OPENING — Monday 8:45 -9:00 — Olympia

PLENARY LECTURES — Monday 9:00 - 11:00 — Olympia

Chair: *Eleni Chatzi*

C 21497 MODELING SEISMIC RESILIENCE ACROSS SCALES: CHALLENGES, OPPORTUNITIES, AND THE ROLE OF MACHINE LEARNING
Jamie E. Padgett, *Raul Rincon*

U 20045 A COMPREHENSIVE LIBRARY FOR UNCERTAINTY QUANTIFICATION IN NEURAL DIFFERENTIAL EQUATIONS AND OPERATORS
Zongren Zou, Xuhui Meng, Apostolos F Psaros, Ling Guo, ***George Em Karniadakis***

C 22647 FIRST ORDER CONSERVATION LAW FORMULATIONS IN SOLID DYNAMICS: APPLICATIONS TO DYNAMIC CRACK PROPAGATION, CONTACT MECHANICS AND STABLE SPH DISCRETIZATIONS
Javier Bonet, *Antonio J. Gil, Chun Hean Lee*

11:00-11:30
Coffee Break

DAY 1
MONDAY 12 JUNE

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

Monday 11:30 - 13:30

Olympia

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

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

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

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

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

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

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

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

Monday 11:30 - 13:30

Attica

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

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

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

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

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

U 19757 AN ACTIVE LEARNING APPROACH USING RATIONAL FUNCTION APPROXIMATIONS FOR MAXIMUM A-POSTERIORI ESTIMATION
***Felix Schneider**, Iason Papaioannou, Bruno Sudret, Gerhard Müller*

UNCECOMP TS 17 - I
UNCERTAINTY QUANTIFICATION

Monday 11:30 - 13:30 | **Templars**

Chair: *Petrie Meyer*

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

U 19789 EXPERIMENTAL INVESTIGATION OF HYSTERESIS BEHAVIOUR OF A BOLTED FLANGE SYSTEM
***Nidhal Jamia**, Matthew S. Bonney, Javad Taghipour, Hassan Jalali, Michael I. Friswell, Hamed Haddad Khodaparast, Hamed Farokhi*

U 19618 QUANTIFYING UNCERTAINTIES IN NUMERICAL PREDICTIONS OF DYNAMIC CAVITATION
***Erdinç Kara**, Artur K. Lidtke, Bulent Duz, Douwe Rijpkema, O. Kemal Kinaci*

U 19653 APPROXIMATE BAYESIAN MODAL ANALYSIS WITH PARTICLE-SWARM PROPOSALS
***Max Champneys**, Timothy Rogers*

U 19915 AN HP-ADAPTIVE MULTI-ELEMENT STOCHASTIC COLLOCATION METHOD FOR SURROGATE MODELING AND UNCERTAINTY QUANTIFICATION
*Armin Galetzka, **Dimitrios Loukrezis**, Niklas Georg, Herbert De Gersem, Ulrich Römer*

U 20007 CHANGE DETECTABILITY IN BAYESIAN SETTING
***Francesca Marsili**, Filippo Landi, Sylvia Keßler*

U 19657 ON THE CUMULATIVE DISTRIBUTION FUNCTION OF OUTPUT RANDOM VARIABLES IN THE STUDY OF DYNAMIC SYSTEMS
***Massimiliano Lucchesi**, Barbara Pintucchi, Nicola Zani*

COMPDYN TS 14 - I
NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS

Monday 11:30 - 13:30 | **Kallirhoe 1**

Chair: *Aikaterini Genikomsou*

C 20143 **KEYNOTE:** FEA-VR SYSTEM FOR IN-DOOR NON-STRUCTURAL COMPONENTS UNDER SEISMIC EXCITATIONS
***Daigoro Isobe**, Masaki Koyano, Yang Quanyi, Yan Meng*

C 21028 RAILWAY TRACK STRUCTURAL DYNAMICS VIA PERIODIC APPROACHES
*Angie Lamprea-Pineda, Alexandre Castanheira-Pinto, Pedro Alves Costa, Peter Woodward, Mohammed Hussein, **David Connolly***

C 21317 FINITE ELEMENT MODELLING OF SUSPENDED CEILING SYSTEMS BASED ON EXTENSIVE COMPONENT TESTING AND MODEL EVALUATION VIA SHAKING TABLE TESTS: POP RIVET AND SEISMIC CLIP PERIMETER CONNECTIONS
***Shakhzod Takhirov**, Yelena Straight*

C 20096 A NEW MULTISCALE STEEL-CONCRETE BOND MODEL FOR STRUCTURAL DYNAMICS APPLICATIONS
***Maryam Trad**, Ibrahim Bitar, Stéphane Grange, Benjamin Richard*

C 21095 A NOVEL FINITE ELEMENT FORMULATION FOR THE DYNAMIC ANALYSIS OF DAMPED EULER-BERNOULLI BEAMS UNDER MOVING LOADS
Hugo Santos

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

Monday
11:30 - 13:30

Kallirhoe 2

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

C 20792 **KEYNOTE:** DEVELOPING AN ARTIFICIAL NEURAL NETWORK MODEL THAT PREDICTS THE FUNDAMENTAL PERIOD OF STEEL STRUCTURES USING A LARGE DATASET
*Ashley Megan van der Westhuizen, Nikolaos Bakas, **George Markou***

C 21195 DERIVING COARSE-GRAINED MODELS OF MOLECULAR SYSTEMS BY APPROXIMATING THE FREE ENERGY SURFACE WITH MACHINE LEARNING ALGORITHMS
***Nikolaos Bakas**, Antonis Chazirakis, Eleftherios Christofi, Vangelis Harmandaris*

C 20611 DEVELOPMENT OF FORMULAE FOR THE SECTION ROTATIONS DUE TO BENDING OF CURVED STEEL I-BEAMS THROUGH AI AND ML ALGORITHMS
***Victor Chibaya**, George Markou, Nikolaos Bakas*

C 20866 SMART METHOD RECOMMENDATIONS FOR THE DETECTION OF POST-EARTHQUAKE DAMAGES IN RC BUILDINGS
***Gamze Doğan**, Musa Hakan Arslan, Alper Ilki*

C 20481 SURROGATE MODELING OF THE RESPONSE OF A BEARING DEVICE FOR PASSIVE SEISMIC ISOLATION
Todor Zhelyazov

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

Monday 11:30 - 13:30 | **Abbey**

MS Organizers: *Thomas JR Hughes, Alessandro Reall, Simone Morganti*
Chair: *Alessandro Reall*

C 20723 AN ENERGY-MOMENTUM STABLE PREDICTOR-MULTICORRECTOR EXPLICIT TIME-INTEGRATOR FOR FINITE-STRAIN DYNAMICS
***Pouria Behnoudfar**, Victor Calo, Nicolas Labanda*

C 20529 GHOST MASS AT TRIMMED PATCHES IN ISOGEOMETRIC ANALYSIS FOR EXPLICIT DYNAMICS
***Stein K. F. Stoter**, Sai C. Divi, Frits de Prenter, Clemens V. Verhoosel, E. Harald van Brummelen*

C 20546 A STUDY ON TRANSVERSE SHEAR PARAMETRIZATION IN NON-LINEAR ISOGEOMETRIC HIERARCHIC SHELLS FOR TRANSIENT PROBLEMS
***Rebecca Thierer**, Bastian Oesterle, Manfred Bischoff*

C 20559 THE CONCEPT OF INTRINSICALLY SELECTIVE MASS SCALING EXEMPLIFIED FOR HIERARCHIC PLATE FORMULATIONS
***Lisa-Marie Krauß**, Rebecca Thierer, Anton Tkachuk, Manfred Bischoff, Bastian Oesterle*

C 20636 ON THE APPLICATION OF MASS LUMPING TO IGA FORMULATIONS IN EXPLICIT DYNAMICS
***Susanne Held**, Wolfgang Dornisch, Sascha Eisenträger*

C 21230 AN ISOGEOMETRIC ANALYSIS-BASED FORMULATION FOR THE FULLY EXPLICIT DYNAMICS OF GEOMETRICALLY EXACT BEAMS
***Enzo Marino**, Giulio Ferri*

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

Monday 11:30 - 13:30 | **Ground**

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

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

C 21328 PERSITALTIC DRIVEN FLOWS IN PIEZOELECTRIC POROUS DYNAMIC METAMATERIALS - HOMOGENIZATION BASED MODELLING
***Eduard Rohan**, Vladimír Lukeš*

C 21374 SENSING OF DYNAMIC STRUCTURAL RESPONSES BY PIEZO-ELECTRIC ELEMENTS: MODELLING AND EXPERIMENTAL STUDIES
***Radek Kolman**, Jaromír Kylar, Vojtěch Kotek, Robert Cimrman, Ladislav Musil, Jakub Malínek, Martin Marek*

C 20104 INVERSE FORCE IDENTIFICATION OF VIBRO-ACOUSTIC SYSTEM USING HYBRID STRONGLY-COUPLED MODEL REDUCTION TECHINQUE
***Hyeonah Shin**, Seungin Oh, Jihyun Jun, Byunyoung Chung, Jin-Gyun Kim*

C 20384 A STUDY OF CONTACT-IMPACT PROBLEMS WITH A NEW BI-PENALTY FORMULATION
***Yun-Jae Kwon**, S.S. Cho, Radek Kolman, K.C. Park, Jin-Gyun Kim*

C 20662 FINITE ELEMENT TECHNOLOGY-BASED SELECTIVE MASS SCALING FOR SHEAR DEFORMABLE STRUCTURAL ELEMENT FORMULATIONS
***Bastian Oesterle**, Anton Tkachuk, Manfred Bischoff*

COMPDYN MS 34
INSIGHTS AND DEVELOPMENTS IN DYNAMIC SOIL-FOUNDATION-STRUCTURE INTERACTION
Monday
11:30 - 13:30
Room 1A

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

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

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

C 21454 ASSESSMENT OF MACRO-ELEMENTS IN THE PREDICTION OF THE RESPONSE OF OFFSHORE WIND TURBINES
***Olgu Orakci**, Nunzia Letizia, Stijn François, Shiaohuey Chow, Yinghui Tian, George Anoyatis*

C 20763 FILTERING EFFECT FOR A PILE IN TWO-LAYER SOIL
***Raffaele Cesaro**, Raffaele Di Laora*

C 20582 A PHYSICS INFORMED NEURAL NETWORK (PINN) APPROACH FOR SOIL-PILE INTERACTION
*Michail Madianos, Panagiotis Lykourgias, Dimitrios Loupas, Maria Papanikolaou, Stijn François, George Anoyatis, **Aggelos Tsikas***

C 20568 NUMERICAL BACK-ANALYSIS OF DYNAMIC CENTRIFUGE TESTS ON THE SEISMIC BEHAVIOUR OF CAISSON FOUNDATIONS SUPPORTING BRIDGE PIERS
***Domenico Gaudio**, Fabrizio Murillo*

C 21962 DIMENSIONLESS FACTORS GOVERNING THE LATERAL DISCONNECTION EFFECTIVENESS
***Fausto Somma**, Alessandro Flora*

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

Monday 11:30 - 13:30 | **Room 1B**

MS Organizers: *Castorina Silva Vieira, Yiannis Tsompanakis*
Chair: *Yiannis Tsompanakis*

C 21336 1D HARMONIC RESPONSE OF INHOMOGENEOUS SOIL DEPOSITS WITH EXPONENTIALLY VARYING STIFFNESS: EXACT & APPROXIMATE SOLUTIONS
Haralambos Parashakis, ***Emmanouil Rovithis****, George Mylonakis*

C 20506 MATERIAL POINT METHOD AND FINITE DIFFERENCES FOR THERMO-HYDRO-MECHANICAL MODELLING OF GEOTECHNICAL STRUCTURES
Francisco Zabala

C 20749 GEOTECHNICAL CONSIDERATIONS AND VIBRATION RESPONSE DURING ROTARY PILING FOR CONSTRUCTING BRIDGES
Rajeev Kumar Garg*, Seema Garg, Ganesh Kumar Sahu, Jitendra Goyal, K.N. Ghosh*

C 21513 SEMI-ANALYTICAL SOLUTIONS FOR EVALUATING THE FIM FOR PILE FOUNDATIONS
Stefano Stacul*, Nunziante Squeglia*

C 21275 PREDICAMENT OF THE 1D ASSUMPTION IN SITE RESPONSE ANALYSIS AND IMPLICATION ON VERTICAL GROUND MOTION ASSESSMENT
Junfei Huang*, David McCallen*

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

Monday 11:30 - 13:30 | **Room 2A**

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

C 21345 3D EXPLORATION OF INTERNAL STRESSES DUE TO LATERAL LOADS AND FOUNDATION MOVEMENTS IN A SEMICIRCULAR ARCH
Antonino Iannuzzo*, Antonio Gesualdo, Carlo Olivieri, Andrea Montanino*

C 20462 NUMERICAL AND OPERATIONAL MODAL ANALYSES OF A MASONRY BELL-TOWER INSERTED IN A BUILDING AGGREGATE
Alessandra De Angelis*, Giuseppe Maddaloni, Maria Rosaria Pecce*

C 20860 THE ROLE OF UNDERGROUND ARCHAELOGICAL REMAINS ON THE SEISMIC RESPONSE OF A HISTORIC SITE
Antonella Ambrosino*, Enza Zeolla, Alessandra De Angelis, Stefania Sica*

C 21247 A NOVEL FE MODEL FOR THE LEANING TOWER OF PISA
Dionis Butuc, Anna De Falco, Carlo Resta, Nunziante Squeglia, ***Laura Vignali***

C 21347 APPLICATION OF THE CONTINUOUS AIRY-BASED FOR STRESS SINGULARITIES (CASS) TO THE LOAD BEARING CAPACITY OF MASONRY STRUCTURES UNDER SEISMIC LOADS
Andrea Montanino*, Francesca Linda Perelli, Daniela De Gregorio, Giulio Zuccaro*

C 21023 EVALUATION OF THE SEISMIC STABILITY OF UNDERGROUND CAVITIES IN NAPLES
Filomena de Silva*, Stefania Fabozzi, Emilio Bilotta, Alessandro Flora*

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

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

Monday 11:30 - 13:30 — *Room 2B*

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

U 19965 RELAXATION-BASED IMPORTANCE SAMPLING FOR RARE EVENT PROBABILITY ESTIMATION
***Jianhua Xian**, Ziqi Wang*

U 19824 APPLICATION OF MULTI-FIDELITY AND RANDOMIZED QUASI-MONTE CARLO METHODS IN THE PROBABILISTIC ASSESSMENT OF EXCAVATION-INDUCED BUILDING DAMAGES
***Jinyan Zhao**, Matthew DeJong*

U 19749 APPLICATION OF PROBABILISTIC LEARNING ON MANIFOLDS FOR SURROGATE MODELING OF STRUCTURAL EARTHQUAKE RESPONSE
*Kuanshi Zhong, Javier Navarro, **Sanjay Govindjee**, Gregory Deierlein*

U 19723 RELIABILITY-BASED OPTIMIZATION OF ENGINEERING SYSTEMS BY THE CROSS-ENTROPY METHOD
***Oindrila Kanjilal**, Iason Papaioannou, Daniel Straub*

U 19946 DATA-DRIVEN RELIABILITY OPTIMISATION OF (INFRA)STRUCTURE SYSTEMS USING BUFFERED FAILURE PROBABILITY
***Ji-Eun Byun**, Johannes Royset*

U 19912 EFFICIENT IMPORTANCE SAMPLING VIA STOCHASTIC OPTIMAL CONTROL FOR STOCHASTIC REACTION NETWORKS
***Sophia Wiechert**, Chiheb Ben Hammouda, Nadhir Ben Rached, Raúl Tempone*

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

Monday 11:30 - 13:30 — *Room 3A*

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

U 20011 **KEYNOTE:** INVERSE ANALYSIS BONUS OPTION VIA MULTIPHYSICS MODELING
***Wolfgang A. Wall**, Jonas Nitzler, Gil Robalo Rei, Maximilian Dinkel*

U 19999 AUTO-ENCODING VARIATIONAL NEURAL OPERATORS FOR INVERSE PROBLEMS WITH FUNCTIONAL DATA
***Jacob Seidman**, Georgios Kissas, George Pappas, Paris Perdikaris*

U 20004 PROBABILITY, EVIDENCE, UNCERTAINTY AND TRUSTWORTHINESS OF POLYNOMIAL CHAOS AND GAUSSIAN PROCESS SURROGATES
***Sascha Ranftl**, Wolfgang von der Linden*

U 19917 EFFICIENT HIGH-DIMENSIONAL BAYESIAN MULTI-FIDELITY INVERSE ANALYSIS FOR EXPENSIVE LEGACY SOLVERS
***Jonas Nitzler**, Wolfgang A. Wall, Phaedon-Stelios Koutsourelakis*

U 19919 AN APPROACH FOR SOLVING INVERSE PROBLEMS USING CONSTRAINED GAUSSIAN PROCESSES
***Maximilian Dinkel**, Carolin M. Geitner, Wolfgang A. Wall*

U 19623 MULTILEVEL BAYESIAN INFERENCE GIVEN SUMMARY STATISTICS, HIGH-DIMENSIONAL INPUTS, AND EXPENSIVE MODELS
***Pieterjan Robbe**, Luc Bonnet, Tiernan Casey, Khachik Sargsyan, Habib Najm*

COMPDYN MS 37 - I
DESIGN OF STRUCTURES UNDER EXTREME LOADS

Monday
11:30 - 13:30

Room 3B

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

C 20209 EVALUATION OF MAINTENANCES INTERVENTION PERIOD ON STOCK OF EXISTING RC BRIDGES SUBJECT TO DAMAGE PHENOMENA
***Marco Zucca**, Pietro Crespi, Flavio Stochino, Mario Lucio Puppio, Fausto Mistretta, Nicola Longarini, Mauro Sassu*

C 20989 PERFORMANCE ASSESSMENT OF STEEL STORAGE PALLET RACKS USING DIFFERENT SEISMIC ANALYSIS APPROACHES
***Giammaria Gabbianelli**, Daniele Perrone*

C 20123 EQUIVALENT DAMPING RATIO EVALUATION FOR HISTORICAL CHURCH REINFORCED BY CROSS LAM ROOF STRUCTURE FOR IMPROVING THE SEISMIC RESPONSE
***Nicola Longarini**, Pietro Crespi, Marco Zucca*

C 20469 A NUMERICAL STUDY ON FIRE RESISTANCE OF BLAST DAMAGED REINFORCED CONCRETE COLUMNS
***Ravi Mudragada**, Ankit Agrawal, Pradeep Bhargava*

C 20674 THE INFLUENCE OF DAMPING ON PROGRESSIVE COLLAPSE ANALYSIS
***Alex Sixie Cao**, Andrea Frangi*

C 20972 FRAGILITY CURVES FOR STEEL INDUSTRIAL SILOS ACCOUNTING FOR FILLING LEVEL OF GRANULAR-LIKE MATERIAL
***Mohammad Khalil**, Sergio Ruggieri, Vito Tateo, Giuseppina Uva*

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

Monday
11:30 - 13:30

Room 4A

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

C 21431 SEISMIC SAFETY ASSESSMENT AND REINFORCEMENT OF AN OLD R/C FIRE STATION IN PORTO
***Maria M.F.C Leite**, Rui Carneiro de Barros*

