRAMEWORK TOWARDS DERIVING OPTIMAL VISCOUS DAMPER PROPERTIES FOR BASE ISOLATED RC BUILDINGS CORRESPONDING TO DIFFERENT SEISMIC SCENARIOS
Subhra Das, Sandip Das
- C 25255** MULTI-VARIABLE OPTIMISATION OF BUILDING SEISMIC RETROFITTING
Besim Yukseken, Gianrocco Mucedero, Ricardo Monteiro
- C 25586** PRELIMINARY FINITE ELEMENT ANALYSIS OF A MODULAR AND STANDARDIZED CONNECTION BETWEEN EXISTING BUILDING AND EXOSKELETON
Michele Bianchessi, Simone Labò, Alessandra Marini, Andrea Belleri, Chiara Passoni
- C 25627** SIMPLIFIED STRATEGIES OF FLUID VISCOUS DAMPERS' (FVDs) DESIGN FOR IN-PLANE AND IN ELEVATION IRREGULAR HYSTERETIC HIGH-RISE STRUCTURES
Maria Concetta Oddo, Liborio Cavaleri, Anthea Amato

COMPDYN MS 48 - II DEVELOPING ACCURATE NONLINEAR NUMERICAL MODELS BASED ON EXPERIMENTAL RESULTS

Wednesday
9:00 - 9:40

Gamma

MS Organizers: *Francesca Barbagallo, Marco Terrenzi, Mariano Di Domenico, Cristina Cantagallo*

Chair: *Mariano Di Domenico, Marco Terrenzi*

- C 25295** **KEYNOTE:** CALIBRATED FIBER MODEL FOR SEISMIC ANALYSIS OF DUCTILE RC COLUMNS WITH RIBBED BARS
Mariano Di Domenico, Francesca Barbagallo, Marco Terrenzi, Cristina Cantagallo, Paolo Ricci, Guido Camata, Edoardo Marino, Enrico Spacone, Gerardo Verderame
- C 25859** EXPERIMENTAL INVESTIGATION AND NONLINEAR MODELLING OF COLD-FORMED STEEL BUILT-UP SIGMA COLUMNS UNDER CYCLIC AXIAL LOADING
Mohammad Numan Aloo, Juan Diego Vargas Mendoza, Raffaele De Risi, Flavia De Luca, Christian Málaga-Chuquitaype

COMPDYN MS 70 BEHAVIOUR OF STRUCTURES AND INFRASTRUCTURES WITH DEGRADED/ CORRODED MEMBERS AND BEARINGS: EXPERIMENTAL CAMPAIGNS AND NUMERICAL APPLICATIONS

Wednesday
9:40 - 11:00

Gamma

MS Organizers: *Giuseppe Santarsiero, Vincenzo Manfredi, Angelo Masi, Valentina Picciano, Mayank Mishra*

Chair: *Giuseppe Santarsiero, Valentina Picciano*

- C 25124** RESIDUAL CAPACITY OF STRUCTURAL BEARINGS RETRIEVED FROM EXISTING ROADWAY BRIDGES: EXPERIMENTAL CHARACTERIZATION
Daniele Losanno, Mariacristina Spizzuoco, Giorgio Serino
- C 25829** INFLUENCE OF NEOPRENE AGED BEARING PROPERTIES ON THE SEISMIC VULNERABILITY AND DAMAGE DISTRIBUTION IN REINFORCED CONCRETE BRIDGE PIERS
Giuseppe Santarsiero, Angelo Masi, Rosalba Gaetano, Valentina Picciano, Sandro Assunto, Arcangelo Di Tolla, Antonio Lippolis, Vitantonio Vacca, Vincenzo Manfredi
- C 25583** SEISMIC ASSESSMENT AND INNOVATIVE STRENGTHENING OF CORRODED CANTILEVER STRUCTURES IN MULTI-STORY BUILDINGS
Anthos Ioannou, Salomi Papamichael, Aikaterini Genikomsou, Panagiotis Stylianidis, John Bellos

- C 24997** ON-SITE TESTS AND STRUCTURAL ASSESSMENT OF A 1950S PAVILION OF GENERAL MARKETS COMPLEX IN FLORENCE
Gloria Terenzi, Carlo Vienni, Salvatore Giacomo Morano, Claudio Dedja, Lorenzo Quadri

**UNCECOMP MS 14 - I
OPTIMIZATION UNDER UNCERTAINTY**

**Wednesday
9:00 - 11:00**

Epsilon

MS Organizers: *Oindrila Kanjilal, Iason Papaioannou, Daniel Straub, Marcos Valdebenito*

Chair: *Marcos Valdebenito*

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- U 21368** OPTIMAL PUMP SCHEDULING IN WATER DISTRIBUTION SYSTEMS CONSIDERING RANDOM USER DEMANDS
Danko Jerez, Hector Jensen
- U 21091** OPTIMIZATION UNDER UNCERTAINTY FOR EFFICIENT LASER POWDER-BED FUSION MANUFACTURING
Boris Kramer, Yulin Guo
- U 21078** STOCHASTIC OPTIMIZATION FOR SPACE MISSION ANALYSIS
Thomas Caleb, Roberto Armellin, Spencer Boone, Stéphanie Lizy-Destrez
- U 21208** GENERALIZED KALMAN FILTER BASED REINFORCEMENT LEARNING WITH STOCHASTIC TRANSITIONS
Vasos Arnaoutis, Bojana Rosic
- U 21264** OPTIMIZATION OF SHELL STRUCTURES CONSIDERING STRUCTURAL STABILITY AND POLYMORPHIC UNCERTAINTIES
Maximilian Schweizer, Marc Fina, Werner Wagner, Steffen Freitag

**COMPDYN TS 18 - I
REPAIR AND RETROFIT OF STRUCTURES**

**Wednesday
9:00 - 11:00**

Room A

Chair: *Antonello Salvatori*

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- C 24443** INNOVATIVE TECHNOLOGIES FOR THE SEISMIC IMPROVEMENT OF MASONRY AND A SYSTEMATIC APPLICATION AFTER EARTHQUAKE
Antonello Salvatori, Marianna Leonori, Simone Salvatori
- C 24473** PARAMETRIC STUDY AND FRAGILITY CURVES FOR EXISTING RC FRAME BUILDINGS RETROFITTED WITH RC INFILL WALLS
Elpida Georgiou, Christos Petridis, Dimitris Pitilakis, Christis Chrysostomou, Nicholas Kyriakides
- C 25686** STRUCTURAL RESILIENCE THROUGH RETROFIT WITH SHAPE MEMORY ALLOYS: CASE STUDIES ON RC FRAME TYPES
Maria Ntina, Panos Tsopelas, Evangelos Efthymiou
- C 24921** ESE FRAMEWORK FOR RAPID ASSESSMENT OF POST-EARTHQUAKE REPAIR COST AND DURATION FOR RESIDENTIAL BUILDINGS
Zoran Stojadinović, Dejan Marinković, Đorđe Nedeljković, Marija Ivanović, Nevena Simić, Marko Marinković, Božidar Stojadinović
- C 24925** COMBINED ANALYSIS OF DYNAMIC AND STATIC STIFFNESS FOR DAMAGE ASSESSMENT IN HORIZONTAL RC STRUCTURES SUBJECTED TO FIRE: A PRACTICAL CASE STUDY
Ruben-Dario Cano-Marin, Antonio Morales-Esteban, Maria-Victoria Requena-Garcia-Cruz, C. Madrigal

