

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 27766 ADVANCES AND APPLICATIONS IN ISOGEOMETRIC ANALYSIS OF DYNAMIC AND TIME-DEPENDENT PROBLEMS
Alessandro Reali

**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: *David Moens***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: *Marco Domaneschi***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 eorgantzia

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

DAY 1

SUNDAY 15 JUNE

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 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

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 25471 A COMPARISON OF SELECTIVE MASS SCALING METHODS FOR THIN SOLIDS
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 Realì

**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

**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: *Pedro Museros*

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- 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 25833** INFLUENCE OF NONSYMMETRIC TRAIN LOADING IN THE DYNAMICS OF HIGH-SPEED BRIDGES
*Pedro Museros, **Carlos Riascos***
- C 25491** NUMERICAL APPROACH TO THE TRAFFIC INDUCED VIBRATIONS ON BRIDGES
Stefano Ercolessi, Carlo Rainieri, Giovanni Fabbrocino
- C 25158** MACHINE LEARNING APPROACH TO MODELLING WHEEL-RAIL CONTACT FORCES IN HYBRID VEHICLE-STRUCTURE INTERACTION ALGORITHM
Eduardo Granato, Pedro Montenegro, Túlio Bittencourt
- C 24580** EFFICIENT DESIGN OF TRUSS FOOTBRIDGES WITH STIFFNESS-PROPORTIONAL INERTERS
*Nir Itzhak Ben-Israel, **Oren Lavan***

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*

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- 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 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*

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

DAY 1

SUNDAY 15 JUNE

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: *Konstantinos Kalfas*

- C 24646** DEGRADING HYSTERESIS PHENOMENA IN REINFORCED CONCRETE STRUCTURES: CLASSIFICATION AND MODELING
Nicolò Vaiana, Luciano Rosati
- 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

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 KOROPI, 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

COMPDYN MS 44
ASSESSMENT, RETROFIT AND ASSET MANAGEMENT OF STRUCTURES
AND INFRASTRUCTURE SYSTEMS

Sunday
17:45 - 19:45

VIP Room

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

Chair: *Stergios A. Mitoulis*

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- 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

DAY 1

SUNDAY 15 JUNE

- 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

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

DAY 2

MONDAY 16 JUNE

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

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, Pierrick 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

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 Abidine Fellah, E. Ogam

U 21314 UNSUPERVISED SEGMENTATION OF LOW-CONTRAST CONCRETE XCT IMAGES: ASSESSING QUALITY WITHOUT GROUND TRUTH
Kaustav Das, Jan Sykora, Anna Kucerova

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*

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 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*

C 25027 A SCALABLE AND EFFICIENT METHOD FOR CITYWIDE SEISMIC VULNERABILITY ASSESSMENT: INTEGRATING TYPOLOGY EXTRACTION, PARAMETRIC MODELING AND STRUCTURAL ANALYSIS

Jaime de-Miguel-Rodríguez, Ángel Cea-Fons, Antonio Morales-Esteban

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*

DAY 2

MONDAY 16 JUNE

- 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*

- 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 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*

- U 21457** **KEYNOTE:** DEEP SET BASED STOCHASTIC OPERATOR LEARNING AND ITS APPLICATIONS IN UNCERTAINTY QUANTIFICATION
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
- 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 Hafiez, 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 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 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*

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- 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

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*

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- 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
- 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
- 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 Bhole**, Karthik Duraisamy*

U 20986 MULTI-FIDELITY UNCERTAINTY QUANTIFICATION AND PERSONALIZATION FOR CORONARY BLOOD FLOW SIMULATIONS INFORMED BY CLINICAL IMAGING