C 21430 SEISMIC COLLAPSE RISK OF A ISOLATED TRANSMISSION TOWER AND A TRANSMISSION LINE SYSTEM IN NORTHERN PORTUGAL
***Fabio M. Paiva**, Rui Carneiro de Barros*

C 20471 EXPERIMENTAL AND NUMERICAL DYNAMIC EVALUATION OF PROFILED STEEL DECKING SLAB IN A CONTAINER HOUSE USING MEMS
***Henrique Tavares Lima**, Luis Ernesto de Medeiros Alas, Mateus Narcizo de Almeida Nunes, Iálysson da Silva Medeiros, Douglas Mateus de Lima*

C 20816 MACHINE LEARNING APPROACH FOR PREDICTING FLEXURAL BEHAVIOR VARIATIONS OF I-SHAPED STEEL BEAMS DUE TO MANUFACTURING TOLERANCES
***Cyrus Eshaghi**, Arefeh Mazarei, Rui Carneiro de Barros, Xavier Romão, José Miguel Castro*

C 20832 RESPONSE OF A SMALL WIND TURBINE TOWER UNDER EARTHQUAKE
***Anelise Dick**, Rui Carneiro de Barros, Manuel Braz-César*

C 20833 COMPARATIVE STUDY OF OPTIMUM FORMULATIONS FOR TUNED MASS DAMPERS IN SMALL WIND TURBINE TOWERS
*Anelise Dick, **Rui Carneiro de Barros**, Manuel Braz-César*

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

Monday
11:30 - 13:30

Room 4B

MS Organizer: *Davide Forcellini*
Chair: *Davide Forcellini*

C 21044 3D NUMERICAL SIMULATIONS OF MULTI-LAYERED ELASTOMERIC BEARINGS (EB) SUBJECTED TO COMBINED VERTICAL AND LONGITUDINAL LOADS
***Davide Forcellini**, Kostantinos Kalfas*

C 20913 SAFE DESIGN OF SUBSEA PIPELINES TO COMBINED SEISMIC AND THERMAL LOADING
*Daniele Mina, **Hassan Karampour**, Davide Forcellini*

C 20946 SEISMIC POUNDING OF TYPICAL REINFORCED CONCRETE BUILDINGS SUBJECT TO SOIL STRUCTURE INTERACTION EFFECTS
***İbrahim Öz**, Kaan Kaatsiz*

C 21299 EFFECT OF NON-LINEAR SOIL STRUCTURE INTERACTION IN SEISMIC RESPONSE OF ASYMMETRIC STRUCTURES
***Vivek Balachandra Kartha**, Raj Mukeshbhai Patel*

C 20955 EXPERIMENTAL TESTING OF INNOVATIVE, BIOMIMETIC SEISMIC METAISOLATORS
***Valentina Adinolfi**, Saeedh Qaderi, Giovanni Germano, Julia de Castro Motta, Gianmario Benzoni, Ada Amendola, Massimo Ruzzene, Fernando Fraternali*

C 21160 THE VULNERABILITY OF HIGHLY POPULATED BUILDINGS IN THE FACE OF EARTHQUAKE AND TSUNAMI HAZARDS
***Behnam Beheshtian**, Javad Hashemi, Hing-Ho Tsang*

C 20485 SUPPLEMENTARY DAMPING DEVICES TO MITIGATE THE NEAR-FAULT SEISMIC EFFECTS ON THE UFREI-ISOLATED STRUCTURES
***Shiv Prakash**, Radhey Shyam Jangid*

13:30-14:30
Lunch Break

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

Monday 14:30 - 16:30

Olympia

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

Chair: *Francesco Clementi*

C 20324 KEYNOTE: MECHANICAL-BASED SEISMIC FRAGILITY ASSESSMENT AND RETROFIT INTERVENTION OF CLUSTERED BUILDINGS
Giovanna Longobardi, ***Antonio Formisano***

C 20331 DYNAMIC FEATURES FOR THE SEISMIC DESIGN OF GEO-SOURCED MASONRY BUILDINGS
Noura Zarzour, ***Maria Paola Santisi d'Avila****, Diego Mercerat, Luca Lenti, Michel Oggero*

C 20638 LONG-TERM MONITORING OF A MASONRY TOWER WITH WIRELESS ACCELEROMETERS
Giacomo Zini, Francesca Marafini, Silvia Monchetti, Michele Betti, ***Luca Facchini****, Gianni Bartoli, Maria Girardi, Gianmarco Gurioli, Cristina Padovani, Daniele Pellegrini*

C 20725 GENERATIVE MODELLING AND SEISMIC ASSESSMENT OF ANCIENT TEMPLES: THE TEMPLE OF VESTA (TIVOLI)
Annalaura Vuoto*, Marco Francesco Funari, Shaghayegh Karimzadeh, Paulo B. Laurenço*

C 20819 MODELLING OF DISSIPATIVE MECHANISMS FOR MASONRY-LIKE MATERIALS UNDER CYCLIC LOADING
Héloïse Rostagni*, Cédric Giry, Frédéric Ragueneau*

C 20744 NONLINEAR BEHAVIOR OF EXISTING MASONRY STRUCTURES: AN APPLICATION TO A CASE STUDY WITH DIFFERENT STRUCTURAL CONFIGURATIONS
Roselena Sulla*, Michele D'Amato, Rosario Gigliotti, Domenico Liberatore*

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

Monday 14:30 - 16:30

Attica

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

Chair: *Michael Shields*

U 19857 ON PHYSICALLY CONSTRAINED NON-INTRUSIVE POLYNOMIAL CHAOS EXPANSION
Lukáš Novák*, Himanshu Sharma, Michael Shields*

U 19834 SURROGATE MODELS FOR REAL-TIME INTERACTIVE TUNNEL ALIGNMENT DESIGN WITH UNCERTAIN DATA
Ba Trung Cao*, Yaman Zendaki, Steffen Freitag, Günther Meschke*

U 19599 MULTI-FIDELITY SEQUENTIAL BAYESIAN OPTIMIZATION AND RELIABILITY ASSESSMENT METHOD FOR THE DESIGN OF COMPLEX SYSTEMS
Romain Espoeys*, Loïc Brevault, Mathieu Balesdent, Sophie Ricci, Paul Mycek*

U 19747 RECOVERING HIDDEN CONSTRAINED SUBSETS BY A GAUSSIAN PROCESS CLASSIFIER ACTIVE LEARNING METHOD BASED ON THE STEPWISE UNCERTAINTY REDUCTION STRATEGY
Morgane Menz*, Miguel Munoz-Zunigo, Delphine Sinoquet*

U 19748 SURROGATE-BASED BAYESIAN INVERSE MODELLING TO CHARACTERIZE AQUIFER PROPERTIES IN A SUBSIDING BASIN
***Yueting Li**, Claudia Zoccarato, Lorenzo Tamellini, Chiara Piazzola, Pablo Ezquerro, Guadalupe Bru, Carolina Guardiola-Albert, Roberta Bonì, Pietro Teatini*

U 20005 SURROGATE-AIDED BAYESIAN POSTERIOR SAMPLING
***Aakash Bangalore Satish**, Sang-ri Yi, Alexandros Taflanidis*

UNCECOMP TS 17 - II
UNCERTAINTY QUANTIFICATION

Monday
14:30 - 16:30

Templars

Chair: *Nicola Pedroni*

U 19987 YIELD AND SENSITIVITY ANALYSIS OF MULTI-ELEMENT ANTENNA ARRAYS USING THE NON-LINEAR PARTIAL LEAST-SQUARES POLYNOMIAL CHAOS EXPANSION TECHNIQUE
*Ketshabile Nfanyana, Leanne Johnson, **Petrie Meyer***

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

U 19823 PROBABILISTIC MODELING AND IDENTIFICATION OF INTERCORRELATED BOUNDED RANDOM FIELDS: APPLICATION TO LINEAR ELASTIC STRUTS AND FIBERS
***Hussein Rappel**, Mark Girolami, Lars Beex*

U 19663 BAYESIAN SOURCE IDENTIFICATION OF URBAN-SCALE AIR POLLUTION FROM POINT AND FIELD CONCENTRATION MEASUREMENTS
***Elissar Al Aawar**, Samah El Mohtar, Mohamad Abed El Rahman Hammoud, Issam Lakkis, Abdulilah K. Alduwais, Ibrahim Hoteit*

U 19677 EFFICIENT ESTIMATION OF MULTIPLE EXPECTATIONS WITH THE SAME SAMPLE BY ADAPTIVE IMPORTANCE SAMPLING AND CONTROL VARIATES
***Julien Demange-Chryst**, François Bachoc, Jérôme Morio*

U 20026 ARTIFICIAL INTELLIGENCE-BASED UNCERTAINTY QUALIFICATION OF THE MECHANICAL PROPERTIES OF SUSTAINABLE CONCRETE SPECIMENS
*Atefeh Soleymani, **Hashem Jahangir**, Denise-Penelope N. Kontoni, Mina Naseri Nasab*

COMPDYN TS 14 - II
NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS

Monday
14:30 - 16:30

Kallirhoe 1

Chair: *Daigoro Isobe*

C 20592 ML-BASED PUNCHING STRENGTH ESTIMATIONS OF FLAT SLABS WITHOUT TRANSVERSE REINFORCEMENT UNDER LATERAL LOADING
Hadi Panahi, ***Aikaterini Genikomsou***

C 20279 WAVE FINITE ELEMENT METHOD FOR THE DYNAMICS OF STRUCTURES WITH CYCLIC SYMMETRY
Tien Hoang*, Denis Duhamel, Gilles Foret, Le-Hung Tran*

C 20344 COMPUTATION OF THE RESPONSE OF DAMAGED RAILWAY TRACKS SUBJECTED TO CONSTANT MOVING LOADS: NUMERICAL RESULTS OBTAINED WITH THE WAVE FINITE ELEMENT METHOD AND AN ANALYTICAL RESULTS
Benjamin Claudet*, Denis Duhamel, Gilles Foret, Tien Hoang, Francis Sabatier, Bertrand Findinier, Hervé Lenglin*

C 20734 TOWARDS A MODEL-ORDER REDUCTION STRATEGY FOR PARAMETRIC STUDIES OF NONLINEAR DYNAMICS PROBLEMS
Alexandre Daby-Seesaram*, Amélie Fau, Pierre-Étienne Charbonnel, David Néron*

C 21236 EXPLORATION OF DYNAMIC LOADING STRUCTURAL TOPOLOGY OPTIMIZATION AND APPLICATION TO BUILDING LATERAL LOAD RESISTING FRAME
Arya Prakash Padhi*, Vaibhav Bhandari, Anupam Chakrabarti, Rajib Chowdhury*

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

Monday
14:30 - 16:30

Kallirhoe 2

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

C 21297 A BIBLIOMETRIC OVERVIEW OF OPEN SCIENCE RESEARCH
Nikolaos Bakas*, Andreas Athenodorou, Nana Anastasopoulou, Katerina Kyprianou, George Katsikatsos, George Markou*

C 21197 PREDICTION OF REINFORCED CONCRETE COLUMNS LIMIT STATES USING MACHINE LEARNING ALGORITHM
Anthos I. Ioannou*, Nikolaos Bakas, George Markou, Ashley Megan van der Westhuizen, Stavroula J. Pantazopoulou, Michael F. Petrou, Dimos C. Charmpis*

C 20440 EXPLORING A-PRIORI AND A-POSTERIORI MODEL ORDER REDUCTION TO RESOLVE THE DYNAMIC RESPONSE OF SKELETAL STRUCTURES
George Pissas*, Savvas Triantafyllou*

C 21192 DEEP NEURAL NETWORKS FOR GENERATING ATOMISTIC CONFIGURATIONS OF MULTI-COMPONENT MACROMOLECULES FROM COARSE-GRAINED MODELS
Eleftherios Christofi*, Antonis Chazirakis, Charalambos Chrysostomou, Mihalis A. Nicolaou, Wei Li, Manolis Doxastakis, Vagelis A. Harmandaris*

C 22670 AN ADAPTIVE REFINEMENT KRIGING METAMODEL FOR STRUCTURAL RELIABILITY ASSESMENT
Ioannis Prentzas*, Michalis Fragiadakis*

C 20932 SEISMIC RESPONSE REDUCTION USING AN ACTIVE TUNED MASS DAMPER DRIVEN BY AN ARTIFICAL NEURAL NETWORK CONTROLLER
***Nour Elhouda Ghanemi**, Mahdi Abdeddaim, Abdelhafid Ounis*

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

Monday
14:30 - 16:30

Abbey

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

C 20312 ADVANCED MODELLING AND RISK ANALYSIS OF RC BUILDINGS EQUIPPED WITH ENERGY DISSIPATION DEVICES DESIGNED BY THE ITALIAN SEISMIC CODE
***Eleonora Bruschi**, Virginio Quaglini, Marco Furinghetti, Alberto Pavese*

C 20679 SEISMIC RETROFITTING OF FRAMED STRUCTURES BY DAMPED BRACES CONSIDERING THE OUT-OF-PLANE RESPONSE OF MASONRY INFILLS
***Fabio Mazza**, Rodolfo Labernarda*

C 20998 LOSS-BASED SEISMIC PRIORITISATION OF EXISTING RC GIRDER BRIDGES
***Andrea Nettis**, Giuseppina Uva*

C 20258 OPTIMAL PROPERTIES OF SINGLE CONCAVE FRICTION PENDULUM BEARINGS FOR THE ISOLATION OF BRIDGES SUBJECTED TO FAR FIELD RECORDS
***Elena Miceli**, Diego Gino, Gugliemo Amendola, Luca Giordano, Paolo Castaldo*

C 20152 FRAGILITY FUNCTION UNCERTAINTY QUANTIFICATION IN INFILLED RC FRAME BUILDINGS
***Al Mouayed Bellah Nafeh**, Gerard J. O'Reilly*

C 21010 EFFECT OF CYCLIC LOAD ON THE TENSILE BEHAVIOR OF A PBO FRCM COMPOSITE
*Angelo Savio Calabrese, Alessandro Cagnoni, Veronica Bertolli, **Tommaso D'Antino**, Pierluigi Colombi, Carlo Poggi*

C 21145 NUMERICAL MODELING OF A NOVEL STEEL-CONCRETE COMPOSITE BEAM-COLUMN JOINT SOLUTION
***William Galik**, Paolo Calvi*

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

Monday 14:30 - 16:30 | **Ground**

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

C 20077 KEYNOTE: DIRICHLET-TO-NEUMANN COUPLING FOR MIXED-DIMENSIONAL TIME-DEPENDENT WAVE PROBLEMS
Dan Givoli, *Daniel Rabinovich*

C 20502 DYNAMIC ANALYSIS OF REINFORCED CONCRETE STRUCTURES MODELED WITH 1D-3D NONMATCHING FINITE ELEMENT MESHES
Francisco García Romero, ***José A. González****, K.C. Park*

C 20965 INFLUENCE OF THE MIDFIELD PROPAGATION CONDITIONS ON ENVIRONMENTAL RAILWAY NOISE
Nhat Quang Ta*, Guillaume Puel, Andrea Barbarulo, Ludovic Chamoin, Baldrik Faure*

C 20510 ASYNCHRONOUSLY IN TIME INTEGRATED INTERFACE DYNAMICS PROBLEM WHILE MAINTAINING ZERO INTERFACE ENERGY
Radim Dvořák*, Radek Kolman, Ondřej Jiroušek, Jose Angel Gonzalez Perez, K.C. Park*

C 20762 TUNED LIQUID SYSTEMS WITH AN EQUIVALENT MECHANICAL MODEL FOR SLOSHING FLUIDS
Giorgia Goursand-Parente*, Bonaventura Tagliafierro, Salvatore Capasso, Alejandro Crespo, Giacomo Viccione, Corrado Altomare, José Domínguez, Iván Martínez-Estévez*

C 20771 FINITE ELEMENT TECHNOLOGY-BASED SELECTIVE MASS SCALING FOR EXPLICIT DYNAMIC ANALYSES OF THIN-WALLED STRUCTURES USING SOLID ELEMENTS
Moritz Hoffmann*, Anton Tkachuk, Manfred Bischoff, Bastian Oesterle*

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

Monday 14:30 - 16:30 | **Room 1A**

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

C 21950 RESILIENCE ASSESSMENT OF ROAD BRIDGES IN MULTI-HAZARD ENVIRONMENT
Olga Markogiannaki, ***Anna Karatzetzou****, Sotiria Stefanidou, Grigorios Tsinidis*

C 20705 MULTI-RISK ASSESSMENT OF A BASE ISOLATED STRUCTURE
Donatella de Silva*, Antonio Bilotta, Romeo Tomeo, Emidio Nigro*

C 20623 DEVELOPMENT OF A MULTI-RISK INDEX FOR ITALY: A TOOL FOR SUPPORTING INFORMED DECISION MAKING ON DISASTER RISK REDUCTION
Gabriella Tocchi*, Gemma Cremen, Carmine Galasso, Maria Polese*

C 20690 DEFINITION OF MULTI-HAZARD VULNERABILITY INDICATORS FOR CULTURAL HERITAGE BUILDINGS
Marco Lazzati, ***Silvia De Angeli****, Giorgio Boni, Serena Cattari, Xavier Romão*

C 20454 APPLICATION OF HAZARD RISK METHDOLOGY ON HISTORICAL BUILT ENVIRONMENT IN TIMISOARA
Iasmina Onescu*, Eugen Onescu, Marius Mosoarca*

C 20619 A MULTI-RISK FRAMEWORK FOR ASSESSING AND RANKING SEISMIC AND FLOOD RISKS: AN APPLICATION IN ITALY-SLOVENIA TRANSBOUNDARY REGION
*Maria Polese, **Gabriella Tocchi**, Matjaz Dolsek, Anze Babič, Marta Faravelli, Barbara Borzi, Nicola Rebora, Daria Ottonelli, Matjaz Mikos, Davide Quaroni, Rocco Masi, Andrea Prota*

C 20963 A BUILDING CLASSIFICATION SYSTEM FOR MULTI-HAZARD RISK ASSESSMENT OF HISTORICAL RELIGIOUS BUILDINGS
***Federica Del Carlo**, Silvia Caprili, Tiago Miguel Ferreira, Pere Roca, Marco Uzielli*

COMPDYN MS 8 - II
RECENT ADVANCES AND CHALLENGES IN GEOTECHNICAL EARTHQUAKE ENGINEERING
Monday 14:30 - 16:30
Room 1B

MS Organizers: *Castorina Silva Vieira, Yiannis Tsompanakis*
Chair: *Yiannis Tsompanakis*

C 20773 OFFSHORE LIFELINES UNDER THE GEOHAZARD OF SEISMIC FAULT RUPTURE PROPAGATION THROUGH SEABED SEDIMENTS
***Nikolaos Makrakis**, Yiannis Tsompanakis, Prodromos N. Psarropoulos*

C 20295 A COMPARISON STUDY BETWEEN 1D AND 3D SITE RESPONSE ANALYSES BASED ON OBSERVED EARTHQUAKE ACCELERATION RECORDS
***Shima Sadeghzadeh**, Atilla Ansal*

C 20783 NUMERICAL INVESTIGATIONS FOR UNSATURATED SLOPE UNDER THE EXCITATION OF PULSE-LIKE AND NON-PULSE GROUND MOTIONS
***Ruohan Wang**, Guan Chen, Yong Liu, Michael Beer*