DAY 4

WEDNESDAY 18 JUNE

C 25446 PERFORMANCE-SPECTRA DESIGN OF DISSIPATIVE EXOSKELETONS FOR SEISMIC RETROFIT OF RC BUILDING STRUCTURES

*Massimiliano Ferraioli, **Salvatore Mottola**, Osvaldo Pecorari*

COMPDYN TS 15 - II
OPTIMUM DESIGN AND CONTROL IN STRUCTURAL DYNAMICS
AND EARTHQUAKE ENGINEERING

Wednesday
9:00 - 11:00

Room B

Chair: *Vagelis Plevris*

C 27742 TOPOLOGY OPTIMIZATION OF 2D STRUCTURES FOR COMPLIANCE AND FUNDAMENTAL FREQUENCY OBJECTIVES USING MATLAB

Theofilos Mavroudis, Dara Diyar Hafzullah, Vagelis Plevris, Amalia Moutsopoulou

C 25090 FRAGILITY ASSESSMENT OF RC HOSPITAL BUILDINGS WITH VISCOUS ENERGY DEVICES EXPOSED TO SEISMIC LOADS

*Itzel Ramirez, J. Ramon Gaxiola-Camacho, **Dante Tolentino***

C 24608 THEORETICAL EVALUATION AND EXPERIMENTAL VALIDATION OF AN INNOVATIVE DYNAMIC ANALYSIS METHOD FOR COMBINED STRUCTURES WITH TUNED MASS DAMPERS

John Bellos, Vasileios Kamperidis, Salomi Papamichael, Anthos Ioannou

C 24705 ENHANCING SEISMIC PERFORMANCE OF UNBONDED POST-TENSIONED PRECAST CONCRETE SHEAR WALLS THROUGH MILD STEEL REINFORCEMENT DESIGN PARAMETERS

Bulent Erkmén, Osman Oguzcan

C 24926 EFFICIENT PARAMETER IDENTIFICATION OF A FLUID INERTER-BASED CONTROL DEVICE WITH MULTIPLE UNCERTAIN PARAMETERS

Barbara Goller, Thomas Furtmüller, Christoph Adam

C 25088 STRUCTURAL MODIFICATIONS FOR VIBRATION SERVICEABILITY OF LONG-SPAN STEEL-CONCRETE COMPOSITE FLOORS: IMPACTS ON CARBON FOOTPRINT, MATERIAL CONSUMPTION

Márcio Gonçalves, Aleksandar Pavic, Roberto Pimentel, Felipe Silva

COMPDYN TS 23 - I
SOIL-STRUCTURE INTERACTION & SOIL DYNAMICS

Wednesday
9:00 - 11:00

Room C

Chair: *Petros Komodromos*

C 25822 INFLUENCE OF SOIL DEFORMABILITY ON THE SEISMIC RESPONSE OF BASE-ISOLATED BUILDING

*Christos Anastasiou, **Petros Komodromos***

C 24792 INVESTIGATIONS ON THE ENERGY-DISSIPATION CHARACTERISTIC OF THE ROCKING FOUNDATION IN LAYERED SOIL SUBJECTED TO DYNAMIC LOADINGS

Jun-Yang Shi, Pin-Rong Chen

C 24986 SOIL-STRUCTURE INTERACTION EFFECTS ON THE SEISMIC BEHAVIOUR OF A RC DUAL WALL-FRAME BUILDING

Besar Abdiu, Julijana Bojadjieva, Lisa Star

C 25855 A CRITICAL EVALUATION OF ASCE PROCEDURES FOR CAPTURING NONLINEAR SOIL DEFORMATION IN SEISMIC SOIL-STRUCTURE INTERACTION

Baban Bapir, Lars Abrahamczyk, Davorin Penava, Brwa HS Hamah Ali

- C 24490** THE EFFECT OF FLUID-SOLID COUPLING ON WAVE SCATTERING COMPUTED WITH THE WAVE BASED METHOD
Mirjam Lainer, Gerhard Müller
- C 26085** EVALUATING HYDRAULIC CONDUCTIVITY AND SOIL DYNAMICS FOR SUSTAINABLE SAND DRAIN SYSTEM DESIGN - A CASE STUDY OF SRMCEM, LUCKNOW
Surya Dev Singh, Pradyut Anand, Denise-Penelope Kontoni, Sunil Kumar Yadav

**COMPDYN TS 26 - I
STEEL STRUCTURES**

**Wednesday
9:00 - 11:00**

Room D

Chair: *Agnese Natali*

- C 25359** SEISMIC PERFORMANCE OF CHS-TO-I-BEAM COMPOSITE JOINTS WITH PASSING-THROUGH PLATES: EXPERIMENTAL AND NUMERICAL APPROACH
Francesco Fabbri, Daniele Mattoccia, Agnese Natali, Francesco Morelli
- C 25649** A STUDY ON DAMAGE INITIATION BY ULTRA-LOW CYCLE FATIGUE OF SN490 UNDER VARIABLE AMPLITUDE LOADING CONSIDERING SHAPE DIFFERENCES
Marin Okada, Yasunori Mizushima, Yasuhiko Inoue, Toru Inaba, Shota Yoshino
- C 25656** THE EFFECT OF VIBRATIONS ON THE TIGHTNESS OF FLANGE JOINTS IN A PIPING SYSTEM
Martin Sivy, Robert Berky, Igor Istenes, Stanislav Otepka
- C 25666** EXPERIMENTAL AND NUMERICAL INVESTIGATION OF STEEL END-PLATE TO CHS BOLTED CONNECTIONS
Theocharis Papatheocharis, George Varelis, Philip Perdikaris, Spyros Karamanos
- C 25540** DESIGN AND OPTIMIZATION FRAMEWORK FOR COMPLEX FREE-FORM STRUCTURES JOINTS USING ADDITIVE MANUFACTURING
Daniele Mattoccia, Agnese Natali, Francesco Morelli
- C 27844** HYSTERETIC BEHAVIOR OF BUCKLING-RESTRAINED ALUMINUM SHEAR-YIELDING DAMPERS
Oswaldo Pecorari, Euripidis Mistakidis, Massimiliano Ferraioli, Alberto Mandara
- C 26089** AN INNOVATIVE PASSIVE ENERGY METALLIC DAMPER COMPOUND OF SHEAR PLATES AND PIPE SECTIONS TO IMPROVE THE BEHAVIOR OF CBF BRACES
Denise-Penelope Kontoni, Ali Ghamari, Sin-Chi Kuok

**COMPDYN MS 59 - I
SEISMIC ASSESSMENT AND RETROFITTING OF EXISTING
STEEL STRUCTURES: CURRENT PRACTICE AND FUTURE CHALLENGES**

**Wednesday
9:00 - 11:00**

VIP Room

MS Organizers: *Luigi Di Sarno, Fabio Freddi, Mario D'Aniello*

Chair: *Fabio Freddi*

- C 27784** **KEYNOTE:** AGEING OF STEEL CRITICAL INFRASTRUCTURE: THE CASE OF PETROCHEMICAL PLANTS
Luigi Di Sarno
- C 24636** THE IMPACT OF THREE-DIMENSIONAL MODELLING AND BIAXIAL SEISMIC EXCITATION ON THE NONLINEAR RESPONSE OF STEEL BRACED FRAME BUILDINGS
Mohamad Dakour, Lucia Tirca, Ted Stathopoulos

DAY 4

WEDNESDAY 18 JUNE

C 25043 PROGRESSIVE COLLAPSE RETROFIT OF A STEEL-RC HOSPITAL BUILDING USING AN OUTRIGGER-BELT TRUSS SYSTEM

*Massimiliano Ferraioli, Angelo Lavino, **Alberto Mandara***

C 24662 SEISMIC PERFORMANCE OF PINCHING-FREE TENSION-ONLY CBFS EQUIPPED WITH METAL FOAM DAMPERS

***Annarosa Lettieri**, Atsushi Sato, Massimo Latour, Gianvittorio Rizzano*

C 24614 EVALUATION OF EXISTING CORROSION MODELS FOR THE FLEXURAL BEHAVIOUR ASSESSMENT OF STEEL ELEMENTS SUBJECTED TO CYCLIC LOADING

***Amir Houshang Farivar Rad**, José Miguel Castro*

11:00-11:30

Coffee Break

**COMPDYN
PLENARY LECTURES**
**Wednesday
11:30 - 13:30**
Delphi

 Chair: *Geert Degrande*
C 27114 SEISMIC SHIELDING
Boris Jeremic
C 26194 PHYSICS-DRIVEN LEARNING FOR DYNAMICS & TWINNING | BRIDGING MODELS AND REALITY
Eleni Chatzi
**UNCECOMP
PLENARY LECTURES**
**Wednesday
11:30 - 13:30**
Salon des Roses A