***Karthik Menon**, Andrea Zaroni, 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: *Mehrdad Aghagholizadeh*

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*

DAY 2

MONDAY 16 JUNE

COMPDYN TS 5 - II DYNAMICS OF CONCRETE AND MASONRY STRUCTURES

Monday
9:00 - 11:00

Room C

Chair: *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 D

MS 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

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: *Giuseppe Quaranta*

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 Orakdöğen

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

DAY 2

MONDAY 16 JUNE

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 Cherkaev

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, Alessandro Pisapia, Aldo Milone*

Chair: *Aldo Milone*

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*

- 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*

DAY 2

MONDAY 16 JUNE

- 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: *Silvia Caprili*

- 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*

- 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 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
- 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

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

DAY 2

MONDAY 16 JUNE

- 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
- 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

**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: *Meng-Ze Lyu*

- U 21092** ADVANCED FRAGILITY ANALYSIS METHOD TOWARDS RESILIENCE ASSESSMENT OF STRUCTURES AND INFRASTRUCTURAL SYSTEMS
Meng-Ze Lyu, De-Cheng Feng
- U 21363** INVESTIGATION OF THE KERNEL REGRESSION METHOD IN RELIABILITY SENSITIVITY ANALYSIS OF UNCERTAIN STRUCTURAL DYNAMIC SYSTEMS
Oindrila Kanjilal, Iason Papaioannou, Daniel Straub

DAY 2

MONDAY 16 JUNE

- 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
- 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 Noureldin
- 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

DAY 2

MONDAY 16 JUNE

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*

-
- 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

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: *David Moens*

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- U 21520** RELIABILITY ANALYSIS OF CRACKED STRUCTURES WITH UNCERTAIN-BUT-BOUNDED DAMAGE
Roberta Santoro
- U 21024** TRACTABLE BAYESIAN INVERSE UNCERTAINTY QUANTIFICATION FOR AUTOMOTIVE PASSIVE SAFETY
Maternus Herold, Jonas Jehle, Matthias Gerds
- 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 Dodt, 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, Jayadipta Ghosh

DAY 2

MONDAY 16 JUNE

- 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 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
- 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 Roder, 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

COMPDYN TS 16 - II
PERFORMANCE-BASED EARTHQUAKE ENGINEERING

Monday
17:00 - 19:00

Nefeli B

Chair: *Nicos Kalapodis*

- 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** PUSH-OVER-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

DAY 2

MONDAY 16 JUNE

- 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

Rotisserie

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

- 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
- 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

DAY 2

MONDAY 16 JUNE

- 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

COMPDYN TS 9 GEOTECHNICAL EARTHQUAKE ENGINEERING

Monday
17:00 - 19:00

Room A

Chair: *Atilla Ansal*

- C 26035** **KEYNOTE:** 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-TÜRKİYE
Ufuk Hancilar, Karin Şeşetyan, Emin Menteşe, Eser Çaktı, 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*

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- 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*

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- 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: *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 25720** GENERATIVE 3D PRINTING AS A RAPID RESPONSE TO HOUSING CRISIS
Laura Sardone, Evangelia Frangedaki
- 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 - 10:20

Delphi

Chair: *Eleni Chatzi*

- 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

COMPDYN SEMI-PLENARY LECTURES

Tuesday
9:00 - 11:00

Salon des Roses A

Chair: *Muneo Hori*

- 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** FLEXIBLE JOINTS FOR SEISMIC-RESILIENT MASONRY-INFILLED RC FRAMES: SHAKING TABLE TEST RESULTS
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*

- 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: *Eugenia Verrigni Petrei Castelli*

- 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*

- 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 25759** ASSESSING THE IMPACT OF HORIZONTAL RESTRAINTS ON THE SEISMIC ROCKING BEHAVIOUR OF MASONRY FAÇADES INCLUDING THE DYNAMIC SOIL-STRUCTURE INTERACTION
Domenico Gaudio, Valerio Guglielmotti, Francesca Taddei, Linda Giresini
- 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 Carstenseen, 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: *Elena Miceli*

- 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 Çalım, 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*
Chair: *Bora Pulatsu*