COMPDYN MS 28 - II
MONITORING, DAMAGE MODELLING AND SOIL-STRUCTURE-INTERACTION IN CULTURAL HERITAGE CONSTRUCTIONS
Monday 14:30 - 16:30
Room 2A

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

C 20870 INFLUENCE OF THE DISPLACEMENT OF THE SUPPORTS ON THE COLLAPSE BEHAVIOR OF MASONRY SEMI-CIRCULAR ARCHES
*Simona Coccia, **Fabio Di Carlo***

C 21313 SEISMIC VULNERABILITY ASSESSMENT OF AN ITALIAN ANCIENT CHURCH ACCORDING TO CONVENTIONAL APPROACHES
***Stefania Imperatore**, Gian Piero Lignola, Barbara Ferracuti*

C 20682 THE ROLE OF FRICTION IN THE DYNAMIC BEHAVIOUR OF FREESTANDING MARBLE OBJECTS
***Ester Sallicandro**, Michela Monaco*

C 21418 AN HYBRID METHODOLOGY FOR THE DEFINITION OF LOCALIZED COLLAPSE CURVES FOR UNREINFORCED MASONRY STRUCTURES
*Daniela De Gregorio, **Francesca Linda Perelli**, Carlo Olivieri, Petros Christou*

COMPDYN TS 24 - I
SOIL-STRUCTURE INTERACTION

C 20141 THE LATERAL CAPACITY OF CONCRETE PILES IN STIFF CLAY TO DENSE SAND
Mina Mikaeel, ***Andrew Gouda***

C 20307 SEISMIC ANALYSIS FOR BUILDING STRUCTURES UNDER DYNAMIC SOIL-PILE INTERACTION USING SIMPLIFIED MODELS
Jun-Yang Shi

UNCECOMP MS 14 - I
GREY-BOX MODELLING FOR UNCERTAINTY QUANTIFICATION
Monday 14:30 - 16:30
Room 2B

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

U 20030 RANDOM FIELD PARAMETER IDENTIFICATION AND RESPONSE VARIABILITY ANALYSIS OF COMPOSITE STRUCTURES WITH UNCERTAIN MECHANICAL PROPERTIES
Panagiotis Gavallas*, George Stefanou, Dimitrios Savvas, Iason Papaioannou*

U 19556 PARAMETRIC P-BOX PROPAGATION BASED ON USING BAYESIAN OPTIMIZATION AND UNSCENTED TRANSFORM
Chen Ding*, Chao Dang, Matteo Broggi, Michael Beer*

U 19593 ENHANCING TRANSFER LEARNING FOR CRASHWORTHINESS STUDIES UNDER LOW DATA AVAILABILITY THROUGH SPHERE PROJECTION
Giada Colella*, Volker A. Lange, Fabian Duddeck*

U 19704 QUANTIFYING THE EPISTEMIC UNCERTAINTY LINKED TO THE DEVELOPMENT PROCESS OF AN EARLY-STAGE COMPONENT FOR CRASHWORTHINESS
Paolo Ascia*, Matthias Faes, Fabian Duddeck*

U 19782 AN UNIFIED ENRICHMENT STRATEGY FOR RELIABILITY-BASED DESIGN OPTIMIZATION USING ADAPTIVE KRIGING AND ZERO-ORDER ALGORITHMS
Alessio Faraci*, Pierre Beaurepaire, Nicolas Gayton*

U 19794 QUANTIFYING THE VALUE OF DOMAIN KNOWLEDGE IN PHYSICS-INFORMED MACHINE LEARNING
Aidan Hughes*, Elizabeth Cross, Keith Worden, Timothy Rogers, Matthew Jones*

UNCECOMP MS 11 - I
UNCERTAINTY QUANTIFICATION UNDER LIMITED DATA
Monday 14:30 - 16:30
Room 3A

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

U 19952 **KEYNOTE:** INTERVAL RELIABILITY ANALYSIS OF STRUCTURES CONTROLLED BY FRACTIONAL VISCOELASTIC DAMPERS WITH UNCERTAIN PARAMETERS
Alba Sofi*, Giuseppe Muscolino, Mario Di Paola*

U 19746 A REDUCED ORDER MODEL APPROACH FOR FUZZY FIELD ANALYSIS
Nataly Manque*, Marcos Valdebenito, Matthias Faes, Pierre Beaurepaire*

U 19772 ON PROCESSING HETEROGENEOUS SOURCES OF LIMITED DATA FOR UNCERTAINTY QUANTIFICATION IN A POSSIBILISTIC FRAMEWORK
***Tom Könecke**, Michael Hanss*

U 19792 IMPRECISE PROBABILITIES AS AN ANSWER TO THE INDETERMINACY INHERENT TO MECHANICAL TOLERANCES
***Kristof A. Simady**, Pierre Beaurepaire, Nicolas Gayton*

U 19797 ROBUST PROBABILITY BOUNDS ANALYSIS FOR FAILURE ANALYSIS UNDER LACK OF DATA AND MODEL UNCERTAINTY
***Adolphus Lye**, Ander Gray, Marco de Angelis, Scott Ferson*

COMPDYN MS 37 - II
DESIGN OF STRUCTURES UNDER EXTREME LOADS
Monday 14:30 - 16:30
Room 3B

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

C 20213 STRUCUTRAL BEHAVIOUR OF STEEL STORAGE RACKS UNDER DIFFERENT FIRE SCENARIOS
***Marco Simoncelli**, Marco Zucca, Flavio Stochino, Livia Bhardi*

C 20029 ROBUSTNESS OF RC FRAMES UNDER EARTHQUAKE AND BLAST CHAINED SCENARIOS
*Mattia Francioli, Juliano Ferreira Martins, **Francesco Petrini**, Franco Bontempi*

COMPDYN TS 15 - I
OPTIMUM DESIGN AND CONTROL

C 22021 **KEYNOTE:** INDOOR TRACKING USING UNMANNED AERIAL VEHICLES
*Alessandro Cardoni, Raffaele Tarantini, **Gian Paolo Cimellaro***

C 20231 OPTIMAL DESIGN OF A TUNED MASS DAMPER INERTER USING A WHALE OPTIMIZATION ALGORITHM FOR THE CONTROL OF BUILDINGS SUBJECTED TO GROUND ACCELERATION
***Mariana Castro-Osorio**, Daniela Vallejo-Paniagua, Verónica Valencia-Valencia, Luis A. Lara-Valencia, John J. Blandón-Valencia*

C 20099 SEISMIC PROTECTION OF NON-STRUCTURAL ELEMENTS IN RC BUILDINGS
***Saraswati Setia**, Gurkirat Singh*

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

Monday 14:30 - 16:30

Room 4A

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

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

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

COMPDYN MS 9
SEISMIC SAFETY ASSESSMENT OF STRUCTURES

MS Organizers: *Pedro Delgado, António Arêde*

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

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

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

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

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

Monday 14:30 - 16:30

Room 4B

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

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

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

U 20003 PHYSICS-INFORMED VARIATIONAL AUTO-ENCODER FOR SOLVING STOCHASTIC DIFFERENTIAL EQUATIONS
*Weiheng Zhong, **Hadi Meidani***

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

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

U 19993 IMPROVING ACCURACY AND COMPUTATIONAL EFFICIENCY OF OPTIMAL DESIGN OF EXPERIMENT VIA BACKWARD GREEDY APPROACH
*Mehdi Taghizadeh, Dongbin Xiu, **Negin Alemazkoor***

16:30-17:00
Coffee Break

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

Monday 17:00 -19:00

Olympia

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

C 20489 SEISMIC VULNERABILITY ASSESSMENT OF VAULTED MAYA CONCRETE TEMPLES IN BONAMPAK, CHIAPAS, MÉXICO
Humfrey Kimanya, Anna Remus, Omar Hamad, Justin Sennyondo, Dung Nguyen, Selman Tezcan, ***Renato Perucchio***

C 20508 PREDICTING THE UNIAXIAL COMPRESSIVE CAPACITY OF NON-STRENGTHENED AND FRP-STRENGTHENED MASONRY COLUMNS USING A FAST NUMERICAL APPROACH
Luis Carlos da Silva*, Gabriele Milani, Ernesto Grande*

C 20191 LIMIT ANALYSIS MODEL FOR A FAST EVALUATION OF CHINESE MASONRY PAGODAS VULNERABILITY
Peixuan Wang*, Gabriele Milani, Shengcai Li*

C 20314 HETEROGENEOUS LIMIT ANALYSIS FOR MASONRY ARCH BRIDGES WITH FULL MODELING OF BACKFILL
Yiwei Hua*, Gabriele Milani*

C 20477 FINITE ELEMENT MODELING OF AN ITALIAN MASONRY ARCH BRIDGE DETECTING DAMAGE UNDER SEISMIC EXCITATIONS
Daniela Addessi, Domenico Liberatore, ***Andrea Battisti***

C 20305 FINITE ELEMENT MODEL FOR RUBBER SEISMIC ISOLATION WITH AND WITHOUT S-SHAPED STEEL DAMPERS
Kai Guo*, Gaetano Pianese, Gabriele Milani*

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

Monday 17:00 - 19:00

Attica

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

U 19890 LATENT PC-KRIGING MODEL FOR HETEROSKEDASTIC REGRESSION OF MECHANICAL RESPONSE OF STRUCTURES TO SEISMIC LOADINGS
Clément Gauchy*, Cyril Feau*

U 19665 SUPERVISED LEARNING OF NONLINEAR SUPERPOSITION PRINCIPLE FOR HYDRODYNAMIC LOADING ON STRUCTURES
Xiaoyuan Luo*, Vijay Nardurlikar, Sangri Yi, Aakash B. Satish, Alistair Revell, Ajay B. Harish*

U 19781 THE USE OF SURROGATE MODELS TO BRIDGE THE GAP BETWEEN IN VIVO AND IN VITRO DEGRADATION OF MAGNESIUM-BASED IMPLANTS
Tamadur Albaraghtheh*, Alexander Hermann, Arman Shojaei, Regine Willumeit-Römer, Christian J. Cyron, Berit Zeller-Plumhoff*

U 19804 ROBUST CALIBRATION OF A HYDROLOGICAL MODEL WITH STOCHASTIC SURROGATE MODELS
Katarina Radišić*, Claire Lauvernet, Arthur Vidard*

U 19814 SURROGATE MODELING VIA FUNCTIONAL TENSOR NETWORKS
***Cosmin Safta**, Nicholas Galioto, John Jakeman, Khachik Sargsyan, Alex Gorodetsky*

U 19822 MULTIFIDELITY SURROGATE MODELLING USING POLYNOMIAL CHAOS EXPANSIONS TO COMBINE NOISY MEASUREMENT DATA AND COMPUTER SIMULATIONS
***Aikaterini Giannoukou**, Stefano Marelli, Bruno Sudret*

UNCECOMP TS 17 - III
UNCERTAINTY QUANTIFICATION
Monday 17:00 - 19:00
Templars

Chair: *Quentin Dollon*

U 19655 ON THE DESCRIPTION OF UNCERTAINTY OF DIGITAL TWIN MODELS
***George Tsialiamanis**, Nikolaos Dervilis, David Wagg, Keith Worden*

U 19818 PROBABILISTIC MODELLING OF AIR TRAFFIC FLOWS USING DEEP ENSEMBLES
***Nick Pepper**, Marc Thomas, George De Ath, Richard Cannon, Richard Everson, Mark Girolami, Tim Dodwell*

U 19984 INFO-GAP ROBUSTNESS ANALYSIS ON THE RISK ASSESSMENT OF A NUCLEAR ACCIDENTAL SCENARIO
***Antoine Ajenjo**, Vincent Chabridon, Emmanuel Ardillon, Scott Cogan, Emeline Sadoulet-Reboul*

U 19705 UNCERTAINTY QUANTIFICATION OF A INDUSTRIAL SCALE CFD APPLICATION USING STOCHASTIC SPECTRAL METHODS
***Philipp Wenig**, Stephan Kelm, Markus Klein*

U 19707 COST-FREE OPTIMIZED SIMULATION AND PHYSICAL EXPERIMENT TRADE-OFF WITH VARIANCE BASED SENSITIVITY ANALYSIS
***Charles Surget**, Sylvain Dubreuil, Jérôme Morio, Cécile Mattrand, Jean-Marc Bourinet, Nicolas Gayton*

U 19843 ABSTENTION IN REGRESSION
***Cristina Garcia-Cardona**, Jamaludin Mohd-Yusof, Tanmoy Bhattacharya*

COMPDYN TS 14 - III
NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS
Monday 17:00 - 19:00
Kallirhoe 1

Chair: *David Connolly*

C 21046 NUMERICAL INVESTIGATION ON STABILITY OF COLUMNS UNDER DYNAMIC LOADS WITH TWO FREQUENCIES
Jian Deng

C 22215 PARAMETRIC ANALYSIS AND REDUCED ORDER MODEL OF RESULTING WIND LOADING ON STRUCTURAL COMPONENTS THROUGH CFD SIMULATIONS
*Olga Markogiannaki, **Sotiria Stefanidou**, Elias Paraskevopoulos*

C 20750 LONG-TERM TIME-HISTORY ANALYSIS FOR SEISMIC PERFORMANCE ASSESSMENT OF AGED REINFORCED CONCRETE STRUCTURES: COMPUTATIONAL CHALLENGES, SOLUTIONS AND APPLICATIONS
*Codi McKee, **Petros Sideris**, Mija Hubler*

C 20753 SEMI-ANALYTICAL CHARACTERIZATION OF A SLOSHING FLUID MASS WITH THE SMOOTHED PARTICLE HYDRODYNAMIC METHOD
***Giorgia Goursand-Parente**, Bonaventura Tagliafierro, Salvatore Capasso, Alejandro Crespo, Giacomo Viccione*

C 20985 INVESTIGATING THE IMPACT OF POROSITY DISTRIBUTION AND GRADING PARAMETER ON THE FREE VIBRATION OF FUNCTIONALLY GRADED BEAMS
***Lazreg Hadji**, Vagelis Plevris, Royal Madan*

C 20448 TEST OF AN IDEA FOR SETTING THE NONLINEARITY TOLERANCE IN NONLINEAR RESPONSE HISTORY ANALYSIS ACCORDING TO THE SEISMIC CODE OF NEW ZEALAND, NZS 1170.5:2004
Aram Soroushian

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

Monday
17:00 - 19:00

Kallirhoe 2

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

C 21116 MACHINE LEARNING-BASED IDENTIFICATION OF VULNERABILITY FACTORS FOR MASONRY BUILDINGS IN AGGREGATE: THE HISTORICAL CENTRE OF CASENTINO HIT BY THE 2009 L'AQUILA EARTHQUAKE
*Silvia Pinasco, Sergio Lagomarsino, Caterina Carocci, Andrea Coraddu, Luca Oneto, **Serena Cattari***

C 20613 DEVELOPING FUNDAMENTAL PERIOD FORMULAE FOR STEEL FRAMED STRUCTURES THROUGH MACHINE LEARNING AND AUTOMATED ALGORITHMS
***Duan Calitz**, George Markou, Nikolaos Bakas, Manolis Papadrakakis*

C 20449 SEISMIC PERFORMANCE EVALUATION OF EXISTING RC FRAME STRUCTURES BASED ON ARTIFICIAL NEURAL NETWORKS
***Tuya Wang**, Huanjun Jiang, Okyay Altay*

C 20261 WHICH SIGNIFICANT DURATION OF GROUND MOTIONS TO USE? INVESTIGATIONS ON ARTIFICIAL NEURAL NETWORKS PREDICTING BUILDING SEISMIC COLLAPSE
***Konstantinos Tsalouchidis**, Christoph Adam*

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

Monday 17:00 - 19:00

Abbey

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

C 20303 DESIGN, TESTING AND MODELLING OF A NOVEL FRICTION DAMPER WITH ENHANCED RESISTANCE TO REPEATED SEISMIC LOADS
***Virginio Quaglini**, Eleonora Bruschi, Carlo Pettorruso, Mauro Sartori*

C 21050 SHEAR DEFICIENT RC BEAMS RETROFITTED WITH INORGANIC MATRIX COMPOSITES
***Dario De Domenico**, Natale Maugeri, Paolo Longo, Matteo Mazzeo, Giuseppe Ricciardi, Antonino Quattrocchi, Roberto Montanini, Luigi Calabrese*

C 20285 VARIABLE ORIFICE DAMPER IMPLEMENTATION FOR SEISMIC SEMI-ACTIVE CONTROL OF CIVIL STRUCTURES
*Andrea Troise, Eleonora Bruschi, **Marco Martino Rosso**, Angelo Alosio, Alessandro Rizzo, Nikos D. Lagaros, Virginio Quaglini, Giuseppe Carlo Marano*

C 20257 EVALUATION OF THE EFFECT OF MASONRY INFILLS ON RESPONSE OF RC BULDINGS EQUIPPED WITH FPS DEVICES: A CASE STUDY
***Diego Gino**, Elena Miceli, Guglielmo Amendola, Luca Giordano, Paolo Castaldo*

C 20294 FULL-SCALE SHAKE TABLE TESTS OF A R.C. BUILDING EQUIPPED WITH AN ACTIVE MASS DAMPER: EXPERIMENTAL RESULTS AND NUMERICAL SIMULATIONS
***Giovanni Rebecchi**, Fabio Menardo, Matteo Rosti, Alberto Bussini, Paolo Martino Calvi*

C 20310 DISPLACEMENT-BASED DESIGN OF HYSTERETIC DAMPERS FOR SEISMIC RETROFIT OF FRAMES
*Eleonora Bruschi, Virginio Quaglini, **Luca Zoccolini***

COMPDYN TS 2 - I
ALGORITHMS FOR STRUCTURAL HEALTH MONITORING

Monday 17:00 - 19:00

Ground

Chair: *Álvaro Cunha*

C 20790 **KEYNOTE:** SEVEN YEARS OF CONTINUOUS DYNAMIC MONITORING OF BAIXO SABOR DAM
*Sérgio Pereira, Filipe Magalhães, Jorge Gomes, **Álvaro Cunha**, José V. Lemos*

C 22019 DYNAMIC IDENTIFICATION OF A HISTORICAL MASONRY BUILDING: THE CASE STUDY OF PALAZZO ROSCIANO
*Raffaele Tarantini, Alessandro Cardoni, **Gian Paolo Cimellaro**, Marco Domaneschi, Enrico Pribaz, Gianluca Rupolo*

C 22675 APPLICATION OF THE WAVELET TRANSFORM INVERSE ANALYSIS FOR MODAL IDENTIFICATION AND DAMAGE DETECTION
***Pierre Argoul**, Michalis Fragiadakis*

C 20149 COMPRESSION AND RECONSTRUCTION OF AUTOCOVARIANCE FUNCTIONS FOR DAMAGE DETECTION AND LOCALIZATION UNDER VARIABLE ENVIRONMENTAL CONDITIONS
Jyrki Kullaa

C 20286 KURTOSIS AND SKEWNESS BASED COMPARISON OF HERMITE POLYNOMIAL AND JOHNSON TRANSFORMATIONS
***Ayşe Su Giz**, Ata Mugan*