 Chair: *Marc Mignolet*
U 22070 HIERARCHICAL BAYESIAN INFERENCE FRAMEWORK FOR UNCERTAINTY QUANTIFICATION AND RELIABILITY UPDATING IN DYNAMICAL SYSTEMS
Costas Papadimitriou
U 22248 ADVANCED METHODS FOR UNCERTAINTY QUANTIFICATION, INVERSE ANALYSIS AND DIGITAL TWINNING FOR COMPLEX AND MULTI-PHYSICS PROBLEMS
Wolfgang Wall
**13:30-14:30
Lunch Break**

DAY 4

WEDNESDAY 18 JUNE

COMPDYN SEMI-PLENARY LECTURES

Wednesday
14:30 - 16:30

Delphi

Chair: *Vissarion Papadopoulos*

U 21304 REDUCED ORDER METHODS IN CFD FOR UNCERTAINTY QUANTIFICATION
Gianluigi Rozza

C 25442 INTRINSICALLY SELECTIVE MASS SCALING WITH HIERARCHIC PLATE FORMULATIONS
*Lisa-Marie Krauß, Rebecca Thierer, **Manfred Bischoff**, Bastian Oesterle*

C 26132 DOMAIN KNOWLEDGE-ENHANCED SURROGATE MODELING FOR EFFICIENT SEISMIC ANALYSIS
De-Cheng Feng

SPECIAL TECHNOLOGICAL SESSION LECTURES

Wednesday
14:30 - 15:50

Salon des Roses A

Chair: *Michalis Fragiadakis*

C 27254 LINEAR VS. NONLINEAR PROCEDURES FOR THE SEISMIC ASSESSMENT AND RETROFIT OF EXISTING RC BUILDINGS
Stelios Antoniou

U 22238 AI, HPC AND COMPUTER SIMULATIONS: USE CASES IN THE GREEK INDUSTRY ECOSYSTEM
George Stavroulakis

COMPDYN MS 42 - II SEISMIC RISK ASSESSMENT AND MITIGATION OF MASONRY ARCHITECTURAL HERITAGE

Wednesday
14:30 - 16:30

Salon des Roses B

MS Organizers: *Cristina Cantagallo, Francesca Mattei, Diego Alejandro Talledo, Mattia Zizi*

Chair: *Francesca Mattei*

C 25155 GENESIS PROJECT: SEISMIC RISK MANAGEMENT FOR THE TOURISTIC VALORISATION OF THE HISTORICAL CENTERS OF SOUTHERN ITALY
*Enrico Spacone, **Cristina Cantagallo**, Silvia Caprili, Luciano Caroprese, Michele D'Amato, Gianfranco De Matteis, Marinella Fossetti, Domenico Filitti, Rosario Gigliotti, Francesca Mattei, Maria Giovanna Masciotta, Felice Ponzo, Anna Saetta, Walter Salvatore, Diego Alejandro Talledo, Antonella Versaci, Mattia Zizi*

C 25522 RETROFITTING SOLUTIONS FOR ENHANCING IN-PLANE RESPONSE OF MASONRY WALLS UNDER SEISMIC LOADING
***Mattia Zizi**, Francesca Mattei, Silvia Caprili, Walter Salvatore, Gianfranco De Matteis*

C 25487 SEISMIC ASSESSMENT OF SAN GIOVANNELLO CHURCH IN GERACE BY NON-LINEAR TIME-HISTORY ANALYSES
***Rafael Shehu**, Nicola Scattarreggia, Eugenio Chioccarelli, Alba Sofi*

C 24924 MODELLING APPROACHES FOR THE NUMERICAL ANALYSIS OF STONE COLUMN ELEMENTS FROM HERITAGE BUILDINGS
*Jose-Carlos Gómez-Sánchez, **Maria-Victoria Requena-Garcia-Cruz**, Antonio Morales-Esteban*

- C 25443** EXPEDITIOUS SEISMIC RISK ASSESSMENT OF THE SARACENA AREA OF TRICARICO CITY (SOUTHERN ITALY)

Francesca Mattei, Roselena Sulla, Michele D'Amato, Rosario Gigliotti

**UNCECOMP MS 17 - IV
BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE
AND ENGINEERING**

Wednesday
14:30 - 16:30

Athena

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

- U 21488** PROBABILISTIC VIRTUAL SENSING WITH GAUSSIAN PROCESSES AND PHYSICS-BASED MODELS

Sebastian Brandstaeter, Bishr Maradni, Alexander Popp

- U 21241** ZIG-ZAG SAMPLING FOR BAYESIAN INFERENCE OF MATERIAL PARAMETER FIELDS

Leon Riccius, Iuri Rocha, Frans van der Meer

- U 21331** MULTILEVEL MARKOV CHAIN MONTE CARLO FOR HIGH-RESOLUTION DATA ASSIMILATION

Pieter Vanmechelen, Geert Lombaert, Giovanni Samaey

- U 21052** ON THE USE OF HIERARCHICAL BAYESIAN MODELLING FOR STOCHASTIC CRACK GROWTH MONITORING

Nicholas Silionis, Konstantinos Anyfantis

- U 21114** BAYESIAN CALIBRATION OF A NON-LINEAR CONTROLLED DYNAMIC SYSTEM WITH MISSING DATA: APPLICATION TO HIGH SPEED-TRAIN

Romain Jorge Do Marco, Guillaume Perrin, Christine Funfschilling, Christian Soize

- U 21533** GEOMETRY PRESERVING ENSEMBLE KALMAN FILTERING

Minke Berghuis, Bojana Rosic

**UNCECOMP MS 13 - II
MONTE CARLO SAMPLING FOR STOCHASTIC SOLVERS: ADVANCES IN
UNCERTAINTY QUANTIFICATION**

Wednesday
14:30 - 16:30

Nafsika A

MS Organizers: *Elisa Iacomini, Emil Løvbak*

Chair: *Elisa Iacomini*

- U 21237** MARKOV CHAIN MONTE CARLO FOR BAYESIAN INVERSION WITH PARTICLE SOLVERS

Emil Løvbak, Sebastian Krumscheid

- U 21325** BAYESIAN EXPERIMENTAL DESIGN WITHOUT INTEGRATING OVER POSTERIOR DISTRIBUTION

Vinh Hoang, Luis Espath, Sebastian Krumscheid, Raul Tempone

- U 21292** IMPORTANCE SAMPLING VIA STOCHASTIC OPTIMAL CONTROL FOR MCKEAN—VLASOV STOCHASTIC DIFFERENTIAL EQUATION

Nadhir Ben Rached, Abdul-Lateef Haji-Ali, Shyam Mohan Subbiah Pillai, Raul Tempone

- U 21177** EFFICIENT BAYESIAN INFERENCE IN LARGE, PARTIALLY STOCHASTIC MODELS FOR COSMOLOGICAL STRUCTURE FORMATION

Louise Kluge, Linus Seelinger, Dylan Nelson, Robert Scheichl

DAY 4

WEDNESDAY 18 JUNE

- U 21123** ON THE PSEUDO-MARGINAL APPROXIMATION OF THE FREE ENERGY INSIDE THE MICRO-MACRO MARKOV CHAIN MONTE CARLO METHOD
Hannes Vandecasteele, Giovanni Samaey

COMPDYN MS 7 - I
DYNAMIC MONITORING OF MONUMENTAL BUILDINGS AND ARTISTIC GOODS

Wednesday
14:30 - 16:30

Nafsika B

MS Organizers: *Stefania Viti, Marco Tanganelli, Riccardo Mario Azzara*
Chair: *Marco Tanganelli*