- C 26019** APPLIED ELEMENT MODELLING OF MASONRY ARCHES STRENGTHENED WITH FRCM: PRELIMINARY RESULTS
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

DAY 3

TUESDAY 17 JUNE

- C 24969** IMPACT OF SUPERSTRUCTURE GEOMETRY ON THE SEISMIC BEHAVIOR OF MASONRY ARCH BRIDGES USING DISCRETE ELEMENT MODELING
Alessia Furioli, 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
- 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 Erkmén
- 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

DAY 3

TUESDAY 17 JUNE

- 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*
- 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 Czettel, Andreas Boudouvis, Stéphane Bordas

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 Seyedi, 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 Abbatì, Giacomo Destro Bisol, Linda Giresini, Francesca Taddei, Claudia Casapulla

Chair: Christian Salvatori

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
- 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

DAY 3

TUESDAY 17 JUNE

- 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

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: *Eleonora Bruschi*

- 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

COMPDYN MS 56 - II NUMERICAL MODELLING AND ANALYSIS OF STRUCTURES AND INFRASTRUCTURES USING DISCRETE ELEMENT APPROACHES

Tuesday
14:30 - 16:30

Epsilon

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

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, Satyadhrik Sharma, Francesco Graziotti

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 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*

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

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

Tuesday
14:30 - 16:30

Room B

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

Chair: *Daniele Perrone*

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 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: *Michalis Fragiadakis*

C 27734 STRUCTURAL IDENTIFICATION AND SINGULARITY DETECTION ON SEISMIC DATA USING THE WAVELET TRANSFORM
Pierre Argoul, Michalis Fragiadakis, Francoise 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

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 Ponso*

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 Ponso, Rocco Ditommaso

- C 24837** STATISTICAL THRESHOLDS TO DISTINGUISH PATHOLOGICAL FROM PHYSIOLOGICAL VARIATIONS IN STRUCTURAL EIGENFREQUENCIES

Rocco Ditommaso, Felice Carlo Ponzio

- 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** **KEYNOTE:** 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

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
- 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 Allegrezza, 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** A-POSTERIORI ERROR INDICATORS FOR SCIENTIFIC MACHINE LEARNING WITH MULTISCALE GEOMETRIC DEEP LEARNING
Shivam Barwey, Hojin Kim, 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** AN OPERATOR-LEARNING FRAMEWORK FOR BAYESIAN INFERENCE FOR DIFFUSION PROCESSES
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 Benjamin, 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:

- U 21282** TIERED MULTI-SCALE DAMAGE ASSESSMENT OF CRITICAL INFRASTRUCTURE USING COHERENCE CHANGE DETECTION AND SAM-BASED DEEP LEARNING
Nadiia Kapiika, Sotirios Argyroudis, 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

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 25295 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 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 Rouřil, 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*

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- 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*

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- C 25852** STRUCTURAL TESTING OF FULL-SCALE 3D PRINTED HEMPCRETE WALLS UNDER OUT-OF-PLANE LOADING
Daron Smith, Sumedh Sharma, Mohammad Eltahlawi, Petros Sideris

DAY 3

TUESDAY 17 JUNE

- 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 Giovinazzi***

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*

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*

DAY 3

TUESDAY 17 JUNE

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 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***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 Ponso

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 Løvbak*
 Chair: *Emil Løvbak*

- 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 21123** ON THE PSEUDO-MARGINAL APPROXIMATION OF THE FREE ENERGY INSIDE THE MICRO-MACRO MARKOV CHAIN MONTE CARLO METHOD
Hannes Vandecasteele, Giovanni Samaey
- 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 25910** A REFINED FINITE ELEMENT MODEL FOR THE ASSESSMENT OF NIAGARA-TYPE OVERPASS BRIDGES
Marco Gaetani d'Aragona, Antonino Recupero, Andrea Prota
- C 25646** ASSESSMENT OF STRENGTHENING TECHNIQUES FOR PRESTRESSED REINFORCED CONCRETE BRIDGES: A COMPARATIVE ANALYSIS
Valentina Picciano, Giuseppe Santarsiero, Antonio Paternoster, Andrea Digrisolo
- 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