C 20317 FEASIBILITY STUDY OF MICROTREMOR SIGNALS FOR STRUCTURAL HEALTH MONITORING ON REAL STEEL STRUCTURES
***Chih-chun Ou**, Jun Iyama*

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

Monday
17:00 - 19:00

Room 1A

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

C 22335 ASSESSMENT AND RETROFIT STUDY OF MASONRY – TIMBER FRAMED BUILDING FOR COMBINED FOUNDATION SETTLEMENT AND SEISMIC LOADING
Constantine Spyrakos

C 20347 EMPIRICAL MULTI-VARIABLE TSUNAMI DAMAGE MODELS BASED ON THE 2011 GREAT EAST JAPAN DATASET: ANALYSIS OF THE PERFORMANCES AT DIFFERENT SPATIAL SCALES
*Mario Di Bacco, **Anna Rita Scorzini**, Anawat Suppasri*

C 20602 DIRECT VISUAL INSPECTION OF IDA RESULTS FOR DERIVATION OF FRAGILITY CURVES BASED ON OPTIMAL INTENSITY MEASURE SELECTION
***Ante Pilipović**, Romano Jevtić Rundek, Mario Uroš, Marta Šavor Novak*

C 21447 IMPULSIVE ACTIONS DUE TO SEISMIC JERK AND DESIGN OF REINFORCEMENTS TO COUNTERACT THEIR EFFECTS IN MASONRY BUILDINGS
*Massimo Mariani, **Francesco Pugi***

C 20604 SCRIPTED POSTPROCESSING OF ABAQUS OUTPUT DATA IN APPLICATION TO SEISMIC ENGINEERING
***Romano Jevtić Rundek**, Ante Pilipović, Mario Uroš, Marija Demšić, Marta Šavor Novak*

C 21134 MULTI SCALE URBAN MODELLING TO IMPROVE THE RECOVERABILITY OF CITIES EXPOSED TO MULTIPLE NATURAL HAZARDS
***Soheil Mohammadi**, Giorgio Boni, Francesca Pirlone, Serena Cattari, Silvia De Angeli*

C 21165 LARGE-SCALE VULNERABILITY ANALYSIS OF HISTORICAL MASONRY BUILDINGS
***Valentina Buonocunto**, Giorgio Serino, Fulvio Parisi*

COMPDYN TS 9 - I
GEOTECHNICAL ENGINEERING

Monday
17:00 - 19:00

Room 1B

Chair: *Amir R. Khoei*

C 21077 SEISMIC SAFETY OF TUNNELS UNDER NEAR-FAULT EARTHQUAKES
Swetha Veeraraghavan

C 20531 INVESTIGATING THE SOIL STRESS LEVELS FOR DIFFERENT PILE GEOMETRIES UNDER DIFFERENT LOADING CONFIGURATIONS
***Daniel Rademan**, George Markou*

C 20074 SENSITIVITY ANALYSIS FOR DERIVATION OF 1D VS PROFILES USING INVERSE QUARTER-WAVELENGTH THEORY
*Mehmet Ozışın, **Zehra Cagnan***

C 20541 FRAGILITY CURVES FOR BRIDGES SUBJECTED TO THREE-DIMENSIONAL SEISMIC ENVIRONMENTS
*Jimena Rosas, **Juan Manuel Mayoral**, Mauricio Anaya*

C 20628 MODELLING OF RIGID INCLUSIONS FOUNDATIONS TO INVESTIGATE THE FAILURE ENVELOPE IN THE V-M-H SPACE
***Ramon Alcala Ochoa**, Zheng Li, Panagiotis Kotronis, Giulio Sciarra*

C 20245 EFFECT OF THE SOIL–PILE–STRUCTURE INTERACTION IN A DYNAMIC ANALYSIS CONSIDERING A LINEAR BEHAVIOR
***Amar Alyaman**, Fernando Lopez Caballero, Daniel Dias, Hussein Mroueh, Marwan Sadek, Eric Antoinet*

C 20609 EVALUATION OF SEISMIC SITE EFFECTS IN A REAL SLOPE THROUGH 2D FE NUMERICAL ANALYSES
***Annamaria di Lernia**, Carmela Buono, Gaetano Elia*

COMPDYN TS 24 - II
SOIL-STRUCTURE INTERACTION

Monday
17:00 - 19:00

Room 2A

Chair: *Masato Saitoh*

C 21350 EFFECT OF SOIL-STRUCTURE INTERACTION FOR LOW-RISE BUILDINGS UNDER GEOTHERMALLY INDUCED EARTHQUAKES
***Aditi Kumawat**, Francesca Taddei, Gerhard Müller*

C 20565 A 2D MACRO-ELEMENT FOR EFFICIENT NONLINEAR ANALYSIS OF PILE FOUNDATIONS UNDER SEISMIC LOADING
***Thomas Lhermitte**, Florent Prunier, David Bertrand, Stéphane Grange, Pierre Wyniecki, Evan Monroig, Thomas Jochyms*

C 20854 CROSS INTERACTION FOR A SMALL GROUP OF THREE SHALLOW FOUNDATIONS
***Enza Zeolla**, Filomena de Silva, Stefania Sica*

C 21219 SCALING AND MODELING OF AN IMPACT PILE DRIVING 1G LABORATORY SCALE TEST
***Tamara Wehbe**, George Anoyatis, Hadrien Rattez, Stijn François*

C 20415 COUPLING OF THE ANALYTICAL SOLUTION FOR THE TIMOSHENKO BEAM WITH A FULLY SATURATED HALFSPACE BY APPLICATION OF THE WAVE BASED METHOD
***Mirjam Lainer**, Gerhard Müller*

UNCECOMP MS 14 - II
GREY-BOX MODELLING FOR UNCERTAINTY QUANTIFICATION
Monday 17:00 - 19:00 — *Room 2B*

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

U 19806 PERFORMING RELIABILITY ANALYSIS ON STOCHASTIC SIMULATORS
***Anderson Pires**, Maliki Moustapha, Stefano Marelli, Bruno Sudret*

U 19851 PHYSICS-DATA HYBRID DRIVEN GE-GDEE FOR HIGH-DIMENSIONAL NONLINEAR DYNAMICAL SYSTEMS
***Yi Luo**, Pol Spanos, Michael Beer, Jianbing Chen*

U 19909 A SELF-LEARNING DIGITAL TWIN FOR PROCESS CONTROL OF FAST PROCESSES UNDER UNCERTAINTY
***Miriam B. Dodt**, Augustin Persoons, Matthias G. R. Faes, David Moens*

UNCECOMP TS 13
SIMULATION OF RANDOM FIELDS

U 19815 AIRCRAFT AS WEATHER SENSORS: ONLINE REFINEMENT OF WEATHER FORECASTS FOR USE IN TACTICAL AIR TRAFFIC CONTROL
***Jan Povala**, Marc Thomas, John Korna, Richard Cannon, Tim Dodwell, Richard Everson, Mark Girolami*

U 19644 MODELING OF SHORT FIBER-REINFORCED COMPOSITES WITH GAUSSIAN AND NON-GAUSSIAN RANDOM FIELDS AND THEIR IMPACT ON THE STATISTICAL PROPERTIES
***Ilona Widera**, Eduard Klatt, Natalie Rauter*

U 19893 MOISTURE TRANSFER IN UNSATURATED SOILS: STOCHASTIC REPRESENTATION OF HETEROGENEITY THROUGH GAUSSIAN RANDOM FIELDS
***Evan Ricketts**, Peter Cleall, Tony Jefferson, Pierre Kerfriden*

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

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

U 19809 BOUNDING LIMITED DATA SETS OF POWER SPECTRAL DENSITY FUNCTIONS FOR UNCERTAINTY QUANTIFICATION
***Marco Behrendt**, Matthias G.R. Faes, Marcos A. Valdebenito, Michael Beer*

U 19855 CERTIFIED INTERVAL MODEL UPDATING USING SCENARIO OPTIMISATION
***Robin Callens**, David Moens, Matthias Faes*

UNCECOMP MS 4
RELIABILITY ANALYSIS AND RARE EVENT SIMULATION

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

U 19681 BAYESIAN POST-PROCESSING OF THE MOVING PARTICLES METHOD FOR RARE EVENT ESTIMATION
***Iason Papaioannou**, Daniel Straub*

U 19535 REALIBILITY ANALYSIS OF CATEGORICAL PERFORMANCE FUNCTIONS VIA ADAPTIVE SEQUENTIAL SAMPLING WITH DETECTION OF FAILURE SURFACES
Miroslav Vořechovský

U 19968 GLOBAL RELIABILITY SENSITIVITY ANALYSIS OF MODELS WITH DEPENDENT INPUTS USING FAILURE SAMPLES
***Max Ehre**, Iason Papaioannou, Daniel Straub*

U 19943 A FAULT-TREE-BASED IMPORTANCE SAMPLING STRATEGY FOR PIECEWISE DETERMINISTIC MARKOV PROCESSES
***Guillaume Chennetier**, Hassane Chraibi, Anne Dutfoy, Josselin Garnier*

COMPDYN TS 15 - II
OPTIMUM DESIGN AND CONTROL

Monday
17:00 - 19:00

Room 3B

Chair: *Spyridon Diamantopoulos*

C 20227 MODAL ANALYSIS OF NON-CONSERVATIVE EULER-BERNOULLI BEAMS COUPLED TO LINEAR VISCOUSLY DAMPED OSCILLATORS
John Bellos

C 20136 CONTROL OF THE STRUCTURAL RESPONSE OF A HIGH-RISE BUILDING UNDER WIND LOAD USING A TUNED MASS DAMPER INERTER (TMDI)
***Daniela Vallejo-Paniagua**, Mariana Castro-Ososrio, Verónica Valencia-Valencia, Luis A. Lara-Valencia, John J. Blandón-Valencia*

C 20336 OPTIMAL PLACEMENT METHOD OF OUTRIGGER WITH BRB IN A CORE WALL SYSTEM STRUCTURE
***Hamid Nikzad**, Shinta Yoshitomi*

C 20135 CONTROL OF STRUCTURES SUBJECTED TO DYNAMIC LOADS USING MAGNETORHEOLOGICAL DAMPERS
***Verónica Valencia-Valencia**, Mariana Castro-Osorio, Daniela Vallejo-Paniagua, Sebastián Echavarría-Montaña, Luis Lara-Valencia*

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

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

Monday
17:00 - 19:00

Room 4A

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

C 21109 THREE-DIMENSIONAL DISCRETE ELEMENT MODELLING OF RUBBLE MASONRY STRUCTURES FROM GEOSPATIAL DATA
***Nicko Kassotakis**, Vasilis Sarhosis, Ajit Pillai, Lars Johanning*

C 20683 IN-PLANE RESPONSE OF A MODULAR RETROFIT SYSTEM FOR URM WALLS USING DEM
***Nicolò Damiani**, Matthew J. DeJong, Luca Albanesi, Guido Magenes, Andrea Penna, Paolo Morandi*

C 20811 NONLINEAR ANALYSIS OF A LARGE RC CANTILEVER GRANDSTAND OF SAN SIRO MEAZZA STADIUM IN MILAN USING THE APPLIED ELEMENT METHOD
***Nicola Scattarreggia**, Martina Cogliano, Gian Michele Calvi, Matteo Moratti*

C 20983 SENSITIVITY ANALYSIS OF DRY-JOINT STONE MASONRY WALLS USING DISCRETE ELEMENT METHOD
***Ciro Canditone**, Fulvio Parisi*

UNCECOMP MS 10
UNCERTAINTY QUANTIFICATION FOR SCIENTIFIC MACHINE LEARNING

Monday
17:00 - 19:00

Room 4B

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

U 19659 THE MORI-ZWANZIG FORMULATION OF DEEP LEARNING
***Daniele Venturi**, Xiantao Li*

U 19825 LEVERAGING LOCAL SCALE DEEP AUTOENCODER-BASED MODELS TO IMPROVE EARLY TIME PREDICTIONS IN GLOBAL ATMOSPHERIC TRANSPORT
***M. Giselle Fernández-Godino**, Wai Tong Chong, Donald D. Lucas*

U 19955 LEARNING TO SIMULATE FLUID FLOW AROUND AIRFOILS USING GRAPH NEURAL NETWORKS
*Nils Bock, **Daigo Maruyama***

U 19961 QUANTIFYING UNCERTAINTIES IN RESIDUAL NEURAL NETWORKS AND NEURAL ODES
***Khachik Sargsyan**, Joshua Hudson, Oscar Diaz-Ibarra, Marta D'Elia, Habib Najm*

U 19989 A CONNECTION BETWEEN PROBABILITY, PHYSICS AND NEURAL NETWORKS
Sascha Ranftl

U 20052 IBUQ: INFORMATION BOTTLENECK BASED UNCERTAINTY QUANTIFICATION FOR NEURAL FUNCTION REGRESSION AND NEURAL OPERATOR LEARNING
Ling Guo

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

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

Tuesday 8:30 - 10:30

Olympia

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

Chair: *Gabriele Milani*

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

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

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

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

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

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

Tuesday 8:30 - 10:30

Attica

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

Chair: *Jean-Marc Bourinet*

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

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

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

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

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

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

UNCECOMP TS 17 - IV
UNCERTAINTY QUANTIFICATION

Tuesday 8:30 - 10:30 | **Templars**

Chair: *George Tsialiamanis*

U 19708 MULTISCALE UNCERTAINTY QUANTIFICATION IN FRICTION INTERFACES FOR STRUCTURAL NONLINEAR DYNAMICS
***Enora Denimal**, Jie Yuan*

U 19873 PREDICTIVE MAINTENANCE DECISION MAKING ON THE BASIS OF REMAINING USEFUL LIFE PROGNOSTICS
***Antonios Kamariotis**, Konstantinos Tatsis, Kai Goebel, Eleni Chatzi, Daniel Straub*

U 19897 EXPERIMENTAL INVESTIGATION OF THE UNCERTAINTY OF DISORDERED FIBER-REINFORCED INJECTION-MOLDED COMPONENTS
***Benedikt Rohrmüller**, Franziska Kneisel, Jörg Hohe, Carla Beckmann*

U 19902 INVESTIGATION OF A VALIDATION APPROACH CONSIDERING UNCERTAINTIES FOR COMPONENTS IN AUTOMOTIVE CRASH SIMULATION MODELS
***Reza Barzanooni**, Michael Pabst, Christian Boegle, Fabian Duddeck*

U 19827 REMAINING SAFE RESIDUAL LIFE ASSESSMENT UNDER LIMITED PRIOR INFORMATION AND HETEROGENEOUS DATA
***Ioannis-Christoforos Koune**, Alice Cicirello*

U 19995 MODEL DISTANCE BASED MULTIVARIATE GLOBAL-LOCAL RESPONSE SENSITIVITY ANALYSIS FOR UNCERTAIN SYSTEMS
*K. Vidhya, **George Greegar***

COMPDYN TS 14 - IV
NUMERICAL SIMULATION METHODS FOR DYNAMIC PROBLEMS

Tuesday 8:30 - 10:30 | **Kallirhoe 1**

Chair: *Jian Deng*

C 21059 THE EVAULATION OF THE OPTIMAL COLLISION CONDITIONS BETWEEN FOLDED PAPER STRUCTURES
Gyehee Lee

C 21439 ZONAL FINITE LINE METHOD FOR THERMAL STRESS AND DYNAMICS RESPONSE ANALYSES OF COMPOSITE STRUCTURES
***Xiao-Wei Gao**, Hua-Yu Li*

C 20765 STRATEGY FOR GLOBAL PARAMETRIC OPTIMIZATION IN NONLINEAR VIBRATION: APPLICATION ON A GANTRY CRANE
***Quentin Ragueneau**, Luc Laurent, Antoine Legay, Thomas Larroque, Romain Crambuer*

C 20808 A DATA-DRIVEN APPROACH USING NEURAL NETWORKS FOR REAL-TIME MODELING AND SIMULATION OF STRUCTURES WITH MANY WELDED POINTS UNDER IMPACT
***Afsal Pulikkathodi**, Elisabeth Lacazedieu, Ludovic Chamoin, Juan-Pedro Berro Ramirez, Laurent Rota, Malek Zarroug*

C 20902 SEISMIC NUMERICAL MODELLING OF ELECTRICAL CABINETS
***Derek Rodriguez**, Simone Peloso, Emanuele Brunesi, Daniele Perrone, Andre Filiatrault*

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

COMPDYN MS 1 - I
NOVEL TECHNIQUES AND APPROACHES FOR SEISMIC PROTECTION OF STRUCTURES WITH ISOLATION AND/OR ENERGY DISSIPATION DEVICES
Tuesday 8:30 - 10:30
Kallirhoe 2

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

C 20665 A NEW APPROACH FOR MODELING AND ANALYZING SELF-CENTERING SYSTEMS
*Ohad Idels, **Oren Lavan***

C 20737 FINITE ELEMENT MODELING OF THE SHAKE-TABLE RESPONSE OF A BRIDGE MODEL COMPRISING ROCKING COLUMNS
*Antonios A. Katsamakas, **Michalis F. Vassiliou***

C 21082 INFLUENCE OF DESIGN PARAMETERS ON THE SEISMIC RELIABILITY OF BASE ISOLATED SYSTEMS
***Fabio Micozzi**, Fabrizio Scozzese, Laura Ragni, Andrea Dall'Asta*

C 21125 SEISMIC RETROFITTING OF PRECAST INDUSTRIAL BUILDINGS THROUGH ENERGY DISSIPATION DEVICES
***Davide Bellotti**, Francesco Cavalieri, Roberto Nascimbene*

C 20852 SEISMIC RETROFIT OF INDUSTRIAL V BRACED STEEL STRUCTURES THROUGH ASYMMETRIC RE-CENTERING DISSIPATIVE DEVICES
*Agnese Natali, **Francesco Morelli***

COMPDYN MS 38 - I
TIMBER-BASED SYSTEMS FOR NEW AND EXISTING STRUCTURES IN SEISMIC AREA: RECENT DEVELOPMENTS AND FUTURE TRENDS
Tuesday 8:30 - 10:30
Abbey

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

C 21039 AN INSIGHT ON THE ROLE OF THE DESIGN PROCEDURES ON DAMAGE TOLERANCE AND COST OF CLT BUILDINGS IN SEISMIC AREAS
***Antonio Sandoli**, Bruno Calderoni, Carla Ceraldi, Giovanni Fabbrocino*

C 21203 THE USE OF STRUCTURAL TIMBER IN EUROPE: AN OVERVIEW ON RECENT DEVELOPMENTS
*Valentina Tomei, **Martina Sciomenta**, Antonio Sandoli*

C 21261 DEVELOPMENT OF A HOLISTIC PARAMETRIC FRAMEWORK FOR MULTI-PERFORMANCE LIFE-CYCLE EVALUATION OF POST-TENSIONED TIMBER BUILDINGS
*Giada Formichetti, **Michele Matteoni**, Stefano Pampanin*

C 20422 TIMBER CARPENTRY WITHOUT STEEL CONNECTORS
***Luigi Massaro**, Roberto Serpieri, Giorgio Frunzio, Luciana Di Gennaro*

C 21248 CYCLIC BEHAVOIR OF AN INNOVATIVE JOINT PROTOTYPE FOR C.L.T. PANELS.
***Antonio Tancredi**, Italo Marchionni, Giuseppe Brando*