- C 25075** SEISMIC PERFORMANCE OF THE STATUE "MARZOCCO" EXHIBITED AT THE NATIONAL MUSEUM OF BARGELLO (FLORENCE, ITALY)
Riccardo Azzara, Marco Tanganelli, Francesco Trovatelli, Stefania Viti
- C 25515** EXPERIMENTAL INVESTIGATIONS ON THE BELL TOWER OF PIEVE SAN LORENZO
Martina Colapietro, Andrea Giachetti, Barbara Pintucchi
- C 24958** COMPARATIVE STUDY OF SOLID AND SHELL ELEMENTS IN THE NUMERICAL MODELLING OF HERITAGE STRUCTURES
Isabel González-de-León, María Victoria Requena-García-Cruz, Emilio Romero-Sánchez, Antonio Morales-Esteban
- C 25147** 3D NUMERICAL MODELLING OF THE MOSQUE-CATHEDRAL OF CÓRDOBA'S ANCIENT BELL TOWER
Emilio Romero-Sánchez, María-Victoria Requena-García-Cruz, Isabel González-de-León, Antonio Morales-Esteban
- C 25454** SEISMIC DAMAGE SCENARIOS OF MONUMENTAL BUILDINGS IN THE HISTORIC CENTER OF FLORENCE
Maria Teresa Cristofaro, Angelo D'Ambrisi, Mario De Stefano
- C 24810** DYNAMIC MONITORING OF AN HISTORICAL MONUMENTAL BUILDING CONTAINING PRECIOUS MOBILE CULTURAL HERITAGE ARTEFACTS AND DELICATE SCIENTIFIC INSTRUMENTS
Massimo Coli, Emanuele Marchetti, Lorenza Alcaro, Lorenzo Innocenti

UNCECOMP MS 2 - II
PHYSICS-ENHANCED MACHINE LEARNING IN ENGINEERING

Wednesday
14:30 - 16:30

Nefeli A

MS Organizers: *Alice Cicirello, Elizabeth Cross, Eleni Chatzi*
Chair: *Alice Cicirello*

- U 21036** PHYSICS-ENHANCED NEURAL NETWORKS FOR THE PREDICTION OF CRITICAL HEAT FLUX IN NUCLEAR REACTORS AND THE QUANTIFICATION OF ITS UNCERTAINTY
Nicola Pedroni
- U 21421** EXPLORATION OF PHYSICS-ENHANCED MACHINE LEARNING STRATEGIES FOR DESIGN OPTIMIZATION OF LOCALLY RESONANT METAMATERIALS
Niccolò Klinger, Alice Cicirello
- U 21247** PHYSICALLY-INFORMED CHANGE-POINT KERNELS FOR INTERMITTENT INCLUSION OF PHYSICAL KNOWLEDGE
Daniel Pitchforth, Samuel Gibson, Elizabeth Cross
- U 22047** SEPARABLE PHYSICS INFORMED NEURAL NETWORKS - APPLICATIONS IN STRUCTURAL ENGINEERING
Anastasios Stamou, Taniya Kapoor, Michalis Fragiadakis

- U 21307** PHYSICS-ENCODED GRAPH NEURAL NETWORKS FOR MODELING AND RECOVERING DYNAMIC STATES IN STRUCTURAL SYSTEMS
Marcus Haywood-Alexander, Gregory Duthé, Eleni Chatzi

COMPDYN MS 23 - II
ADVANCED NUMERICAL METHODS IN DYNAMICS, PARTITIONED ANALYSIS AND COUPLED PROBLEMS

Wednesday
14:30 - 16:30

Nefeli B

MS Organizers: *Radek Kolman, Jin-Gyun Kim, José A. González, K.C. Park*

Chair: *Jin-Gyun Kim*

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- C 25142** MODEL REDUCTION FOR VIBRO-ACOUSTIC ANALYSIS OF GEOMETRICALLY NONLINEAR STRUCTURES INTERACTING WITH ACOUSTIC CAVITIES
Linus Andersson, Jin-Gyun Kim
- C 25674** REDUCED ORDER MODELING (ROM) EQUIPPED WITH RANDOM FOREST FOR STRUCTURAL DYNAMICS ANALYSIS
Minyoung Yun, Mikhael Tannous, Chady Ghnatios, Trond Kvamsdal, Francisco Chinesta
- C 25820** NON-INTRUSIVE MODEL ORDER REDUCTION USING THE LOCALIZED CONSTRAINTS OF PARTITIONED NONLINEAR OBJECT
Younggeun Park, Seung-Hoon Kang, Sangmin Lee, Haeseong Cho, SangJoon Shin
- C 25843** THREE-DIMENSIONAL MULTI-BODY DYNAMIC ANALYSIS USING THE DISPLACEMENT-BASED PARTITIONED METHOD
Minho Hwang, Seung-Hoon Kang, Kunhyuk Kong, SangJoon Shin, K.C. Park
- C 26028** DOMAIN DECOMPOSITION OF FINITE ELEMENT MODEL AND OPTIMIZATION OF THE INTERFACE-CURVED SURFACES ANALYSIS
Radim Dvorak, José González, Radek Kolman
- C 24815** VIBROACOUSTIC ANALYSIS OF WOOD FLOOR PANELS WITH POROUS MATERIALS: EXPERIMENTAL CALIBRATION AND FINITE ELEMENT MODELING
Walid Larbi, Magdalini Titirla

COMPDYN MS 54 - II
NOVEL TRENDS AND APPLICATIONS OF ISOLATION AND DISSIPATION DEVICES FOR IMPROVED RESILIENCE OF STRUCTURES TO EARTHQUAKES

Wednesday
14:30 - 16:30

Rotisserie

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

Chair: *Daniele Losanno*

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- C 25569** NONLINEAR RESPONSE ANALYSES OF A 2-STORY RC BUILDING WITH FIBRE-REINFORCED ELASTOMERIC ISOLATORS
Pio Medaglia, Daniele Losanno, Fulvio Parisi, Christos Lachanas, Filipe Luis Ribeiro, Antonio Araujo Correia
- C 25014** TRANSVERSE VIBRATION CONTROL VIA INERTER-BASED DISSIPATORS IN CABLE-STAYED BRIDGES
Matteo Mazzeo, Giuseppe Ricciardi

DAY 4

WEDNESDAY 18 JUNE

- C 25438** REPARABILITY ASSESSMENT OF A LARGE-SCALE STEEL STRUCTURE EQUIPPED WITH FRICTION-BASED DISSIPATIVE BRACES AND SELF-CENTRING COLUMN BASES
Elena Elettore, Antonella Bianca Francavilla, S. Di Benedetto, Massimo Latour, Fabio Freddi, Gianvittorio Rizzano
- C 25511** EFFECTS OF VERTICAL SEISMIC COMPONENT ON BASE ISOLATION SYSTEMS: THE CASE STUDY OF CASTELLUCCIO DI NORCIA
Luca Tentella, Vanni Nicoletti, Sandro Carbonari, Laura Ragni, Fabrizio Gara, Luigino Dezi
- C 25542** NUMERICAL INSIGHTS ON ACTIVE MASS DAMPER PERFORMANCE IN FRAME STRUCTURES
Riccardo Giacometti, Nicola Grillanda, Vincenzo Mallardo
- C 24888** METALLIC AND FLUID VISCOUS DAMPERS FOR SEISMIC PROTECTION OF INFILLED FRAME BUILDINGS
Gloria Terenzi, Stefano Sorace

COMPdyn MS 55 - II OPTIMIZATION-DRIVEN DESIGN AND RETROFIT STRATEGIES FOR ENHANCING SUSTAINABILITY IN STRUCTURAL SYSTEMS

Wednesday
14:30 - 16:30

Alpha

MS Organizers: *Cristoforo Demartino, Carlotta Contiguglia, Vittoria Borghese, Antonio P. Sberna, Nikola Tošić*

Chair: *Cristoforo Demartino*

- C 26927** **KEYNOTE:** NATURAL FIBRE COMPOSITES IN GREEN CONSTRUCTIONS: EXPERIMENTAL TESTS ON LIME-BASED MORTARS WITH HEMP AND RECYCLED AGGREGATES
Emilia Meglio, Antonio Formisano
- C 26007** GRAPH-BASED LONG SHORT-TERM MEMORY NETWORK FOR NONLINEAR SEISMIC RESPONSE-HISTORY ANALYSIS OF STEEL BUILDINGS
Yuan-Tung Chou, Po-Chih Kuo, Kuang-Yao Li, Wei-Tze Chang, Yin-Nan Huang, Chuin-Shan Chen
- C 25344** NUMERICAL STUDY ON TIMBER-SHELL EXOSKELETONS FOR THE SUSTAINABLE SEISMIC RETROFIT OF EXISTING BUILDINGS
Jacopo Zanni, Simone Labò, Alessandra Marini
- C 25626** FVDs AND HYSTERETIC STRUCTURES: DESIGN STRATEGIES
Anthea Amato, Liborio Cavaleri, Maria Concetta Oddo