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 25137** SEISMIC RETROFITTING OPTIMIZATION OF RC BUILDINGS USING CROSS-LAMINATED TIMBER PANELS AND ACCOUNTING FOR MORPHOLOGY-BASED CRITERIA*Carlotta Contiguglia, Giuseppe Quaranta, Cristoforo Demartino***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 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*

DAY 4

WEDNESDAY 18 JUNE

- 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 - 10:00

Gamma

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

Chair: *Mariano Di Domenico*

- C 25017** SHAKING-TABLE TESTS ON 3D SCALED RC STRUCTURE FOR THE ASSESSMENT OF FLOOR RESPONSE SPECTRA

Mariano Di Domenico, Paolo Ricci

- C 25708** A 3D NUMERICAL MODEL FOR NONLINEAR ANALYSES OF RC FRAMED BUILDINGS STRENGTHENED BY E-CLT SYSTEM

Francesca Barbagallo, Erika Licciardello, Edoardo Michele Marino, Angelo Aloisio, Ihsan Engin Bal, Paulo Xavier Candeias, António Araújo Correia, Luca Pozza, Antonio Romanazzi, Eleni Smyrou, Roberto Tomasi, Claudio Mazzotti

- 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
10:00 - 11:00

Gamma

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

Chair: *Giuseppe Santarsiero*

- 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

- C 25583** SEISMIC ASSESSMENT AND INNOVATIVE STRENGTHENING OF CORRODED CANTILEVER STRUCTURES IN MULTI-STOREY 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
- C 25446** PERFORMANCE-SPECTRA DESIGN OF DISSIPATIVE EXOSKELETONS FOR SEISMIC RETROFIT OF RC BUILDING STRUCTURES
Massimiliano Ferraioli, Salvatore Mottola, Osvaldo Pecorari

DAY 4

WEDNESDAY 18 JUNE

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 Bojadjeva, 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 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*
- C 25043** PROGRESSIVE COLLAPSE RETROFIT OF A STEEL-RC HOSPITAL BUILDING USING AN OUTRIGGER-BELT TRUSS SYSTEM
*Massimiliano Ferraioli, Angelo Lavino, **Alberto Mandara***
- C 24765** SEISMIC PERFORMANCE OF STEEL FRAMES WITH ALUMINIUM BUCKLING RESTRAINED BRACES
*Ruban Sugumar, **Dipti Ranjan Sahoo**, Çigdem Avcı-Karataş*

DAY 4

WEDNESDAY 18 JUNE

C 24662 SEISMIC PERFORMANCE OF PINCHING-FREE TENSION-ONLY CBFS EQUIPPED WITH METAL FOAM DAMPERS

Annarosa Lettieri, Atsushi Sato, Massimo Latour, Gianvittorio Rizzano

11:00-11:30

Coffee Break

**COMPDYN
PLENARY LECTURES**
**Wednesday
11:30 - 13:30**
Delphi

 Chair: *Geert Degrande*
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
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 21564 CALIBRATION AND DISCOVERY OF MATERIAL MODELS ACCOUNTING FOR UNCERTAINTY

Laura De Lorenzis
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 - 16:30

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 21299** MULTI-ORDER MONTE CARLO APPROACH LEVERAGING HIERARCHIES OF IMEX RUNGE-KUTTA SCHEMES

Giulia Bertaglia, Lorenzo Pareschi

DAY 4

WEDNESDAY 18 JUNE

U 21177 EFFICIENT BAYESIAN INFERENCE IN LARGE, PARTIALLY STOCHASTIC MODELS FOR COSMOLOGICAL STRUCTURE FORMATION

Louise Kluge, Linus Seelinger, Dylan Nelson, Robert Scheichl

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-STOREY 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