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

COMPDYN TS 2 - II
ALGORITHMS FOR STRUCTURAL HEALTH MONITORING

Tuesday
8:30 - 10:30

Ground

Chair: *Álvaro Cunha*

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

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

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

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

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

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

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

DAY 2
TUESDAY 13 JUNE

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

Tuesday 8:30 - 10:30 — *Room 1A*

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

C 20124 SEISMIC VULNERABILITY OF MUSEUMS' COLLECTIONS: A CASE-STUDY
Silvia Lelli, Maria Gatto, Marco Tanganelli, ***Stefania Viti***

C 20338 SAN NICCOLO'S TOWER-GATE, FLORENCE – ITALY: MASONRY CHARCTERISATION AND STRUCTURAL ANALYSIS
Massimo Coli*, Giorgio Lacanna, Paola Vannucchi, Emanuele Marchetti, Marco Tanganelli, Francesco Trovatelli, P. Papeschi, Anna Livia Ciuffreda, Giorgio Caselli, Costanza Stramaccioni*

C 20726 SEISMIC PROTECTION OF CULTURAL HERITAGE BUILDING CONTENTS BY KINEMATIC ISOLATION DEVICES
Gabriele Guerrini, ***Francesco Graziotti****, Maria Rota, Andrea Penna*

C 20507 CONTINUOUS SEISMOMETRIC MONITORING OF THE NATIONAL ARCHAEOLOGICAL MUSEUM "GAIO CILNIO MECENATE" IN AREZZO, ITALY
Riccardo Mario Azzara, Martina Occhipinti, Angelo D'Ambrisi, Marco Tanganelli, Francesco Trovatelli, ***Nicoletta Vettori***

C 21223 STRUCTURE FROM MOTION SURVEY OF STATUE FOR FINITE ELEMENT MODELLING
Maria Aurora Vincenti*, Michele Arturo Caponero, Miriam Lamonaca, Giuseppe Occhipinti, Omar AlShawa, Luigi Sorrentino*

COMPDYN TS 9 - II
GEOTECHNICAL ENGINEERING

Tuesday 8:30 - 10:30 — *Room 1B*

Chair: *Swetha Veeraraghavan*

C 21137 **KEYNOTE:** MULTISCALE MODELING OF COUPLED THERMO-HYDRO-MECHANICAL ANALYSIS OF HETEROGENEOUS POROUS MEDIA WITH MICRO-DYNAMIC EFFECTS
Amir R. Khoei*, Saeed Saeedmonir*

C 21265 PRELIMINARY STUDY FOR SEISMIC ASSESSMENT OF THE UNDERGROUND FACILITIES AT POINT 5 OF THE LARGE HADRON COLLIDER (LHC) AT CERN
Ugo Carmando*, Ahmed Mubarak, Antonio Bilotta, Emilio Bilotta, Jonathan Knappett, Saverio La Mendola, Martin Gastal, Pieter Mattelaer, Luca Sironi, Davide Merlini, Matteo Falanesca, Gianluca Bella, Filippo Gianelli, Marco Andreini*

C 20857 FRAGILITY CURVES FOR A SMALL ZONED EARTH DAM
Mariagrazia Tretola*, Stefania Sica*

C 20859 EFFECT OF SOIL-STRUCTURE INTERACTION ON THE DYNAMIC IDENTIFICATION OF A PRESTRESSED CONCRETE BRIDGE
Antonella Ambrosino*, Alessandra De Angelis, Maria Rosaria Pecce, Stefania Sica*

C 21246 MODEL CALIBRATION AND NONLINEAR SITE RESPONSE ANALYSIS FOR MEDIUM COMPACTED SATURATED VOLCANIC SAND
Seyed Javad Fattahi*, Yaser Jafarian, Maria Konstadinou, Elin asta Olafsdottir, Sigurdur Erlingsson, Bjarni Bessason, Rajesh Rupakhety*

C 21054 SHEAR RATE EFFECT ON GRAIN CRUSHING OF SANDS. A LABORATORY STUDY BY THE BROOMHEAD APPARATUS
***Petros Sidiropoulos**, Constantinos A. Stamatopoulos, Vassilis P. Panoskaltsis*

COMPDYN TS 13 - I NONLINEAR DYNAMICS — Tuesday 8:30 - 10:30 — Room 2A

Chair: *Terje Haukaas*

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

C 20376 QUANTIFYING UNCERTAINTIES IN NONLINEAR DYNAMICAL SYSTEMS WITH THE FOURIER GENERALIZED POLYNOMIAL CHAOS METHOD
***Lars Menzel**, Ulrich Römer, Michael Müller*

C 21377 INVESTIGATION OF THE SEISMIC BEHAVIOR OF BUILDINGS WITH U-BOOT SLABS
*Denise-Penelope N. Kontoni, **Ali Ghamari**, Mojtaba Noorollahi*

C 21370 THE SEISMIC RESPONSE OF MIXED REINFORCED CONCRETE–STEEL LOW-RISE BUILDINGS UNDER NEAR-FAULT EARTHQUAKES
***Paraskevi K. Askouni**, George A. Papagiannopoulos*

C 20836 EQUAL DISPLACEMENT CONCEPT FOR INELASTIC ANALYSIS OF STRUCTURES
Johnn Judd

UNCECOMP MS 20 VVUQ FOR COMPLEX MULTIPHYSICS PROBLEMS — Tuesday 8:30 - 10:30 — Room 2B

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

U 19711 CHALLENGES ESTIMATING THE ACCURACY OF SCALE RESOLVING SIMULATIONS OF TURBULENCE: CONSTANT VS. VARIABLE PHYSICAL RESOLUTION
***Filipe Pereira**, Brandon Wilson, Aaron Koskelo, Luis Eca*

U 19904 VERIFICATION METHODS FOR PLANAR SHOCK REFLECTIONS OVER WEDGES
***Allyson Leffler**, Jim Ferguson, Jasper Thrussell, Steven Anderson*

U 19852 SENSITIVITY ANALYSIS FOR EFFECTIVE CONDUCTIVITY OF ANISOTROPIC FIBROUS MATERIALS
***Kunkun Tang**, Francesco Panerai, Jonathan Freund*

U 19842 TRANSITION AND MULTIPHYSICS IN 3D ICF CAPSULE IMPLOSIONS
***Fernando Grinstein**, Vincent Chiravalle, Brian Haines, Filipe Pereira, Robert Greene*

U 19928 MODEL SELECTION OF REDUCED KINETICS MODELS FOR LARGE-SCALE TURBULENT COMBUSTION SIMULATION
***Kunkun Tang**, Tulio Ricciardi, Jonathan Freund*

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

U 19959 TURBULENT RANKINE-HUGONIOT RELATIONS
***Jesse Canfield**, Len Margolin, Filipe Soares-Pereira, Kendra Van Buren*

COMPDYN MS 22 - I
HYSTERESIS PHENOMENA IN STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING: EXPERIMENTS, MODELING, AND DESIGN
Tuesday 8:30 - 10:30
Room 3A

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

C 20862 **KEYNOTE:** MITIGATION OF STRUCTURE VIBRATIONS BY ADDING A HYSTERETIC ELEMENT
***Fabrizio Vestroni**, Paolo Casini*

C 21084 NONLINEAR DYNAMIC ANALYSIS OF RIGID BODIES SUPPORTED BY RATE-INDEPENDENT HYSTERETIC ELEMENTS
***Nicolò Vaiana**, Luciano Rosati*

C 21081 WORK AND ENERGY COMPONENTS IN MECHANICAL SYSTEMS WITH COMPLEX HYSTERETIC BEHAVIOR
***Raffaele Capuano**, Nicolò Vaiana, Luciano Rosati*

C 21042 SIMPLIFIED-MICRO MODELLING OF UNREINFORCED AND JOINT REPOINTED BRICK MASONRY
***Maja Gosheva**, Sergey Churilov, Elena Dumova-Jovanoska, Veronika Shendova, Lidija Krstevska*

C 20958 ON THE RESPONSE OF SDOF RATE-INDEPENDENT HYSTERETIC MECHANICAL SYSTEMS SUBJECTED TO SHOCK EXCITATION
***Diego Francisco Ledezma-Ramirez**, Pablo Ernesto Tapia-Gonzalez, Nicolò Vaiana*

COMPDYN MS 35
RECENT ADVANCES IN GROUND- AND STRUCTURE-BORNE NOISE AND VIBRATION ASSESSMENT & PREDICTION
Tuesday 8:30 - 10:30
Room 3B

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

C 20952 RAPID NOISE & VIBRATION PREDICTION BASED ON GENERIC TRANSFER FUNCTIONS FOR REGULAR BUILDINGS
***Lukas Moschen**, Nadia Gremer*

C 20898 LOW-COST RESPONSE MODIFICATION STRATEGIES: LARGE SCALE SHAKING TABLE TESTS AND CHALLENGES OF IMPLEMENTATION
***Anastasios Tsiavos**, Anastasios Sextos*

C MITIGATION OF TRAIN-INDUCED BUILDING VIBRATIONS BY OPTIMIZING THE PILE GROUP CONFIGURATION
Nikolaos Lesgidis, Thomas Jaquet, Lukas Moschen, ***Anastasios Sextos***

C 20252 CONCRETING UNDER TRAFFIC: IN-DEPTH INVESTIGATION OF THE EFFECTS OF VIBRATIONS ON YOUNG CONCRETE
***Christian Gasser**, Soufiane El-Yassini, Alfred Lechner, Lukas Hausner, Alois Vorwagner*

C 20809 EFFECT OF THE LENGTH OF SEISMIC METASURFACES ON VIBRATION MITIGATION PERFORMANCE
***David Carneiro**, Pieter Reumers, Geert Lombaert, Geert Degrande*

C 20818 INFLUENCE OF DYNAMIC AND GEOMETRICAL PROPERTIES OF SEISMIC METASURFACES ON VIBRATION MITIGATION
***Zohre Kabirian**, Pieter Reumers, Geert Lombaert, Geert Degrande*

C 21520 DYNAMIC ANALYSIS OF RAILWAY BRIDGES CONSIDERING THE NONLINEAR AMPLITUDE-DEPENDENT SYSTEM BEHAVIOUR - SIMULATION AND IN-SITU TESTS
***Michael Reiterer**, Andrei Firus*

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

Tuesday 8:30 - 10:30 — *Room 4A*

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

U 20022 STATISTICAL HOMOGENIZATION PROCEDURE FOR ESTIMATION OF MECHANICAL PROPERTIES OF CERAMIC MATRIX COMPOSITES (CMC) CONSIDERING GRANULOMETRIC DISTRIBUTIONS OF PHASES
***Marco Pingaro**, Maria Laura De Bellis, Emanuele Reccia, Patrizia Trovalusci, Tomasz Sadowski*

U 20065 COMPUTATION OF THE SPATIALLY VARYING MECHANICAL PROPERTIES OF GRAPHENE NANOPLATELETS WITH RANDOM STRUCTURAL DEFECTS
*Panagiotis Gavallas, Dimitrios Savvas, **George Stefanou***

U 19777 STOCHASTIC HOMOGENIZATION ANALYSIS OF A MICROSCOPICALLY HETEROGENEOUS RESIN STRUCTURE FABRICATED BY FDM METHOD WITH THREE-DIMENSIONAL RANDOM FIELD MODELING OF MICROSTRUCTURE
***Sei-ichiro Sakata**, Takayoshi Kikkawa, Yuki Aikawa*

U 19571 VIRTUAL MODELLING AIDED PHASE FIELD METHOD FOR DYNAMIC FRACTURE MECHANICS
***Yiyang Liu**, Yuan Feng, Di Wu, Wei Gao*

U 19947 INFLUENCE OF RANDOM SINGLE-CRYSTAL ELASTICITY TENSOR AND SPATIALLY CORRELATED CRYSTALLOGRAPHIC ORIENTATIONS ON THE ULTRASONIC SCATTERING IN CUBIC POLYCRYSTALS
***Ningyue Sheng**, Shahram Khazaie, Mathilde Chevreuil, Sylvain Fréour*

U 19967 STUDY ON RANDOM FIELD MODELING FOR STRENGTH ESTIMATION OF FIBER REINFORCED COMPOSITES BY PERIDYNAMICS CONSIDERING MICROSCOPIC IN-SITU MEASUREMENT
***Yuki Arai**, Sei-ichiro Sakata*

COMPDYN TS 28
STOCHASTIC DYNAMICS

Tuesday
8:30 - 10:30

Room 4B

Chair: *Ambrosios-Antonios Savvides*

C 20926 A NEURAL NETWORK PERSPECTIVE FOR THE PREDICTION OF FAILURE STRESS-STRAIN FIELD AT THE ULTIMATE LOAD OF FOOTING SETTLEMENTS OF CLAYEY SOILS
***Ambrosios-Antonios Savvides**, Leonidas Papadopoulos*

C 22282 ANALYSIS OF RANDOMLY EXCITED ROCKING STRUCTURES USING THE STOCHASTIC LINERIZATION METHOD
***Spyridon Diamantopoulos**, Hera Yanni, Ioannis Mitseas, Michalis Fragiadakis*

C 20924 THE EFFECT OF A DOUBLE ECCENTRIC LOADED FOOTING SETTLEMENT ON FAILURE ON CLAYEY SOILS: AN UNCERTAINTY QUANTIFICATION ESTIMATION WITH THE MODIFIED CAM CLAY YIELD FUNCTION
***Ambrosios-Antonios Savvides**, Manolis Papadrakakis*

C 20479 PARAMETER ESTIMATION OF NONLINEAR AEROELASTIC SYSTEMS USING BAYESIAN MODEL UPDATING AND ADVANCED KRIGING SURROGATE MODEL
***Michael McGurk**, Jie Yuan*

C 22279 STOCHASTIC GENERATION OF ARTIFICIAL ACCELEROGRAMS USING THE CONTINUOUS WAVELET TRANSFORM METHOD
***Hera Yanni**, Michalis Fragiadakis, Ioannis P. Mitseas*

C 21296 ESTIMATION OF THE SEISMIC RESPONSE OF BUILDINGS THROUGH TRANSFER FUNCTIONS. A PROBABILISTIC APPROACH
***Rodolfo Javier Tirado Gutiérrez**, Yeudy Felipe Vargas Alzate, Ramón González Drigo, Ana Maria Zapata Franco*

C 20923 THE OBLIQUE LOADED FOOTING SETTLEMENT FAILURE ON COHESIVE GEOMATERIALS: A STOCHASTIC INVESTIGATION USING THE MODIFIED CAM CLAY YIELD MODEL
***Ambrosios-Antonios Savvides**, Manolis Papadrakakis*

10:30-11:00
Coffee Break

COMPDYN
SEMI-PLENARY LECTURES

Tuesday
11:00 - 13:00

Olympia

Chair: *Jamie E. Padgett*

C 21493 ROBUST MONITORING FOR ENGINEERED SYSTEMS: TOWARD AUGMENTED TWINS
Eleni Chatzi

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

C 21489 APPLICATIONS OF SUBDOMAIN COUPLING METHODS TO NONSMOOTH TRANSIENT STRUCTURAL DYNAMICS AND WAVE PROPAGATION PROBLEMS
Michael Brun

COMPDYN
SEMI-PLENARY LECTURES

Tuesday
11:00 - 13:00

Attica

Chair: *Jack Baker*

C 22199 SEMI-ANALYTICAL METHODS FOR THE SIMULATION OF ELASTIC WAVES
Hauke Gravenkamp

C 21494 ISOGEOMETRIC ANALYSIS: ADVANCES AND APPLICATIONS WITH A SPECIAL FOCUS ON DYNAMIC PROBLEMS
Alessandro Reali

C 21490 INVESTIGATING THE CAPABILITIES OF FLEXIBLE JOINTS FOR ENHANCING THE PERFORMANCE OF MASONRY INFILLED FRAMES
Enrico Tubaldi

UNCECOMP
SEMI-PLENARY LECTURES

Tuesday
11:00 - 13:00

Templars

Chair: *Sondipon Adhikari*

U 20088 FROM STOCHASTIC NONLINEAR CONSTITUTIVE MODELS ON COMPLEX GEOMETRIES TO MODEL-FORM UNCERTAINTIES IN ATOMISTIC COMPUTATIONS: A TOUR OF STOCHASTIC MODELING ON CONSTRAINED SPACES
Johann Guilleminot

U 19549 DEVELOPMENT OF HISTORY-DEPENDENT SURROGATE MODELS IN THE CONTEXT OF STOCHASTIC MULTI-SCALE SIMULATIONS FOR ELASTO-PLASTIC COMPOSITES
Juan Manuel Calleja Vázquez, Van-Dung Nguyen, Ling Wu, ***Ludovic Noels***

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

DAY 2

TUESDAY 13 JUNE

UNCECOMP
SEMI-PLENARY LECTURES

Tuesday 11:00 - 13:00

Kallirhoe 1

Chair: *Haim Waisman*

U 20530 SURROGATE MODELLING FOR STOCHASTIC SIMULATORS
Bruno Sudret

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

U 20554 DECISION-ORIENTED SENSITIVITY ANALYSIS
Daniel Straub

SPECIAL TECHNOLOGICAL SESSION LECTURES

Tuesday 11:00 - 13:00

Kallirhoe 2

Chair: *Michalis Fragiadakis*

C 20941 SIMCENTER TOOLS FOR COMPUTATIONAL DYNAMICS, UNCERTAINTY QUANTIFICATION, AND REGIONAL-SCALE EARTHQUAKE HAZARD SIMULATION
Gregory G. Deierlein, Frank McKenna, Adam Zsarnóczay, Laura Lowes, Matthew J. Schoettler, Sanjay Govindjee, ***Matthew DeJong***

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

U 20555 DATA DRIVEN COMPUTATIONAL MECHANICS PROBLEMS AT EXASCALE
Vissarion Papadopoulos

13:00-14:00
Lunch Break

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

Tuesday 14:00 - 16:00 — **Olympia**

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

Chair: *Francesco Clementi*

C 20161 KEYNOTE: FINITE ELEMENT ANALYSIS OF HIGH-DAMPING UNBONDED FIBER REINFORCED ELASTOMERIC ISOLATORS (UFREIS) OF DIFFERENT SHAPE FACTORS
*Gaetano Pianese, **Gabriele Milani**, Antonio Formisano*

C 21031 A TYPOLOGICAL-MECHANICAL APPROACH TO ASSESS LARGE-SCALE SEISMIC FRAGILITY OF MASONRY BUILDINGS IN HISTORICAL CENTRES
*Chiara Tosto, Valeria Leggieri, Sergio Ruggieri, **Giuseppina Uva***

C 21343 COMPARISON OF THE RECORDED SEISMIC SIGNALS FOR THE 2012 EMILIA AND 2016 CENTRAL ITALY SEISMIC SEQUENCES WITH THE DESIGN EARTHQUAKES BASED ON THE PSHA APPROACH
*Maurizio Acito, **Martina Buzzetti**, Claudio Chesi, Gabriele Milani*

C 21369 SEISMIC RESPONSE OF DIFFERENT MASONRY BUILDING AGGREGATE CONFIGURATIONS BY A REFINED FE MICROMODEL
***Marilisa Di Benedetto**, Fabio Di Trapani, Sofia Villar, Massimo Petracca, Guido Camata*