UNCECOMP MS 7 - V SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION: NEW TRENDS

Wednesday
14:30 - 16:30

Gamma

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

Chair: *Bruno Sudret*

- U 20990** ANALYTICAL IDENTIFICATION OF DESIGN SPACES USING R-FUNCTIONS AND SURROGATE MODELS
Sergei Kucherenko, Oleksiy Klymenko, Nilay Shah
- U 21186** BAYESIAN STOCHASTIC POLYNOMIAL CHAOS EXPANSIONS FOR THE APPROXIMATION OF STOCHASTIC SIMULATORS
Maliki Moustapha, Bruno Sudret
- U 21012** FEATURE-CENTRIC NARX MODEL WITH AUTOMATED FEATURE SELECTION FOR THE UNCERTAINTY QUANTIFICATION OF DYNAMICAL SYSTEMS
Styfen Schär, Stefano Marelli, Bruno Sudret

- U 21195** LOCAL CONFIDENCE INTERVALS FOR SPARSE POLYNOMIAL CHAOS EXPANSIONS USING CONFORMAL PREDICTIONS
Arthur Hatstatt, Bruno Sudret
- U 21214** UNCERTAINTY QUANTIFICATION FOR THE SIMULATION OF AUTOMOTIVE COMPONENT LOADS USING STOCHASTIC SURROGATE MODELS
Paul Strähle, Steve Wolff-Vorbeck, Thomas Leyendecker, Carsten Proppe
- U 21281** CRITICAL SCENARIO TESTING USING ADAPTIVE SPARSE GRIDS KRIGING: A MULTI-FIDELITY SEARCH BASED TESTING APPROACH
Naya Baslan, Julian Schmidt, Alexander Ferdinand Kersch, Dirk Pflüger

16:30-17:00

Coffee Break

COMPdyn MS 8 - II
ARTIFICIAL INTELLIGENCE & MACHINE LEARNING IN DESIGN AND
ASSESSMENT OF STRUCTURES

Wednesday
17:00 - 19:00

Delphi

MS Organizers: George Markou, Nikolaos P. Bakas, Savvas A. Chatzichristofis

Chair: Michalis Fragiadakis

C 25148 QUANTIFYING UNCERTAINTY IN DAMAGE IDENTIFICATION VIA DEEP LEARNING: A GAUSSIAN MIXTURE AUTOENCODER APPROACH
Ana Fernandez-Navamuel, Nicolas Gorostidi, David Pardo, Vincenzo Nava, Eleni Chatzi

C 25550 INCORPORATING NOISE INTO VISION-BASED RESERVE CAPACITY QUANTIFICATION OF HOT-ROLLED WIDE-FLANGE MEMBERS
Tianyu Gu, Nenad Bijelić, Dimitrios G. Lignos

C 25697 STATISTICAL ANALYSIS OF RESPONSE DATABASE FOR THREE-DIMENSIONAL FRAME MODELS
Miyu Takada, Yasunori Mizushima, Takuma Kawakami, Motoki Uchiyama, Motonobu Maekawa, Shuei Ikeda, Motoki Akazawa, Yasuyuki Nagano

C 24692 EXPLAINABLE MACHINE LEARNING MODELS TO ASSESS THE BOND BEHAVIOR AND STRENGTH OF STEEL FIBERS EMBEDDED IN STEEL FIBER REINFORCED CONCRETE
Christian Quispe, Carlos Benedetty, Luis Bedriñana

C 26000 MACHINE LEARNING APPROACH FOR THE ESTIMATION OF STRUCTURAL PARAMETERS IN EXISTING CONCRETE BEAM SLAB BRIDGES WITHOUT CONSTRUCTION DRAWINGS
Juan S. Peñuela Spinel, Juan Reyes, Juan Correal

UNCECOMP TS 17 - IV
UNCERTAINTY QUANTIFICATION

Wednesday
17:00 - 19:00

Salon des Roses A

Chair: George Stefanou

U 20964 INPUT PARAMETER SPECIFIC UNCERTAINTY QUANTIFICATION OF DEEP LEARNING MODELS USING MONTE CARLO DROPOUT
Eugen Boos, Maik Linnemann, Hajo Wiemer, Verena Psyk, Steffen Ihlenfeldt

U 21105 A HIERARCHICAL BAYESIAN APPROACH FOR POPULATION-BASED SHM IN SHIP HULL STRUCTURES
Georgios Aravanis, Nicholas Silionis, Jacopo Bordini, Marco Giglio, Konstantinos Anyfantis, Claudio Sbarufatti

U 21072 TIME-SEPARATED STOCHASTIC MECHANICS FOR TRANSIENT THERMO-MECHANICALLY COUPLED PROBLEMS
Christian Müller, Hendrik Geisler, Phillip Junker

U 21490 PROBABILISTIC PREDICTION OF FRACTURE BEHAVIOR OF POLYCRYSTALLINE CERAMICS
Tenyuan Hao, William Raagan, Min Zhou

U 20953 SENSITIVITY ANALYSIS OF IMAGE CLASSIFICATION MODELS USING GENERALIZED POLYNOMIAL CHAOS
Lukas Bahr, Lucas Poßner, Konstantin Weise, Stephan Matzka, Sophie Gröger, Rüdiger Daub

U 21173 DOMAIN ADAPTATION IN STRUCTURAL HEALTH MONITORING USING LEARNING BOUNDS AND GENERATIVE NETWORKS
C.A. Lindley, N. Dervilis, K. Worden

COMPDYN MS 22

ADVANCES IN SEISMIC DESIGN AND ASSESSMENT OF EXISTING AND RETROFITTED PRECAST CONCRETE BUILDINGS

Wednesday
17:00 - 19:00

Salon des Roses B

MS Organizers: *Davide Bellotti, Francesco Cavalieri, Andrea Belleri*Chair: *Chiara Di Salvatore*

C 25239 A NEW FORCE-BASED DESIGN METHODOLOGY FOR ONE-STORY RC PRECAST BUILDINGS IN COMPLIANCE WITH THE SECOND GENERATION OF EUROCODE 8
Tatjana Isakovic

C 24424 LIFE CYCLE ENVIRONMENTAL IMPACT REDUCTION ALLOWED BY SEISMIC REHABILITATION OF PRECAST CONCRETE STRUCTURES
Margherita Buttazzoni, Martina Caruso, Francesco Cavalieri, Davide Bellotti, Roberto Nascimbene

C 25912 SEISMIC ASSESSMENT OF EXISTING ITALIAN RC PRECAST STRUCTURES
Chiara Di Salvatore, Gennaro Magliulo

C 25200 TOWARDS A SIMPLIFIED SEISMIC RISK ASSESSMENT FOR PRECAST INDUSTRIAL BUILDINGS
Marius Eteme Minkada, Andrea Belleri, Paolo Riva, Luca Danesi

COMPDYN MS 13

INNOVATIONS IN SEISMIC ASSESSMENT AND RETROFITTING OF INFILLED RC STRUCTURES: EXPERIMENTAL TESTING AND NUMERICAL SIMULATIONS

Wednesday
17:00 - 19:00

Athena

MS Organizers: *André Furtado, Maria Teresa de Risi*Chair: *Maria Teresa de Risi*

C 26397 IMPACT OF MASONRY INFILLS ON THE NONLINEAR SEISMIC RESPONSE OF IRREGULAR RC BUILDINGS
Massimiliano Ferraioli, Angelo Lavino, Osvaldo Pecorari, Salvatore Mottola

C 25311 EVALUATING THE OUT-OF-PLANE RESPONSE OF MASONRY INFILL WALLS IN SEISMIC CONDITIONS: A PARAMETRIC ANALYTICAL MODEL
Marco Gaspari, Marco Donà, Luca Tosolini, Francesca da Porto