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 25607** RETROFITTING OF EARTHQUAKE-DAMAGED REINFORCED CONCRETE STRUCTURES THROUGH KAN.EPE. AND 3D DETAILED MODELING
Dimitra Gkogkidou, George Markou
- 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

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: *George Markou*

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- 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 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** SMACHINE 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: *Eugen Boos*

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- 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 Bardiani, Marco Giglio, Konstantinos Anyfantis, Claudio Sbarufatti
- 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
- U 21072** TIME-SEPARATED STOCHASTIC MECHANICS FOR TRANSIENT THERMO-MECHANICALLY COUPLED PROBLEMS
Christian Müller, Hendrik Geisler, Phillip Junker

- U 21291** BAYESIAN INFERENCE FOR UNCERTAINTY QUANTIFICATION IN THERMAL AGING OF EPDM RUBBER
Aravind Kadhambariyil, Stephane Bordas, Lars Beex
- 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

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: *Francesco Cavalieri*

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- C 25811** SEISMIC ASSESSMENT AND MODELLING OF DOWEL BEAM TO COLUMN CONNECTIONS
Davide Bellotti, Francesco Cavalieri, Roberto Nascimbene
- 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*

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- 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

DAY 4

WEDNESDAY 18 JUNE

- 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 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 Trovatelli, 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
- 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*

- 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*

- 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*
- 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*

DAY 4

WEDNESDAY 18 JUNE

- C 25935** IN-SERVICE CRACK IDENTIFICATION OF TRAIN WHEELSET AXLES USING HIGHER ORDER TRANSMISSIBILITY
Ehsan Naghizadeh, Paolo Tiso, Eleni Chatzi
- 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 A

Chair: *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

COMPDYN TS 15 - III
OPTIMUM DESIGN AND CONTROL IN STRUCTURAL DYNAMICS
AND EARTHQUAKE ENGINEERING

Wednesday
17:00 - 19:00

Room B

Chair: *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 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 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*
C 25223 SEISMIC VERIFICATION OF VIADUCT PIERS ON PILED RAFT FOUNDATIONS IN SOFT SOILS

***Matteo Corigliano**, Matteo Zerbi, Claudio Giulio di Prisco*
COMPDYN TS 26 - II
STEEL STRUCTURES
Wednesday
17:00 - 18:00
Room DChair: *Paolo Zampieri*
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 60
ADVANCED DISSIPATIVE DEVICES FOR EARTHQUAKE RESISTANT STEEL STRUCTURES
Wednesday
18:00 - 19:00
Room DMS Organizers: *Paolo Zampieri, Federico Gusella, Riccardo Piazzon, Kara Peterman*Chair: *Paolo Zampieri*
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

DAY 4

WEDNESDAY 18 JUNE

Riccardo Piazzon, Jordan Stevy Defo Wabo, **Paolo Zampieri**, Carlo Pellegrino

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

Wednesday
17:00 - 18:20

VIP Room

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

Chair: *Luigi Di Sarno*

C 24812 SEISMIC RESPONSE OF STEEL FRAMES RETROFITTED AGAINST PROGRESSIVE COLLAPSE

Luca Possidente, Giulia Giuliani, Fabio Freddi

C 24992 SEISMIC RETROFIT OF AN EXISTING HYBRID STRUCTURE BUILDING USING CENTRICALLY STEEL BRACED FRAMES

*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*

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*

COMPDYN MS 29 LIFECYCLE CONSEQUENCE ANALYSIS OF BUILDINGS AND INFRASTRUCTURE SUBJECT TO EARTHQUAKES AND OTHER HAZARDS

Wednesday
18:20 - 19:40

VIP Room

MS Organizers: *Simona Bianchi, Leandro Iannacone, Roberto Gentile*

Chair: *Roberto Gentile*

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 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*