C 21423 INVESTIGATING THE SEISMIC RESPONSE OF URM WALLS WITH IRREGULAR OPENING LAYOUT THROUGH DIFFERENT MODELING APPROACHES
***Francesco Parisse**, Valentina Buonocunto, Cristina Cantagallo, Alice Di Primio, Enrico Di Domenico, Nicolò Lo Presti, Elia Acconcia, Francesco Cannizzaro, Giovanni Castellazzi, Antonio Maria D'Altri, Sandro Liseni, Carlo Filippo Manzini, Rui Marques, Giuse*

C 20956 SEISMIC VULNERABILITY ANALYSIS OF S. SEBASTIANO CHURCH DAMAGED DURING THE 2016 CENTRAL ITALY SEISMIC SEQUENCE
***Michol Rampado**, Elvis Cescatti, Francesco Rossetto, Francesca da Porto, Claudio Modena*

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

Tuesday 14:00 - 16:00 — **Attica**

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

Chair: *Michael Shields*

U 19858 LOCALIZED APPROXIMATIONS BY POLYNOMIAL CHAOS EXPANSIONS FOR HIGHLY NON-LINEAR FUNCTIONS
***Lukáš Novák**, Michael Shields, Václav Sadílek, Miroslav Vořechovský*

U 19971 GAUSSIAN-PROCESS BASED GLOBAL SENSITIVITY ANALYSIS FOR COMPLEX MODELS OF ACTIVE BIOMECHANICAL SYSTEMS
***Sebastian Brandstaeter**, Barbara Wirthl, Jonas Nitzler, Wolfgang A. Wall*

U 19983 OTICSCREAM: A PYTHON MODULE FOR STATISTICAL IDENTIFICATION OF PENALIZING CONFIGURATIONS IN COMPUTER EXPERIMENTS
***Vincent Chabridon**, Bertrand Iooss, Amandine Marrel*

U 19619 ENHANCED UNIVERSAL KRIGING FOR TRANSFORMED INPUT PARAMETER SPACES
***Matthias Fischer**, Carsten Proppe*

U 20319 TOWARDS RELIABLE AUTOMATED DRIVING SYSTEMS: SURROGATE MODELING USING SPARSE GRIDS AND GAUSSIAN PROCESSES
***Naya Baslan**, Julian Schmidt, Alexander Kerschl, Dirk Pflüger*

U 19726 BAYESIAN OPTIMIZATION IN HIGH-DIMENSION VIA A COMBINATION OF KRIGING SUB-MODELS
***Tanguy Appriou**, Didier Rullière, David Gaudrie*

UNCECOMP TS 17 - V
UNCERTAINTY QUANTIFICATION

Tuesday
14:00 - 16:00

Templars

Chair: *Enora Denimal*

U 19790 COMPARING ADAPTIVE SAMPLING ALGORITHMS ON PROBABILISTIC EVALUATIONS OF RARE SCENARIOS
***Jan Soedingrekso**, Tanja Eraerds, Martina Kloos, Jörg Peschke, Josef Scheuer*

U 19940 QUANTIFYING UNCERTAINTY OF PHYSICS-INFORMED NEURAL NETWORKS FOR CONTINUUM MECHANICS APPLICATIONS
***Damien Bonnet-Eymard**, Augustin Persoons, Matthias Faes, David Moens*

U 19949 SPECTRAL DENSITY ESTIMATION OF STOCHASTIC PROCESSES UNDER MISSING DATA AND UNCERTAINTY QUANTIFICATION WITH BAYESIAN DEEP LEARNING
***Yu Chen**, Edoardo Patelli, Benjamin Edwards, Michael Beer*

U 19964 MECHANICAL CHARACTERIZATION OF POLYPROPYLENE COMPOSITES REINFORCED WITH ARGAN NUT SHELL PARTICLES
***Oumaima Belcadi**, Nicolas Desilles, Christophe Gautrelet, Fatima Ezzahra Arrakhiz, Leila Khalij, Emmanuel Pagnacco, Hassan El Minor*

U 19978 BAYESIAN UNCERTAINTY QUANTIFICATION FOR TRANSIENT HEAT CONDUCTION PROBLEMS WITH TEMPERATURE-DEPENDENT CONDUCTIVITY
***Rodrigo L. S. Silva**, Clemens Verhoosel, Erik Quaeghebeur*

U 19997 COMPARISON OF DATA DRIVEN SYSTEM IDENTIFICATION TECHNIQUES FOR DIFFERENT NON-LINEAR DYNAMICAL SYSTEMS
***Pushpa Pandey**, Hamed Haddad Khodaparast, Michael Ian Friswell, Tanmoy Chatterjee, Tom Deighan*

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

Tuesday 14:00 - 16:00 — **Kallirhoe 1**

MS Organizers: *Dan Givoli, Haim Waisman*
Chair: *Dan Givoli, Haim Waisman*

C 20803 TOPOLOGY OPTIMIZATION OF STRUCTURES WITH ENHANCED FRACTURE AND BUCKLING RESISTANCE
Jonathan Russ, ***Haim Waisman***

C 20863 AN INVERSION PROCEDURE FOR FULLY CHARACTERIZING ELASTIC SCATTERERS FROM ITS FFP MEASUREMENTS
Izar Azpiroz, Helene Barucq, Julien Diaz, ***Rabia Djellouli***

C 20632 STRUCTURAL DEFORMATION RECONSTRUCTION USING THE HYBRID SHELL-BEAM INVERSE FINITE ELEMENT METHOD: THEORY & NUMERICAL RESULTS
Rinto Roy, Marco Esposito, ***Marco Gherlone****, Cecilia Surace*

C 20653 STRUCTURAL DEFORMATION RECONSTRUCTION USING THE HYBRID SHELL-BEAM INVERSE FINITE ELEMENT METHOD: EXPERIMENTAL APPLICATION ON A THIN-WALLED STIFFENED PANEL
Marco Esposito*, Rinto Roy, Marco Gherlone, Cecilia Surace*

C 20548 FULL-WAVEFORM INVERSION OF SEISMIC INPUT MOTIONS AT A DOMAIN REDUCTION METHOD BOUNDARY IN A PML-TRUNCATED DOMAIN
Bruno Guidio, ***Chanseok Jeong***

C 20607 DAMAGE DETECTION VIA ENRICHED SPECTRAL ELEMENT SIMULATION; A COMPARISON OF INVERSE SOLVERS
Paul Sieber*, Sergio Nicoli, Konstantinos Agathos, Pawel Kudela, Wieslaw Ostachowicz, Eleni Chatzi*

C 20494 INVERSE IDENTIFICATION OF CABLE FORCES USING ITS MODAL BEHAVIOR BY DIRECT AND NON-CONTACT VIBRATION MEASUREMENTS
Max Johannes Alois Fritzsche*, Maximilian Michael Rupp, Steven R. Lorenzen, Lucia Hofmann, Lia Birmele, Jens Schneider*

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

Tuesday 14:00 - 16:00 — **Kallirhoe 2**

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

C 21026 **KEYNOTE:** RETROFITTING OF EXISTING BUILDINGS USING FRICTION DAMPERS ACCORDING TO THE NEW EUROCODE 8
Andreas Kappos*, Abdullah Chaar*

C 20714 NUMERICAL MODELLING OF MASONRY-INFILLED RC FRAMES WITH RUBBER JOINTS
Prateek Kumar Dhir*, Enrico Tubaldi, Hamid Ahmadi, Bartolomeo Panto*

C 20472 SEISMIC PROTECTION OF SUBSTANDARD RC FRAMES THROUGH SELF-CENTERING DISSIPATIVE BRACES
Dario De Domenico, Luca Facconi, ***Emanuele Gandelli****, Alberto Gioitta, Paolo Longo, Natale Maugeri*

C 20677 FINITE ELEMENT MODELING OF THE ROLLING BEHAVIOR OF A POLYURETHANE SPHERE FOR LOW-COST SEISMIC ISOLATION APPLICATIONS
***Sergio Reyes**, Michalis Vassiliou, Konstantinos Agathos, Dimitrios Konstantinidis*

C 21189 A GLANCE AT OPTIMAL CONFIGURATIONS OF LARGE MASS TUNED MASS DAMPERS IN SOIL-STRUCTURE SYSTEMS
***Pasquale Roberto Marrazzo**, Davide Noè Gorini, Elide Nastri, Rosario Montuori*

COMPDYN MS 38 - II
TIMBER-BASED SYSTEMS FOR NEW AND EXISTING STRUCTURES IN SEISMIC AREA: RECENT DEVELOPMENTS AND FUTURE TRENDS
Tuesday 14:00 - 16:00
Abbey

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

C 21172 A PARAMETRIC STUDY ON THE CYCLIC RESPONSE OF POST-TENSIONED LOW DAMAGE TIMBER WALLS WITH DISSIPATIVE DEVICES
***Valentina Tomei**, Maria Zucconi, H. Monsef, Barbara Ferracuti*

C 20840 EXPERIMENTAL AND NUMERICAL RESPONSE ASSESSMENT OF BALLOON-STYLE CROSS LAMINATED TIMBER BUILDINGS IN THE US
***Maria Koliou**, John van de Lindt, Benjamin Hayes, Pouria Bahmani, Milad Roohi*

C 20480 EXPERIMENTAL AND NUMERICAL ASSESSMENT OF AN IMPROVED PLYWOOD-BASED IN-PLANE RETROFITTING METHOD FOR TIMBER FLOORS IN HIGHLY SEISMIC AREAS
***Michele Mirra**, Andrea Gerardini*

C 20758 LIGHT TIMBER FRAME WALLS WITH CLADDING– NUMERICAL INVESTIGATION OF THE SEISMIC PERFORMANCE OF A MULTI-STORY BUILDING BASED ON TEST RESULTS
*Lukas Rauber, Cristian Vulcu, Vera Wilden, **Georgios Balaskas**, Benno Hoffmeister*

C 21093 SEISMIC FRAGILITY ANALYSIS TO ASSESS THE IMPACT OF TIMBER VERTICAL ADDITIONS ON EXISTING RC BUILDINGS: A CASE STUDY
***Andrea Bartolotti**, Michele Sartori, Ivan Giongo*

UNCECOMP MS 3 - I
BAYESIAN COMPUTATION METHODS FOR INFERENCE IN SCIENCE AND ENGINEERING
Tuesday 14:00 - 16:00
Ground

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

U 19586 BAYESIAN INFERENCE OF VISCO-ELASTIC VISCO-PLASTIC MATERIAL MODEL PARAMETERS FOR SLS-PRINTED POLYAMIDE LATTICES
***Ling Wu**, Cyrielle Anglade, Lucia Cobian, Miguel A Monclus, Anna Hössinger-Kalteis, Zoltan Major, Fatma Karayagiz, Thomas Lück, Ludovic Noels*

U 19800 A GRADIENT-FREE ROBUST OPTIMAL SENSOR PLACEMENT FOR THE ESTIMATION OF MODEL PARAMETERS WITH APPLICATION TO A COMPUTATIONAL FLUID DYNAMICS PROBLEM
Grégory Dergham

U 19722 AN IMPORTANCE SAMPLING APPROACH TO EFFICIENT GRADIENT-BASED DIMENSION REDUCTION IN STOCHASTIC SYSTEMS
***Joanna Zou**, Dallas Foster, Youssef Marzouk*

U 19724 BAYESIAN UNCERTAINTY QUANTIFICATION FOR THE SQUEEZE FLOW OF SOFT MATTER
***Aricia Rinkens**, Clemens Verhoosel, Nick Jaensson*

U 19770 BAYESIAN UPDATING OF GLOBAL RESPONSE SENSITIVITY INDICES IN AN INSTRUMENTED STRUCTURE
***Bibhas Paul**, A. S. Nisha, C. S. Manohar*

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

Tuesday 14:00 - 16:00 — *Room 1A*

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

C 20601 ROCKING RESPONSE AND VULNERABILITY OF THE PULPIT BY GIOVANNI PISANO IN PISTOIA (ITALY)
*Gianni Bartoli, Michele Betti, **Luca Facchini**, Silvia Monchetti*

C 20313 ARBITRARY LAGRANGIAN EULERIAN ANALYSIS OF THE NEPTUNE FOUNTAIN IN FLORENCE SUBJECTED TO BLAST LOADS
*Piermatteo Cicolini, Marco Domaneschi, **Marco Tanganelli***

C 20820 THE STUDY OF DONATELLO'S SCULPTURE OF SAN MARCO IN ORSANMICHELE (FLORENCE), THROUGH A THREE-DIMENSIONAL DIGITAL RECONSTRUCTION IN VISIBLE AND UV LIGHT
***Michelangelo Micheloni**, Anna Livia Ciuffreda, Gabriela Simoni, Mattia Faiulo*

C 20706 HUMAN-INDUCED VIBRATIONS ON MUSEUM ARTEFACTS: LITERATURE REVIEW AND CALCULATION EXAMPLE
***Elena Sara Saeed**, Linda Giresini, Olimpia Niglio, Francesco Graziotti*

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

Tuesday 14:00 - 16:00 — *Room 1B*

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

C 21278 FRAGILITY CURVES ASSESSMENT OF AN EXISTING TYPOLOGICAL RC BUILDING SUBJECTED TO THE COMBINED ACTION OF SLOW-MOVING SETTLEMENTS AND EARTHQUAKE
***Andrea Miano**, Annalisa Mele, Carlo Del Gaudio, Gerardo Mario Verderame, Andrea Prota*

C 21356 A METHODOLOGY FOR THE EVALUATION OF MORPHOLOGY-BASED CONSTITUTIVE LAWS OF CORRODED STEEL REBARS
*Fabio Di Carlo, **Diego Alejandro Talledo**, Luisa Berto, Paolo Isabella, Alberto Meda, Zila Rinaldi, Irene Rocca, Anna Saetta*

C 21307 ESTIMATION OF THE COMBINED SEISMIC-FIRE RISK: A CRITICAL REVIEW AND FUTURE RESEARCH AGENDA
***Donatella de Silva**, Andrea Miano, Andrea Prota, Emidio Nigro*

C 21245 URBAN SETTLEMENTS MONITORING USING EGMS DATA THROUGH ADAFINDER TOOL
***Annalisa Mele**, Michele Crosetto, Andrea Miano, Andrea Prota*

C 21239 DAMAGE EVALUATION IN MASONRY INFILLED RC BUILDINGS FROM SHM DATA
*Alessandro Lubrano Lobianco, **Marta Del Zoppo**, Marco Di Ludovico*

C 20639 TYPOLOGICAL SEISMIC LOSSES ASSESSMENT BY DAMAGED MASONRY BUILDINGS AFTER L'AQUILA 2009 AND EMILIA 2012 EARTHQUAKES
***Matteo Tatangelo**, Lorenzo Audisio, Michele D'Amato, Rosario Gigliotti*

COMPDYN TS 13 - II
NONLINEAR DYNAMICS

Tuesday
14:00 - 16:00

Room 2A

Chair: *Carlo Pettorruso*

C 21000 STEADY-STATE RESPONSE OF A HIGH-STRENGTH MOMENT-RESISTING STEEL FRAME-SELF-CENTERING STEEL PLATE SHEAR WALL SYSTEM
***Chuandong Xie**, Xiantie Wang, George Vasdravellis*

C 20776 GROUND MOTION PROCESSING IN ROCKING STRUCTURES
***Medhat Elmorsy**, Michalis F. Vassiliou*

COMPDYN TS 3 - I
BRIDGE DYNAMICS

C 20183 ASSESSMENT OF THE SEISMIC VULNERABILITY AND MODELLING OF EXISTING BRIDGE WITH DIFFERENT LEVELS OF ACCURACY: STRENGTHS AND WEAKNESSES
***Carlo Pettorruso**, Virginio Quaglini*

C 21132 AN INTERFACE FOR CHECKING DYNAMIC COMPATIBILITY OF ROLLING STOCK WITH EXISTING RAILWAY BRIDGES
*Muriel Ragueneau, **Huyen Nguyen**, Vincent Mathouraparsad*

C 21234 DYNAMIC AMPLIFICATION OF TRAFFIC LOADS ON ROAD BRIDGES EVALUATED USING PROBABILISTIC TRAFFIC SIMULATIONS
*Marian Ralbovsky, Maciej Kwapisz, Alois Vorwagner, **Stefan Lachinger***

C 20736 STOCHASTIC MODEL UPDATING OF A RC TIED-ARCH BRIDGE
***Andrea Gennaro**, Amedeo Caprino, Valentina Pernechele, Filippo Lorenzoni, Francesca da Porto*

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

Tuesday 14:00 - 16:00 — *Room 3A*

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

C 20626 CLASSIFICATION AND PHENOMENOLOGICAL MODELING OF HYSTERESIS PHENOMENA IN ENERGY DISSIPATION DEVICES
***Ciro Napolitano**, Nicolò Vaiana, Luciano Rosati*

C 21131 SIMULATION OF THE HYSTERETIC BEHAVIOR OF TIMBER CONNECTIONS BY THE VAIANA-ROSATI MODEL: PRELIMINARY RESULTS
***Agnese Spedicato**, Nicolò Vaiana, Luciano Rosati*

COMPDYN TS 11
INVERSE PROBLEMS IN STRUCTURAL DYNAMICS

C 20669 OPTIMISED STRUCTURAL MODELLING FOR INVERSE ANALYSIS PARAMETER IDENTIFICATION RELYING ON DYNAMIC MEASUREMENTS
***Aram Cornaggia**, Tomasz Garbowski, Giuseppe Cocchetti, Rosalba Ferrari, Egidio Rizzi*

C 20156 A NEW PHYSICS-GUIDED DATA ASSIMILATION FRAMEWORK FOR ONLINE STRUCTURAL MONITORING: APPLICATION TO SHAKING-TABLE TESTS
***Matthieu Diaz**, Pierre-Etienne Charbonnel, Ludovic Chamoin*

C 20782 SPARSE SYSTEM IDENTIFICATION OF DYNAMICAL SYSTEMS FROM OUTPUT-ONLY MEASUREMENTS
***Tapas Tripura**, Souvik Chakraborty*

C 21212 INVERSE ANALYSIS INVESTIGATION BY GAUSSIAN PROCESSES OPTIMISATION OF A HISTORICAL CONCRETE BRIDGE RELYING ON DYNAMIC MODAL MEASUREMENTS
***Tomasz Garbowski**, Giuseppe Cocchetti, Aram Cornaggia, Rosalba Ferrari, Egidio Rizzi*

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

Tuesday 14:00 - 16:00 — *Room 3B*

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

C 20730 PERFORMANCE EVALUATION OF NEGATIVE STIFFNESS-BASED VIBRATION CONTROL DEVICES FOR SEISMIC PROTECTION OF BUILDING STRUCTURES
***Konstantinos Kapasakalis**, Antonios Mantakas, Moris Kalderon, Maria Antoniou, Evangelos Sapountzakis*

C 20434 3D NUMERICAL INVESTIGATION OF AN EXTENDED KDAMPER ABSORBER FOR SEISMIC RETROFITTING OF LOW-RISE BUILDINGS
***Antonios Mantakas**, Konstantinos Kapasakalis, Moris Kalderon, Maria Antoniou, Ioannis Antoniadis, Evangelos Sapountzakis*

C 20430 EXPERIMENTAL STUDY OF PHONONIC STRUCTURES WITH DDA ENHANCED UNIT-CELLS
***Moris Kalderon**, Antonios Mantakas, Kyriakos Alexandros Chondrogiannis, Ioannis Antoniadis*