C 25259 DEVELOPING STOREY LOSS FUNCTIONS FOR PORTUGUESE RC BUILDINGS
Rita Couto, Gianrocco Mucedero, Rita Bento, Ricardo Monteiro

C 25637 SEISMIC BEHAVIOUR OF BUILDINGS WITH SOFT-STOREY MECHANISM: ASSESSMENT AND RETROFITTING
Ana Maria Caixinhas, André Furtado

C 24591 REVERSED OUT-OF-PLANE CYCLIC TESTING OF MASONRY INFILLS USING DOUBLE-LEAF AIRBAGS
Zeeshan Manzoor Bhat, Yogendra Singh

COMPDYN MS 6
UNCERTAINTY QUANTIFICATION IN COMPUTATIONAL STOCHASTIC
DYNAMICS: RECENT ADVANCES

Wednesday
17:00 - 19:00

Nafsika A

MS Organizers: Marcos Valdebenito, Hector Jensen, Jianbing Chen, Vaisleios Frangkoulis, Tim Rogers, Matthias Faes

Chair: Hector Jensen

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- C 24706** HAMILTONIAN MONTE CARLO-BASED SUBSET SIMULATION FOR BAYESIAN MODEL UPDATING OF COMPLEX STRUCTURAL DYNAMICAL SYSTEMS
Hector Jensen, Danko Jerez, Cristobal Figueroa
- C 25329** INTEGRATED APPROACH FOR ESTIMATING FAILURE PROBABILITIES USING METHOD OF MOMENTS AND CONTROL VARIATES WITH SPLITTING
Cristóbal Acevedo, Xuan-Yi Zhang, Marcos Valdebenito, Matthias Faes
- C 25783** MAXIMUM ENTROPY SOLUTION OF THE STURM-LIOUVILLE PROBLEM WITH THE GENERALISED GAUSSIAN INITIAL CONDITION
Gaia Prezioso, Marco Amabili, Mario Di Paola, Massimiliano Zingales
- C 26900** EFFICIENT FORWARD AND INVERSE UNCERTAINTY QUANTIFICATION FOR DYNAMICAL SYSTEMS BASED ON DIMENSION REDUCTION AND KRIGING SURROGATE MODELING IN FUNCTIONAL SPACE
Zhouzhou Song, Weiyun Xu, Marcos Valdebenito, Matthias Faes
- C 27121** TIME-VARIANT RELIABILITY ANALYSIS VIA A SINGLE-LOOP GPR-BASED ACTIVE LEARNING METHOD
Chao Dang, Marcos Valdebenito, Matthias Faes

COMPDYN MS 7 - II
DYNAMIC MONITORING OF MONUMENTAL BUILDINGS AND
ARTISTIC GOODS

Wednesday
17:00 - 19:00

Nafsika B

MS Organizers: Stefania Viti, Marco Tanganelli, Riccardo Mario Azzara

Chair: Stefania Viti

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- C 25023** A MODEL FOR THE STRUCTURAL AND SEISMIC ASSESSMENT OF THE CATHEDRAL OF CÓRDOBA
Natalia Fernández-Pérez, Emilio Romero-Sánchez, María Victoria Requena-García-Cruz, Antonio Morales-Esteban
- C 25807** SEISMIC ANALYSIS OF A MODERN ARTWORK THROUGH DETAILED FE MODELING
Vieri Cardinali, Mario De Stefano, Antonino Maria Marra, Giorgio Verdiani
- C 25131** DYNAMIC BEHAVIOR OF A MASONRY TOWER DURING LOW MAGNITUDE SEISMIC EVENTS: RESULTS OF AN EXPERIMENTAL MONITORING CAMPAIGN ON THE ARNOLFO TOWER, FLORENCE, ITALY
Francesco Trovatielli, Marco Tanganelli, Riccardo Mario Azzara, Nicola Alessandro Pino
- C 25210** DYNAMIC MONITORING AND VIBRATION MITIGATION OF 15TH-CENTURY STATUES IN A HISTORIC CHURCH IN NAPLES
Habibollah Katouli, Mariacristina Spizzuoco, Giorgio Serino, Giampiero Martuscielli, Daniele Losanno
- C 24966** NON-DESTRUCTIVE DIAGNOSTICS OF TIMBER ALTARPIECES: SOUND-INDUCED LASER VIBROMETRY FOR EARLY DETECTION OF DELAMINATION
Elena Sara Saeed, Mauro Benedetti, Olimpia Niglio, Guido Giuliani, Emanuela Bosco, Francesco Graziotti
- C 25881** DYNAMIC IDENTIFICATION OF THE FIFTH MINARET OF HERAT DURING THE OCTOBER 2023 CRISIS
Giorgio Lacanna, Giulia Misseri, Arash Boostani, Luisa Rovero, Maurizio Ripepe

- C 25219** SEISMIC VULNERABILITY OF WORSHIP BUILDINGS: THE CASE STUDY OF FLORENTINE CHURCHES
Maria Teresa Cristofaro, Elisabetta Di Rienzo, Mariachiara Petrolini, Raffaele Nudo

COMPDYN MS 9
TIME INTEGRATION AND RESPONSE HISTORY ANALYSIS:
CURRENT TRENDS IN THEORY AND PRACTICE

Wednesday
17:00 - 19:00

Nefeli A

MS Organizers: *Aram Soroushian, Kumar K. Tamma*

Chair: *Anthony Gravouil*

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- C 26041** **KEYNOTE:** A GENERAL EXPLICIT FRAMEWORK FOR NON-SMOOTH DYNAMICS
Anthony Gravouil, Paul Larousse, Jean Di Stasio, Fatima Fekak, Michael Brun, David Dureisseix
- C 26133** NONLINEAR DYNAMIC SEISMIC BEHAVIOR ANALYSIS OF NON-STRUCTURAL ELEMENTS: A CASE STUDY OF SPECIALIZED EQUIPMENT IN PSYCHOTHERAPY CENTERS
Kaveh Nezamisavojbolaghi, Esfandiyar Jabraeilabloy
- C 25824** STATISTICAL FEATURE OF SEISMICITY IN XINJIANG, CHINA AND ITS PROBABLE CORRELATION TO HEAT FLOW USING ETAS MODEL
Qiaozhi Sang, Yong Yuan
- C 25866** DYNAMIC RESPONSE AND LIQUEFACTION MECHANISMS OF SATURATED SANDY SEABED UNDER COMBINED EARTHQUAKE AND WAVE ACTION
Yong Yuan, Xinhang Xiong
- C 25867** DYNAMIC RESPONSE HISTORY ANALYSIS AND STRUCTURAL SYSTEM IDENTIFICATION OF LARGE-SCALE INTEGRATED TRANSPORTATION HUB
Yong Yuan, Zhi-Han Zhang
- C 24615** AN IDEA FOR FURTHER SIMPLICITY IN SEISMIC NONLINEAR RESPONSE HISTORY ANALYSIS WHEN ELIMINATING THE STOPS BECAUSE OF FAILURE OF NONLINEAR SOLUTIONS
Aram Soroushian

COMPDYN MS 34
ADVANCES IN DETERMINISTIC AND DATA-DRIVEN METHODS FOR
DAMAGE AND FRACTURE MODELING

Wednesday
17:00 - 19:00

Nefeli B

MS Organizers: *Panos Pantidis, Mostafa Mobasher, Eleni Chatzi, Konstantinos Agathos*

Chair: *Mostafa Mobasher*

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- C 25935** IN-SERVICE CRACK IDENTIFICATION OF TRAIN WHEELSET AXLES USING HIGHER ORDER TRANSMISSIBILITY
Ehsan Naghizadeh, Paolo Tiso, Eleni Chatzi
- C 24927** ENHANCING COMPUTATIONAL EFFICIENCY IN PHASE-FIELD FRACTURE ANALYSIS WITH I-FENN
Panos Pantidis, Lampros Svolos, Roshan Saji, Diab Abueidda, Mostafa Mobasher
- C 25401** FINITE ELEMENT SIMULATION OF DUCTILE-BRITTLE TRANSITION ACKNOWLEDGING RATE AND TEMPERATURE DEPENDENCY IN STEELS
Andronikos Skiadopoulos, Andrew Ziccarelli, Amit Kanvinde, Gregory G Deierlein

DAY 4

WEDNESDAY 18 JUNE

- C 24929** AN IN-PLANE MECHANISM-BASED CONTINUUM DAMAGE MODEL FOR THE ANALYSIS OF MASONRY STRUCTURES
Gregorio Bertani, Antonio Maria D'Altri, Gabriel B. Barbat, Luca Patruno, Miguel Cervera, Stefano de Miranda
- C 26207** LEARNING MICROSTRUCTURE-EFFECTIVE PROPERTY RELATIONSHIPS IN BRITTLE POROUS MATERIALS USING GRAPH-THEORETICAL FEATURES
Xuejing Wang, Arghavan Louhghalam, Mazdak Tootkaboni

COMPDYN MS 32
GROUND-BORNE NOISE AND VIBRATIONS INDUCED BY RAILWAY TRAFFIC AND CONSTRUCTION ACTIVITIES

Wednesday
17:00 - 19:00

Rotisserie

MS Organizers: *Aires Colaço, Ana Ramos, Pedro Alves Costa*
Chair: *Aires Colaço*

- C 25754** RAILWAY-INDUCED VIBRATIONS: AN EXPERIMENTAL STUDY ON VIBRATION LEVEL VARIABILITY DUE TO VEHICLE INFLUENCE
Aires Colaço, Pedro Alves Costa, Ahmed Abouelmaty
- C 25584** SURROGATE-BASED MULTI-OBJECTIVE OPTIMISATION OF ACOUSTIC METAMATERIAL BARRIERS
Hassan Liravi, Javad Fakhraei, François-Xavier Bécot, Jelena Ninić
- C 24658** MODELING THE MITIGATION OF GROUND-BORNE VIBRATIONS USING SUB-SURFACE RESONATORS VIA A COUPLED ITM-FEM APPROACH
Tom Hicks, Julian Freisinger, Francesca Taddei, Gerhard Müller
- C 26056** PARAMETRIC STUDY OF SEISMIC METASURFACES FOR THE MITIGATION OF RAILWAY INDUCED VIBRATION
David Carneiro, Zohre Kabirian, Geert Lombaert, Geert Degrande
- C 26057** OPTIMIZATION OF SEISMIC METASURFACE TO REDUCE THE TRANSFER OF RAILWAY INDUCED VIBRATION
Zohre Kabirian, David Carneiro, Geert Degrande, Geert Lombaert

COMPDYN MS 55 - III
OPTIMIZATION-DRIVEN DESIGN AND RETROFIT STRATEGIES FOR ENHANCING SUSTAINABILITY IN STRUCTURAL SYSTEMS

Wednesday
17:00 - 19:00

Alpha

MS Organizers: *Cristoforo Demartino, Carlotta Contiguglia, Vittoria Borghese, Antonio P. Sberna, Nikola Tošić*
Chair: *Carlotta Contiguglia*

- C 25517** OPTIMIZED PARAMETRIC DESIGN OF RC STRUCTURES FOR REDUCING CO₂ EMISSIONS UNDER EARTHQUAKES
Vittoria Borghese, Cristoforo Demartino
- C 25504** ENHANCED PERFORMANCE-BASED SEISMIC DESIGN TOWARD FUNCTIONAL RECOVERY ACHIEVEMENT OF STEEL BUILDINGS
Lizhu Chen, Shuaikang Wang, Lucia Tirca
- C 25339** SUSTAINABLE SEISMIC RETROFIT OF EXISTING RC STRUCTURES THROUGH GA-BASED OPTIMIZATION
Francesco Nigro, Enzo Martinelli

C 25286 SEISMIC FRAGILITY ASSESSMENT AND INNOVATIVE PROTECTION TECHNIQUES OF HERITAGE BUILDINGS USING SHAPE MEMORY ALLOY: CASE STUDY PROJECT IN BUDAPEST
Sardasht Weli, Sarah Muhammad Elqudah, László Gergely Vigh

C 25622 SEISMIC RETROFIT OF RC BEAM-COLUMN JOINTS WITH EXTERNAL DISSIPATION DEVICES: A NUMERICAL STUDY
Paolo Ielpo, Giuseppe Santarsiero, Valentina Picciano, Angelo Masi

COMPDYN MS 63

ROCKING SYSTEMS IN STRUCTURAL ENGINEERING: FROM THE BEHAVIOR OF ROCKING BLOCKS AND ASSEMBLIES TO THE SEISMIC DESIGN AND PERFORMANCE OF MODERN ROCKING AND SELF-CENTERING SYSTEMS

Wednesday
17:00 - 19:00

Gamma

MS Organizers: *Andrea Belleri, Simone Labò, Michele Bianchessi, Michelle Gualdi*

Chair: *Simone Labò*

C 25365 PRELIMINARY PERFORMANCE ASSESSMENT OF ROCKING SYSTEMS WITH VISCOUS DAMPERS
Simone Labò, Andrea Belleri, Michele Bianchessi, Michelle Gualdi

C 25154 PRELIMINARY ASSESSMENT OF SELF-CENTERING ROCKING STEEL SYSTEMS FOR LIGHTWEIGHT BUILDINGS
Michelle Gualdi, Andrea Belleri, Alessandra Marini, Simone Labò, Luca Rota

C 24474 RATIONAL MODIFICATION OF HIGHER-MODE RESPONSE ENVELOPES FOR DESIGN OF CONTROLLED ROCKING BRACED FRAMES WITH TWO ROCKING SECTIONS
Taylor Steele

C 25245 CONTROLLED ROCKING STEEL BRACED DUAL-FRAMES FOR SEISMIC RETROFIT OF RC BUILDING STRUCTURES
Massimiliano Ferraioli, Osvaldo Pecorari, Simeone Parolisi, Alberto Mandara

C 27422 SEISMIC RESPONSE ASSESSMENT OF ASYMMETRIC RIGID STRUCTURES UNDER COMBINED ROCKING AND SLIDING MOTION
Nestor Vlachos, Spyridon Diamantopoulos, Michalis Fragiadakis

UNCECOMP MS 14 - II

OPTIMIZATION UNDER UNCERTAINTY

Wednesday
17:00 - 19:00

Epsilon

MS Organizers: *Oindrila Kanjilal, Iason Papaioannou, Daniel Straub, Marcos Valdebenito*

Chair: *Daniel Straub*

U 21276 A PRIMAL-DUAL ALGORITHM FOR STOCHASTIC MULTI-OBJECTIVE OPTIMIZATION WITH INEQUALITY CONSTRAINTS
Zachary Jones, Pietro Congedo, Olivier Le Maître

U 21321 QUANTILE-BASED ROBUST OPTIMIZATION VIA MONO-LEVEL GAUSSIAN PROCESS SURROGATE
Julius Schultz, Ulrich Römer

U 21359 A SEQUENTIAL VARIATIONAL BAYESIAN APPROACH TO GAUSSIAN PROCESS QUANTILE REGRESSION FOR OPTIMIZATION
Hugo Nicolas, Olivier Le Maître, Pietro Marco Congedo

COMPDYN TS 18 - II
REPAIR AND RETROFIT OF STRUCTURES
Wednesday
17:00 - 19:00
Room AChair: *Simone Galano*