C 21222 EVALUATION OF THE INTER-STORY ISOLATION SYSTEM APPLIED TO AN EXISTING RC SCHOOL BUILDING
*Enrico Bernardi, **Marco Donà**, Marco Ceresara, Marco Gaspari, Francesca da Porto*

C 20794 ENERGY DISSIPATION MECHANISMS OF A STEEL REINFORCED MULTI-LAYERED PENTAMODE BRIDGE BEARING
***Olga Sapountzaki E.**, Andreas Kampitsis E., Nikolaos Lagaros D.*

C 20652 ON THE VIBRATION ATTENUATION PERFORMANCE OF A GEOMETRICALLY NONLINEAR DEVICE MOUNTED TO A MULTI-STOREY STRUCTURE
***Kyriakos Alexandros Chondrogiannis**, Vasilis Dertimanis, Eleni Chatzi*

C 21220 EVALUATION OF THE INTER-STORY ISOLATION SYSTEM APPLIED TO AN EXISTING MASONRY SCHOOL BUILDING
*Enrico Bernardi, **Marco Donà**, Sergio Sut, Elisa Saler, Amedeo Caprino, Francesca da Porto*

UNCECOMP TS 15
STOCHASTIC FRACTURE AND DAMAGE
Tuesday 14:00 - 16:00
Room 4A

Chair: *Adnan Ibrahimbegovic, Panos Pantidis*

U 19736 **KEYNOTE:** STOCHASTIC IDENTIFICATION OF FRACTURE AND BOND PROPERTIES FOR REINFORCED CONCRETE FROM MEASUREMENTS
***Adnan Ibrahimbegovic**, Simona Dobrilla, Hermann Matthies*

U 19755 I-FENN: AN INTEGRATED FEM-PINN FRAMEWORK AND ITS APPLICATION ON NON-LOCAL CONTINUUM DAMAGE
***Panos Pantidis**, Mostafa Mobasher*

U 19766 BAYESIAN UPDATING OF CONSTITUTIVE LAWS FOR FINITE ELEMENT SIMULATION USING FULL FIELD MEASUREMENTS
***Abbas Jafari**, Eleni Chatzi, Jörg F. Unger*

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

U 19546 A FULLY PARALLELIZED AND BUDGETED MULTILEVEL MONTE CARLO METHOD (BMLMC)
***Niklas Baumgarten**, Christian Wieners*

U 19832 COMPARISON OF SURROGATE MODELING AND SAMPLING STRATEGIES FOR EFFICIENT BAYESIAN MODEL CALIBRATION
***Leon Riccius**, Iuri Rocha, Frans van der Meer*

COMPDYN TS 25
SOLUTION STRATEGIES FOR DYNAMIC PROBLEMS

Tuesday
14:00 - 16:00

Room 4B

Chair: *Matthew Bonney*

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

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

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

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

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

16:00-16:30
Coffee Break

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

Monday 16:30 - 18:30

Olympia

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

C 21508 A PROCEDURE FOR THE PROBABILISTIC ASSESSMENT OF MASONRY STRUCTURES UNDER TSUNAMI
Panagiotis G. Asteris, ***Liborio Cavaleri****, Marco F. Ferrotto*

C 20159 COMPRESSIVE BEHAVIOUR OF A CIRCULAR UNBONDED FIBER-REINFORCED ELASTOMERIC ISOLATOR (UFREI)
Gaetano Pianese, ***Gabriele Milani****, Antonio Formisano*

C 21426 DAMAGE PATTERN ANALYSIS OF THE BASILICA DI COLLEMAGGIO USING AEM MICRO-MODELING
Cosimo Pellecchia*, Alessandro Cardoni, Gian Paolo Cimellaro, Ahmed Amir Khalil*

C 21340 PROPOSAL OF A GENERAL METHODOLOGICAL APPROACH FOR THE SEISMIC ASSESSMENT OF HISTORICAL MASONRY AGGREGATES
Maurizio Acito, ***Martina Buzzetti****, Giuseppe Alfredo Cundari, Gabriele Milani*

C 20980 ON THE IN-PLANE FLEXURAL RESPONSE OF CANTILEVER UNREINFORCED CLAY BRICKWORK MASONRY WALL PANELS
Hisham Tariq*, Mohammad Amir Najafgholipour, Vasilis Sarhosis, Gabriele Milani*

C 21032 SEISMIC FRAGILITY EVALUATION OF TYPOLOGICAL MASONRY AGGREGATES ACCOUNTING FOR LOCAL COLLAPSE MECHANISMS
Valeria Leggieri, Francesco Salvatore Liguori, ***Sergio Ruggieri****, Antonio Bilotta, Antonio Madeo, Siro Casolo, Giuseppina Uva*

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

Tuesday 16:30 - 18:30

Attica

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

C 20741 DYNAMIC ANALYSIS AND EXPERIMENTAL VERIFICATION OF THE MECHANICAL CHARACTERISTICS OF VARIABLE CROSS-SECTION INDUSTRIAL PYLONS
Konstantinos Katakalos, George Manolis, George Manos, Lazaros Melidis, ***Georgios Dadoulis****, Vasil Kavardzikov, Georgi Stoilov*

C 20887 TESTING OF CONCRETE OR METAL HOLLOW POLES EMPLOYING PSEUDO-DYNAMIC OR FATIGUE LOADS
George Manos, Dimitrios Mpoufidis, Lazaros Melidis, ***Konstantinos Katakalos***

C 20888 OUT OF PLANE BEHAVIOR OF THERMAL INSULATED MASONRY WALLS AS PART OF BUILDING RETROFITTING
George Manos, Konstantinos Katakalos, ***Lazaros Melidis****, Anthimos Anastasiadis*

C 20918 PRELIMINARY EXPERIMENTAL TESTS ON STEEL-CONCRETE HYBRID COUPLED WALL SUBCOMPONENTS
Francesco Morelli, ***Agnese Natali****, Fabrizio Scozzese, Nicola Ceccolini, Alessandro Zona*

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

COMPDYN TS 31 - I
SEISMIC RISK AND DAMAGE ASSESSMENT
Tuesday 16:30 - 18:30
Templars

Chair: *Matthew DeJong, Lorenzo Hofer*

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

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

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

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

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

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

COMPDYN MS 42 - II
COMPUTATIONAL METHODS FOR INVERSE PROBLEMS IN STRUCTURES AND GEOPHYSICS
Tuesday 16:30 - 18:30
Kallirhoe 1

MS Organizers: *Dan Givoli, Haim Waisman*
Chair: *Dan Givoli, Haim Waisman*

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

C 20468 INVERSE DESIGN AND PHYSICAL REALIZATION OF MECHANICAL AND MAGNETIC METAMATERIALS WITH PROGRAMMABLE NONLINEAR RESPONSES
Xiaojia Shelly Zhang

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

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

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

C 20201 ADAPTIVE VOXEL-BASED HIGH-ORDER FULL WAVEFORM INVERSION FOR VOID IDENTIFICATION USING A FINITE CELL APPROACH
***Tim Bürchner**, Philipp Kopp, Stefan Kollmannsberger, Ernst Rank*

C 20418 INVERSE DYNAMICS OF FLEXIBLE MECHANICAL SYSTEMS GOVERNED BY QUASI-LINEAR HYPERBOLIC PARTIAL DIFFERENTIAL EQUATIONS
***Timo Ströhle**, Peter Betsch*

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

Tuesday 16:30 - 18:30 — ***Kallirhoe 2***

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

C 20711 OPTIMUM DESIGN OF ROCKING WALL COUPLED WITH BUILDING UNDER STOCHASTIC SEISMIC GROUND MOTION
*Michela De Angelis, **Giuseppe Quaranta**, Giulia Angelucci, Stefano Pampanin, Fabrizio Mollaioli*

C 21083 BUILDING BACK BETTER: THE CASE STUDY OF THE FAZZINI COLLEGE
***Laura Gioiella**, Fabio Micozzi, Laura Ragni, Andrea Dall'Asta*

C 21353 RETROFITTING OF R.C. FRAME BUILDINGS WITH DOUBLE CON-CAVE CURVED SURFACE ISOLATOR SLIDERS CHARACTERIZED BY OVER-STROKE DISPLACEMENT CAPACITY
*Felice Carlo Ponzo, Antonio Di Cesare, **Nicla Lamarucciola***

C 21085 DEVELOPMENT OF A TUNED LIQUID PARTICLE DAMPER WITH OPTIMISED DAMPING CHARACTERISTICS
***Sebastian Völkel**, Kersten Latz*

C 20438 SEISMIC ISOLATION OF COMPOSITE BRIDGE WITH SKEWED DECK
***Mohammad Mahdi Mohammadi Dehnavi**, Alessandra De Angelis, M.R. Pecce*

COMPDYN MS 39
SHM FOR TRANSPORT INFRASTRUCTURE RESILIENCE

Tuesday 16:30 - 18:30 — ***Abbey***

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

C 21306 RESTORATION OF A LANDMARK BALANCED CANTILEVER BRIDGE CONSIDERING DIFFERENT RESILIENCE AND SUSTAINABILITY STRATEGIES
***Marco Domaneschi**, Stergios Aristoteles Mitoulis, Raffaele Cucuzza, Valentina Villa, Roberta Di Bari, Gopika Siva*

C 21298 STUDY ON THE DEFECTIVITY LEVELS OF EXISTING BRIDGES ACCORDING TO THE ITALIAN GUIDELINES 2020
***Andrea Miano**, Moira Di Paolo, Annalisa Mele, Irene Della Ragione, Antimo Fiorillo, Paolo Anfosso, Marco Di Ludovico, Andrea Prota*

C 20960 SYSTEM IDENTIFICATION OF LONG-SPAN BRIDGES VIA SYNCHRO-SQUEEZED ADAPTIVE WAVELET TRANSFORM BASED OPTIMIZED MULTIPLE ANALYTICAL MODE DECOMPOSITION
***Hongya Qu**, Mwenda Lomthundzi, Yan Xu, An Chang*

C 20962 MTINSAR, STRUCTURAL INFORMATION AND ENVIRONMENTAL DATA TO ESTIMATE DEFORMATIONS OVER TIME OF SIMPLY SUPPORTED CONCRETE GIRDER BRIDGES: A FRAMEWORK PROPOSAL
***Mirko Calò**, Sergio Ruggieri, Andrea Nettis, Vincenzo Massimi, Vincenzo Barbieri, Sergio Samarelli, Giuseppina Uva*

C 22536 MULTI-PARAMETER IDENTIFICATION OF MOVING LOADS IN BEAM ROAD BRIDGES
***Andrea Mileto**, Egidio Lofrano, Andrea Arena*

C 20220 CONSIDERING THE EFFECT OF SPATIALLY INHOMOGENEOUS CORROSION STUDY ON THE SEISMIC PERFORMANCE OF BRIDGE PIERS
*Yin Gu, **Qixin Fan**, Xiangdong Dai, Bin Huang, Tao Xv*

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

Tuesday 16:30 - 18:30 | ***Ground***

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

U 19859 ADAPTIVE DOUBLE-LOOP MONTE CARLO GRADIENT ESTIMATORS FOR BAYESIAN OPTIMAL EXPERIMENTAL DESIGN
***Andre Carlon**, Joakim Beck, Raul Tempone*

U 19795 EVALUATION OF MODEL BIAS IDENTIFICATION APPROACHES BASED ON BAYESIAN INFERENCE AND APPLICATIONS TO DIGITAL TWINS
***Daniel Andrés Arcones**, Martin Weiser, Faidon-Stelios Koutsourelakis, Jörg F. Unger*

U 19796 A NOVEL VARIATIONAL BAYESIAN APPROACH TO STOCHASTIC SUBSPACE IDENTIFICATION
***Brandon O'Connell**, Max Champneys, Elizabeth Cross, Timothy Rogers*

U 19861 SEQUENTIAL MONTE CARLO WITH A GENERALIZED PRECONDITIONED CRANK NICHOLSON MCMC FOR HIGH-DIMENSIONAL BAYESIAN MODEL UPDATING
***Barbara Carrera**, Iason Papaioannou*

U 19899 INFLUENCE OF THE CHOICE OF THE SEISMIC INTENSITY MEASURE ON FRAGILITY CURVES ESTIMATION IN A BAYESIAN FRAMEWORK BASED ON REFERENCE PRIOR
***Antoine Van Biesbroeck**, Clément Gauchy, Cyril Feau, Josselin Garnier*

U 19920 OPTIMISATION UNDER UNCERTAINTY OF ALL-SOLID-STATE-BATTERY TORTUOSITIES BASED ON MULTIMODAL PARTICLE SIZE DISTRIBUTIONS AND NON-DIFFERENTIABLE STOCHASTIC FORWARD MODELS
***Gil Robalo Rei**, Christoph P. Schmidt, Wolfgang A. Wall*

COMPDYN TS 19 - I
REPAIR AND RETROFIT OF STRUCTURES

Tuesday
16:30 - 18:30

Room 1A

Chair: *Konstantinos G. Megalooikonomou, Francesco Nigro*

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

C 20551 SEISMIC RESPONSE ASSESSMENT OF AN EXISTING RC STRUCTURE RETROFITTED WITH STEEL EXOSKELETONS
***Francesco Nigro**, Gaetano Della Corte, Enzo Martinelli*

C 20780 SEISMIC ASSESSMENT AND STRENGTHENING OF THE REMAINING BEIRUT PORT SILOS DAMAGED AFTER THE 2020 AUGUST BLAST- A CASE STUDY
***Sahar Ismail**, Wassim Raphael, Fouad Kaddah*

C 21262 SYNTHETIC DATA GENERATION FOR THE CREATION OF BRIDGE DIGITAL TWINS WHAT-IF SCENARIOS
***Alejandro Jiménez Rios**, Vagelis Plevris, Maria Nogal*

C 21067 ECONOMIC EFFECTS OF SEISMIC RETROFIT STRATEGY ON RC SCHOOL BUILDINGS BASED ON COST-BENEFIT ANALYSIS
***Insub Choi**, HakJong Chang, JunHee Kim*

C 21523 RETROFITTING DAMAGED BUILDINGS UNDER SEISMIC MAINSHOCK-AFTERSHOCK SEQUENCE
***Benyamin Mohebi**, Farzin Kazemi, Neda Asgarkhani*

C 21158 SEISMIC UPGRADING OF TELECOMMUNICATION CENTER IN SKOPJE, NORTH MACEDONIA
*Veronika Shendova, Aleksandar Zurovski, A. Zlateski, E. Delova, G. Jekic, **Roberta Apostolska**, Z. Bozinovski*

COMPDYN MS 13
MONITORING AND LIFE CYCLE PERFORMANCE OF RAILWAY BRIDGES

Tuesday
16:30 - 18:30

Room 1B

MS Organizers: *Eftychia Apostolidi, Eleni Chatzi, Alfred Strauss*
Chair: *Eftychia Apostolidi, Charikleia Stoura*

C 20349 INDIRECT MONITORING OF RAILWAY BRIDGES USING THE CONTINUOUS TRACK MONITORING SYSTEM CTM2.0
***Steven Robert Lorenzen**, Klaus Ulrich Wolter, Maximilian Michael Rupp, Günther Grunert, Eftychia Apostolidi, Jens Schneider*

C 20624 ON-BOARD MONITORING OF RAIL BRIDGE DYNAMICS BASED ON FUSION OF SUBSPACE IDENTIFICATION WITH RAIL ROUGHNESS EFFECTS
***Charikleia Stoura**, Vasilis Dertimanis, Eleni Chatzi*

C 20409 A MACHINE LEARNING LEVERAGED AND MINIMAL HARDWARE-BASED TRAIN AND LOAD RECOGNITION SYSTEM
***Jascha Brötzmann**, Christian-Dominik Thiele, Maximilian Rupp, Mingchen Xing, Uwe Rüppel*

C 20708 QUICK BRIDGE WEIGH-IN-MOTION: A VALIDATION UNDER REAL OPERATING CONDITIONS
***Henrik Riedel**, Andrei Firus, Steven Lorenzen, Maximilian Michael Rupp, Max Johannes Alois Fritzsche, Michael Vospernig, Eftychia Apostolidi, Jens Schneider*

C 21257 CASE STUDY: IMPACT OF ROUTE SPECIFIC LOAD MODELS AND NUMERICAL MODEL CALIBRATION ON FATIGUE LIFETIME ASSESSMENT OF AN EXISTING RAILWAY BRIDGE
***Stefan Lachinger**, Sebastian Pissermayr, Marian Ralbovsky, Alois Vorwagner*

C 21499 NOVELTY DETECTION OF RAILWAY BRIDGES USING POWER DENSITY SPECTRUM AND MACHINE LEARNING: A CASE STUDY ON THE KW 51 BRIDGE IN BELGIUM
***Maximilian Michael Rupp**, Leon Schmeiser, Kevin Gerhard, Jascha Brötzmann, Steven Robert Lorenzen, Henrik Riedel, Jens Schneider*

C 21959 MONITORING OF A RAILWAY BRIDGE RECURRING TO COSTUMIZED SENSORS
***Chanalisa Salvi**, Carlos Moutinho, Borja Conde, Manuel Cabaleiro, Elsa Caetano*

COMPDYN TS 3 - II BRIDGE DYNAMICS

Tuesday 16:30 - 18:30 | **Room 2A**

Chair: *Olga Markogiannaki, Vassilis K. Papanikolaou*

C 22588 A DAMAGE DETECTION FRAMEWORK TO ASSESS THE PERFORMANCE LEVEL OF R/C BRIDGES USING VIBRATIONAL RESPONSE MEASUREMENTS
***Olga Markogiannaki**, Konstantinos Mixios, Sotiria Stefanidou, Vassilis K. Papanikolaou*

C 22213 DESIGNING A LOW-COST SENSORING SYSTEM FOR REAL TIME DAMAGE ASSESSMENT OF R/C BRIDGES
***Vassilis K. Papanikolaou**, Konstantinos Mixios, Sotiria Stefanidou, Olga Markogiannaki*

C 21320 IMPROVING RELIABILITY OF UZBEKISTAN'S TRANSPORTATION INFRASTRUCTURE UNDER IMPACT OF NATURAL HAZARDS BY ANALYSIS OF ITS VULNERABILITY, MONITORING AND MODELING
***Ulugbek Shermukhamedov**, Zukhritdin Ergashev, Shakhzod Takhirov, Abdurakhim Abdullaev*

C 21024 OPTIMIZED DYNAMIC DESIGN RULES FOR HIGH-SPEED BRIDGES BY USING DIGITAL TWIN
***Vincent Mathouraparsad**, Muriel Ragueneau, Huyen Nguyen*

C 20995 THE EFFECT OF GROUND MOTION INCIDENCE ANGLE FOR SCOURED HIGHWAY BRIDGES
***Serenay Ateş**, Özgür Avşar*

COMPDYN TS 32 SEISMIC RELIABILITY ANALYSIS

Tuesday 16:30 - 18:30 | **Room 2B**

Chair: *Jafar Jafari-Asl*

C 20842 ASSESSING BUILDING'S POST-EARTHQUAKE FUNCTIONAL RECOVERY ACCOUNTING FOR UTILITY SYSTEMS DISRUPTION
*Negar Mohammadgholibeyki, **Maria Koliou**, Abbie Liel*