- C 24805** ENHANCING SEISMIC RESILIENCE OF DEFICIENT INFILLED REINFORCED CONCRETE STRUCTURES: EXPERIMENTAL EVALUATION OF EXTERNAL LIGHTWEIGHT STEEL EXOSKELETON SOLUTION
Simone Galano, Ismail Ozan Demirel, Andrea Rossi, Ugurhan Akyuz
- C 25899** REDUCTION OF SEISMIC VULNERABILITY FOR UNREINFORCED MASONRY BUILDINGS USING TARGET RETROFITTING
Ante Pilipović, Mario Uroš, Marija Demšić, Marta Šavor Novak
- C 26225** OPTIMIZING PERFORMANCE OF CORRUGATED STEEL PLATE SHEAR WALL USING MACHINE LEARNING-BASED DESIGN PROCEDURE
Farzin Kazemi, Neda Asgarkhani, Wojciech Migda, Robert Jankowski
- C 26328** A MACHINE LEARNING APPROACH FOR OPTIMAL RETROFITTING OF STEEL STRUCTURES WITH BUCKLING-RESTRAINED BRACES
Neda Asgarkhani, Farzin Kazemi, Wojciech Migda, Patryk Deniziak, Robert Jankowski
- C 26815** A LEAD RUBBER BEARING DEVICE EQUIPPED WITH OPTIMAL SHAPE AND RUBBER MATERIAL
Natalia Lasowicz, Neda Asgarkhani, Farzin Kazemi
- C 25924** RETROFITTING TECHNIQUES FOR STRUCTURAL CONTINUITY IN PHASED CONSTRUCTION: A CASE STUDY OF A REINFORCED CONCRETE BUILDING
Jordan Bojadjev, Golubka Necevska Cvetanovska, Nikola Petrov, Julija Dimitrievska

COMPDYN TS 15 - III
OPTIMUM DESIGN AND CONTROL IN STRUCTURAL DYNAMICS
AND EARTHQUAKE ENGINEERING
Wednesday
17:00 - 19:00
Room BChair: *Baiping Dong*

- C 25390** EXPERIMENTAL INVESTIGATION OF PULSE-TYPE GROUND MOTION EFFECTS ON DAMPED STEEL STRUCTURE
Baiping Dong, Yunlong Chang, Peiyuan Yang, Theodoros Karavasilis
- C 26121** OPTIMIZATION OF STRUCTURAL RESPONSE UNDER SEISMIC EXCITATIONS USING FIRST-ORDER EQUIVALENT STATIC LOADS
Mordechay Buzaglo, Nicolò Pollini
- C 25165** ALL-AT-ONCE TRANSIENT STRUCTURAL ANALYSIS AND DESIGN OPTIMIZATION WITH APPLICATION TO SEISMIC RETROFITTING
Nicolò Pollini
- C 25428** GENERALISED PASSIVE STATE-DEPENDENT SWITCHES
Yuan Li, Emily Nar, Jason Zheng Jiang
- C 26018** DYNAMIC TESTING AND MODELING OF PRECAST UHPC COLUMNS WITH DIFFERENT FIBERS TYPES AND SEISMIC JOINT MATERIALS
Allan Romero, Mohamed Moustafa
- C 25913** OPTIMIZING LIFE-CYCLE ENVIRONMENTAL IMPACT IN SEISMIC REGIONS: THE ROLE OF FLUID VISCOUS DAMPERS
Ohad Idels, Oren Lavan

COMPDYN TS 23 - II
SOIL-STRUCTURE INTERACTION & SOIL DYNAMICS
Wednesday
17:00 - 19:00
Room CChair: *Gian Paolo Cimellaro*
C 24475 EXPERIMENTAL SHAKE TABLE STUDY OF THE SOIL-STRUCTURE INTERACTION EFFECTS IN STEEL SHELTERS SUBJECTED TO SUBDUCTION EARTHQUAKES

*Ramón Mata, **Felipe Vicencio**, Eduardo Nuñez, Davide Forcellini*
C 25994 SEISMIC RESPONSE OF INHOMOGENEOUS SOIL DEPOSITS WITH BOUNDED AND UNBOUNDED INHOMOGENEITY

*Khalid Elbasheir, Haralambous Parashakis, Emmanouil Rovithis, Agathoklis Giaralis, Tadahiro Kishida, **George Mylonakis***
C 25291 IMPACT OF FLEXIBLE FOUNDATIONS ON BUCKLING BEHAVIOR IN LIQUID STORAGE TANKS

Jose Colombo, Nicolas Padilla, Jose Almazan
C 25698 RESPONSE OF PERIODIC, MULTI-SPAN BRIDGES ACCOUNTING FOR DYNAMIC SOIL-STRUCTURE INTERACTION

Pieter Reumers, Geert Lombaert, Geert Degrande
C 25223 SEISMIC VERIFICATION OF VIADUCT PIERS ON PILED RAFT FOUNDATIONS IN SOFT SOILS

Matteo Corigliano, Matteo Zerbi, Claudio Giulio di Prisco
C 25652 NONLINEAR SOIL BEHAVIOR AND LIQUEFACTION SUSCEPTIBILITY IN LEBANON: A 1D NUMERICAL APPROACH

Hiba Labaki, Etienne Bertrand, Luis Fabian Bonilla, Marleine Brax, Muhsin Elie Rahhal
COMPDYN TS 26 - II
STEEL STRUCTURES
Wednesday
17:00 - 18:00
Room DChair: *Kohei Tanaka*
C 25871 ANALYTICAL STUDY ON CYCLIC LOCAL BUCKLING BEHAVIOR AND SEISMIC PERFORMANCE OF JOINT PANELS OF SQUARE STEEL TUBE COLUMNS AND H-SHAPED STEEL BEAMS

Kohei Tanaka, Kosuke Sato
C 25830 NUMERICAL STUDY ON THE SEISMIC PERFORMANCE ASSESSMENT OF A NEW INSPECTABLE ALL-STEEL SHORT-CORE BUCKLING RESTRAINED BRACE (ASBRB)

Gopa Das, Sajal Kanti Deb
C 26092 COMPARING THE POST-FIRE BEHAVIOR OF I-SHAPED AND TRAPEZOIDAL LINKS AS INNOVATIVE DAMPERS TO ENHANCE CBF BRACES

Min Jae Park, Denise-Penelope Kontoni, Ali Ghamari
COMPDYN MS 59 - II
SEISMIC ASSESSMENT AND RETROFITTING OF EXISTING STEEL STRUCTURES: CURRENT PRACTICE AND FUTURE CHALLENGES
Wednesday
17:00 - 17:40
VIP RoomMS Organizers: *Luigi Di Sarno, Fabio Freddi, Mario D'Aniello*Chair: *Luigi Di Sarno*
C 24992 SEISMIC RETROFIT OF AN EXISTING HYBRID STRUCTURE BUILDING USING CENTRICALLY STEEL BRACED FRAMES

DAY 4

WEDNESDAY 18 JUNE

Florea Dinu, Calin Neagu, Dan Dubina, Dan Grecea

- C 24738** SEISMIC ACCELERATION DEMANDS IN JACKET-SUPPORTED OFFSHORE WIND TURBINES
Zeyad Khalil, Peter Stafford, Ahmed Elghazouli

COMPDYN MS 29
LIFECYCLE CONSEQUENCE ANALYSIS OF BUILDINGS AND
INFRASTRUCTURE SUBJECT TO EARTHQUAKES AND OTHER HAZARDS

Wednesday
17:40 - 19:00

VIP Room

MS Organizers: *Simona Bianchi, Leandro Iannacone, Roberto Gentile*

Chair: *Roberto Gentile*

-
- C 24829** PROACTIVE OR REACTIVE? PROBABILISTIC DYNAMIC LIFE CYCLE ASSESSMENT FOR THE EVALUATION OF ADAPTATION STRATEGIES IN CRITICAL INFRASTRUCTURE UNDER NATURAL HAZARD
Roberta Di Bari, Dimitrios Bilonis, Korbinian Czirwitzky, David Borschewski, Stergios Aristoteles Mitoulis
- C 25424** INFLUENCE OF THE CHOICE OF SEISMIC LOSS METHOD ON ESTIMATING EARTHQUAKE-RELATED ENVIRONMENTAL IMPACTS OF STEEL FRAME BUILDINGS
Shivalinga Baddipalli, Nicholas Leavitt, Mohsen Zaker Esteghamati
- C 25794** MULTI-CRITERIA DECISION-MAKING APPLICATION FOR SUSTAINABLE BUILDING RENOVATION
Margherita Buttazzoni, Martina Caruso, Chiara Passoni, Simone Labò, Alessandra Marini, Rui Pinho

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