C 21156 FAILURE PROBABILITY ESTIMATION: INSIGHT OR NUMBERS?
Karl Breitung

C 20586 KOOPMAN OPERATOR FOR TIME-DEPENDENT RELIABILITY ANALYSIS
***N. Navaneeth**, Souvik Chakraborty*

C 20671 OPERATOR LEARNING FRAMEWORK FOR UNCERTAINTY QUANTIFICATION AND RELIABILITY ANALYSIS
***Shailesh Garg**, Souvik Chakraborty*

C 20435 EFFICIENT RELIABILITY METHOD FOR PROBABILISTIC INTEGRITY ASSESSMENT OF CORRODED PIPELINES
***Jafar Jafari-Asl**, Mohamed El Amine Ben Seghier*

C 20501 RELIABILITY ANALYSIS OF EMBEDDED BASE CONNECTIONS
***Pablo Torres-Rodas**, Fernando Gomez*

COMPDYN MS 2 - I
ADVANCES IN THE DYNAMIC RESPONSE ANALYSIS, MONITORING, AND MITIGATION OF WIND TURBINES
Tuesday 16:30 - 18:30
Room 3A

MS Organizers: *Agathoklis Giaralis, Giuseppe Failla*
Chair: *Giuseppe Failla*

C 20211 SEISMIC RESPONSE MITIGATION OF ONSHORE WIND TURBINES SUBJECTED TO PULSE-LIKE GROUND MOTIONS USING A TWO-TERMINAL TUNED INERTER DAMPER
*Gioacchino Alotta, Chiara Biondo, **Agathoklis Giaralis**, Giuseppe Failla*

C 20236 MONITORING MOORING(MONIMOOR) LINES OF FLOATING STRUCTURES USING DEEP LEARNING BASED APPROACHES
***Smriti Sharma**, Vincenzo Nava, Nicolas Gorostidi*

C 20431 AN IMPLEMENTATION OF MULTI-SUPPORT SEISMIC INPUT MOTION INTO OPENFAST FOR THE EARTHQUAKE ANALYSIS OF OFFSHORE WIND TURBINES
***Carlos Romero-Sánchez**, Luis A. Padrón*

C 20597 DESIGN AND PERFORMANCE OF A PASSIVE VIBRATION CONTROL DEVICE FOR HAWT
***Ettore Sorge**, Carlos Riascos, Nicola Caterino, Cristoforo Demartino, Christos Thomas Georgakis*

C 20788 SEISMIC PERFORMANCE ASSESSMENT OF FLOATING OFFSHORE WIND TURBINES SUPPORTED BY TENSION LEG PLATFORMS
***Sadra Amani**, Athul Prabhakaran, Subhamoy Bhattacharya*

C 21120 SUBSTRUCTURE OPTIMIZATION OF A 10MW FLOATING WIND TURBINE FOR INSTALLATIONS IN ITALIAN SEAS
***Giulio Ferri**, Enzo Marino*

COMPDYN MS 36
EXPERIMENTAL TESTING ON SEISMIC ISOLATION AND ENERGY DISSIPATION DEVICES
Tuesday 16:30 - 18:30
Room 3B

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

C 20298 STATIC AND DYNAMIC EXPERIMENTAL VALIDATIONS OF THE LATERAL IMPACT RESILIENT DOUBLE CONCAVE FRICTION PENDULUM (LIR-DCFP) BEARING
*Gaspar Auad, **Paolo Castaldo**, José L. Almazán, Diego Quizanga*

C 21210 ANALYSIS OF THE FORCE RESPONSE OF BEARING DEVICES FOR BRIDGE STRUCTURES
***Marco Furinghetti**, Simone Reale, Matt J. Fox, Yuan Fan, Chiara Casarotti, Alberto Pavese*

C 20718 SHAKE-TABLE TESTING OF LOW-COST, HIGH-PERFORMANCE SEISMIC ISOLATORS BASED ON ROLLING RUBBER SPHERES
***Antonios A. Katsamakas**, Michalis F. Vassiliou*

C 20841 BEHAVIOR OF COMPLEX CURVED SURFACE SLIDER IN DESIGN AND EXPERIMENTAL SITUATION
***Frederik Bomholt**, Toshihisa Mano*

C 21140 EXPERIMENTAL TESTS OF VARIOUS TYPES OF SEISMIC ISOLATION SYSTEMS
***Mohammed Mohammed**, Scott Darling, Ahmed Ibrahim, Ahmed Atiek*

C 21461 EXPERIMENTAL AND FINITE ELEMENT ANALYSIS OF THE CYCLIC BEHAVIOUR OF LINEAR DISSIPATIVE DEVICES
*Salvatore Pagnotta, Muhammad Ahmed, **Piero Colajanni***

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

Tuesday 16:30 - 18:30 — *Room 4A*

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

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

U 19615 PHYSICS-CONSTRAINED TRANSFER LEARNING WITH BAYESIAN MULTILEVEL MODELS
***Lawrence Bull**, Matthew Jones, Andrew Duncan, Elizabeth Cross, Mark Girolami*

U 19579 THE USE OF HAMILTONIAN MONTE CARLO FOR BAYESIAN MODEL UPDATING WITH STRUCTURAL RELIABILITY METHODS
***Danko Jerez**, Hector Jensen, Cristóbal Figueroa, Michael Beer*

U 19731 CORRELATED GAUSSIAN PROCESS LATENT FORCE MODELS FOR RECOVERING MULTIPLE FORCES
***Matthew Jones**, Timothy Rogers*

U 19801 A LATENT RESTORING FORCE APPROACH TO THE IDENTIFICATION OF HYSTERETIC SYSTEMS
*Joe D Longbottom, Elizabeth J Cross, **Timothy J Rogers***

U 19924 TUNING OF KALMAN FILTER NOISE PARAMETERS FOR UNCERTAINTY QUANTIFICATION IN INPUT-STATE ESTIMATION OF MDOF SYSTEMS
*Marios Panias, Luigi Caglio, Sebastian T. Glavind, **Amirali Sadeqi**, Michael Havbro Faber, Henrik Stang, Evangelos Katsanos*

U 20017 RESPONSE RECONSTRUCTION IN BRIDGES USING ON-BOARD MEASUREMENTS FROM PASSING VEHICLES
*Filippos Filippitzis, **Ho Man Siu**, Charikleia Stoura, Costas Papadimitriou, Elias G. Dimitrakopoulos*

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

Wednesday 9:00 - 11:00

Olympia

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

U 19650 DATA LEARNING: INTEGRATING DATA ASSIMILATION AND MACHINE LEARNING FOR DIGITAL TWINS
Rossella Arcucci

U 19744 BAYESIAN ANOMALY DETECTION IN FRACTIONAL DIFFUSION PROBLEMS
Hasnaa Alzahrani, George Turkiyyah, Olivier Le Maître, ***Omar Knio***

U 19836 MULTI-FIDELITY GAUSSIAN PROCESS SURROGATE MODELING FOR FLOW THROUGH STENOSIS
Shaima Magdaline Dsouza*, Saleh Rezaeiravesh, Philipp Schlatter, Lisa Prahl Wittberg, Christian Gasser*

U 19568 NEW DEPENDENT MEASURES OF ASSOCIATION BETWEEN DYNAMIC MODEL OUTPUTS AND INPUTS USING KERNELS
Matieyendou Lamboni

U 19684 GENERALIZED KALMAN FILTER BASED REINFORCEMENT LEARNING
Vasos Arnaoutis*, Bojana Rosic*

U 19688 DATA ASSIMILATION FOR THE HELMHOLTZ PROBLEM WITH STATISTICAL REDUCED ORDER MODELING
Lucas Hermann*, Ulrich Römer*

U 19702 SOLVING PARAMETRIC PDES VIA PARSIMONIOUS DISCRETISATIONS: APPLICATION TO UNCERTAINTY QUANTIFICATION AND DATA ASSIMILATION
Damiano Lombardi, Miguel Fernandez, ***Sébastien Riffaud***

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

Wednesday 9:00 - 11:00

Attica

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

C 21175 EXPERIMENTAL AND NUMERICAL STUDY OF THE PERFORMANCE OF EXISTING PRESTRESSED CYLINDRICAL CONCRETE PIPES STRENGTHENED WITH REINFORCED CONCRETE OR CARBON-REINFORCED FIBER POLYMER JACKETS
George Manos, ***Lazaros Melidis****, Vassilios Soulis, Konstantinos Katakalos*

C 21194 STRUCTURAL HEALTH MONITORING(SHM) OF POLYFYTOS BRIDGE AND EVALUATION OF ITS DYNAMIC PROPERTIES
Alexandros Chortis*, Ioannis Ramandanis, Georgios Dadoulis, Lazaros Melidis, George Manos, Konstantinos Katakalos*

C 20889 THE SEISMIC PERFORMANCE OF THE DAMAGED BELL TOWER OF KOUROUKLATA IN KEFALONIA, GREECE DURING THE 2014 EARTHQUAKE SEQUENCE – A PROPOSAL FOR RETROFITTING
George Manos, ***Lampros Kotoulas***

C 20380 STRUCTURAL HEALTH MONITORING OF THE FATIGUE BEHAVIOR OF FRP STRENGTHENED RC BEAMS
Barbara Charalambidi*, Konstantinos Providakis, Konstantinos Katakalos, Alexandros Charalampidis*

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

COMPDYN TS 31 - II
SEISMIC RISK AND DAMAGE ASSESSMENT
Wednesday 9:00 - 11:00
Templars

Chair: *Paolo Lonetti, Alessandro Cardoni*

C 20971 NUMERICAL ANALYSIS OF BRIDGE STRUCTURES UNDER EXTREME WAVE-INDUCED LOADS
*Fabrizio Greco, **Paolo Lonetti**, Umberto De Maio*

C 21410 SEISMIC VULNERABILITY ASSESSMENT OF AN URBAN NATURAL GAS NETWORK
***Alessandro Cardoni**, Sebastiano Marasco, Gian Paolo Cimellaro*

C 21408 A CAT BOND-BASED SOLUTION FOR SEISMIC RISK TRANSFER IN ITALY
***Lorenzo Hofer**, Mariano Angelo Zanini, Paolo Gardoni*

C 20090 A MODEL FOR THE STRUCTURAL AND SEISMIC ASSESSMENT OF THE MOSQUE-CATHEDRAL OF CORDOBA
***Maria-Victoria Requena-Garcia-Cruz**, Emilio Romero-Sánchez, Antonio Morales-Esteban, N. Fernández-Pérez*

C 21003 TYPOLOGICAL FRAGILITY ASSESSMENT OF PRESTRESSED CONCRETE GIRDER BRIDGES SUBJECTED TO TRAFFIC LOADS AFFECTED BY CORROSION
***Alessandro Nettis**, Andrea Nettis, Sergio Ruggieri, Giuseppina Uva*

C 21204 THE CHALLENGES AND ADVANTAGES OF MACRO MODELING IN ANSYS SOFTWARE FOR SEISMIC VULNERABILITY ASSESSMENT OF HISTORIC MASONRY STRUCTURES
***Hatice Ayşegül Demir**, Kutay Yücetürk, Engin Aktaş, Mine Hamamcıoğlu-Turan*

COMPDYN MS 17 - I
STEEL JOINTS BEHAVIOR UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS
Wednesday 9:00 - 11:00
Kallirhoe 1

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

C 21327 BEAHVIOUR OF JOINTS WITH FRICTION DAMPERS UNDER COLUMN LOSS SCENARIO
***Roberto Tartaglia**, Mario D'Aniello, Roberto Carlevaris, Raffaele Landolfo*

C 21182 EFFECT OF CONSTRUCTION DETAILS ON THE IN-PLANE SEISMIC RESPONSE OF DRYWALL FAÇADES
Alessia Campiche

C 20703 EXPERIMENTAL RESPONSE OF A LARGE-SCALE STEEL STRUCTURE EQUIPPED WITH INNOVATIVE COLUMN BASES
***Elena Elettore**, Fabio Freddi, Massimo Latour, Vincenzo Piluso, Gianvittorio Rizzano*

C 20656 STEEL BRACING SYSTEMS TO REDUCE THE SEISMIC VULNERABILITY OF LWS SUSPENDED CEILINGS: EXPERIMENTAL CHARACTERISATION
***Alessandro Prota**, Amirhossein Nikpour*

C 21241 ON THE INFLUENCE OF SEMIRIGID JOINTS ON THE SEISMIC VULNERABILITY OF ONE STOREY STEEL STRUCTURES
***Greta Agata Venneri**, Gianfranco De Matteis, Giuseppe Brando*

C 20605 STRENGTH OF CONNECTIONS BETWEEN SHS COLUMNS AND THROUGH PLATES
*Atsushi Sato, Massimo Latour, Amparo de la Peña, **Sabatino Di Benedetto**, Antonella Bianca Francavilla, Gianvittorio Rizzano*

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

Wednesday 9:00 - 11:00

Kallirhoe 2

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

C 21385 INVESTIGATION OF THE EFFECT OF TIE-RODS IN ROCKING MASONRY FAÇADES INCLUDING THE DYNAMIC SOIL-STRUCTURE INTERACTION
***Francesca Taddei**, Linda Giresini, Gerhard Müller*

C 20475 ISO-CLASS CURVES FOR THE ASSESSMENT OF SEISMIC/ENERGY RETROFITTING OF AN EXISTING MASONRY BUILDING THROUGH A TIMBER FRAME SYSTEM
***Linda Giresini**, Francesca Corona, Gabriele Guerrini, Francesco Graziotti*

C 20822 EXPERIMENTAL PULL-OUT BEHAVIOR OF HELICOIDAL STEEL BARS IN MASONRY
*Manuela Scamardo, Sara Cattaneo, **Pietro Crespi***

C 20645 TWO-BODIES VERTICAL SPANNING WALL RESTRAINED BY AN ELASTIC TIE ROD
***Giacomo Destro Bisol**, Sanjeev Prajapati, Omar AlShawa, Luigi Sorrentino*

C 20282 FRAGILITY CURVES FOR ROCKING MASONRY FAÇADES OF CHURCHES: A SENSITIVITY STUDY OF VULNERABILITY PARAMETERS
***Luca Umberto Argiento**, Claudia Casapulla, Francesca Ceroni*

COMPDYN TS 5 - I
DYNAMICS OF CONCRETE AND MASONRY STRUCTURES

Wednesday 9:00 - 11:00

Abbey

Chair: *Shenghan Zhang, Huan He*

C 20635 INVESTIGATION ON THE DYNAMIC BEHAVIOR OF WEAKLY CONNECTED MODULAR BUILDINGS
***Shenghan Zhang**, Jun Chen*

C 20791 VERIFICATION OF MATERIAL MODELS FOR MASONRY WALLS IN NONLINEAR PUSHOVER ANALYSIS
***Huan He**, Sander J. H. Meijers*

C 20457 VULNERABILITY ASSESSMENT OF BUILDINGS BASED ON THE PSEUDO-DYNAMIC TESTING METHOD WITH SUB-STRUCTURING: APPLICATION TO PROGRESSIVE COLLAPSE
***Jean-Baptiste Charrié**, David Bertrand, Cédric Desprez, Stéphane Grange*

C 20680 MODELING OF FRAMES WITH HYBRIDFEM, A PSEUDO-DISCRETE-FINITE MODEL INCLUDING NONLINEAR GEOMETRIC EFFECTS AND NONLINEAR MATERIALS
***Igor Bouckaert**, Michele Godio, João Pacheco de Almeida*

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

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

Wednesday 9:00 - 11:00

Ground

MS Organizers: *Agathoklis Giaralis, Giuseppe Failla*
Chair: *Agathoklis Giaralis*

C 20909 LONG-TERM STRUCTURAL HEALTH MONITORING OF ONSHORE WIND TURBINES USING FIBER OPTIC STRAIN SENSING
*James Xu, Linqing Luo, Chien-Chih Wang, Kenichi Soga, **Matthew DeJong***

C 21259 INTEGRATED WEIGHT-MINIMAL DESIGN OF TOWER, MONOPILE SUBSTRUCTURE, AND DYNAMIC VIBRATION ABSORBER IN A 15MW BENCHMARK OFFSHORE WIND TURBINE
***Agathoklis Giaralis**, Zixiao Wang, Tim Camp, Jean-Christophe Gilloteaux*

C 20234 REDESIGNING THE TRANSITION PIECE FOR MITIGATING THE SEISMIC RESPONSE OF OFFSHORE WIND TURBINES
***Rohollah Rostami**, Alessandro Tombari*

C 20370 SHORT-TERM DAMPING IDENTIFICATION OF WIND TURBINE BLADE MODES UNDER ENVIRONMENTAL AND OPERATIONAL VARIABILITY USING GAUSSIAN PROCESS TIME SERIES MODELS
***Kristian Ladefoged Ebbehøj**, Konstantinos Tatsis, Philippe Couturier, Jon Juel Thomsen, Eleni Chatzi*

C 20378 VIBRATION-BASED VIRTUAL SENSING FOR FATIGUE-LIFE PREDICTION – BASELINE AND POTENTIAL
***Mads Greve Pedersen**, Isaac Farreras Alcover, Yi Lui, Jenni Rinker, Sandro Diord Rescinho Amador, Simon Rex, Jan Becker Høgsberg*

C 20429 SEISMIC RESPONSE OF MONOPILE-SUPPORTED OFFSHORE WIND TURBINES EMBEDDED IN DIFFERENT SEABED PROFILES INCLUDING DYNAMIC SOIL-STRUCTURE INTERACTION
***Eduardo Rodríguez-Galván**, Guillermo M. Álamo, Cristina Medina, Luis A. Padrón, Juan J. Aznárez, Orlando Maeso*

COMPDYN TS 19 - II
REPAIR AND RETROFIT OF STRUCTURES

Wednesday 9:00 - 11:00

Room 1A

Chair: *Konstantinos G. Megalooikonomou*

C 20533 NUMERICAL INVESTIGATION OF RETROFITTING WAFFLE SLABS WITH CARBON FIBRE REINFORCED POLYMER PLATES
***Michael Jung**, George Markou*

C 20785 THE CHURCH OF SANTA MARIA DELLE GRAZIE AL CALCINAIO: FROM DIAGNOSTIC STUDIES TO ARCHITECTURAL AND STRUCTURAL REHABILITATION PROJECT
***Michelangelo Micheloni**, Anna Livia Ciuffreda, Gabriela Simoni, Federico Salvini*

C 21159 DEVELOPING THE METHODOLOGY OF REGIONAL-SCALE RETROFITTING STRATEGY FOR SOFT STORY BUILDINGS
***SangJin Hahn**, Insub Choi, HakJong Chang, JunHee Kim*

COMPDYN TS 10
IMPACT DYNAMICS

C 20699 DYNAMICAL RESPONSE OF MOTOR-DRIVEN PUMPS SUBJECTED TO AIRCRAFT IMPACT INDUCED VIBRATIONS – COMPARISON WITH SEISMIC RESPONSE
***Sylvie Audebert**, Damien Rousseu*

C 20982 DYNAMIC RESPONSE OF TREES SUBJECT TO A LANDSLIDE-INDUCED AIR BLAST: IMPLICATIONS FOR AIR BLAST RISK ASSESSMENTS
***Yu Zhuang**, Perry Bartelt, Aiguo Xing, Alexander Bast*

C 22306 INVESTIGATION OF THE EFFECTIVE OF BUMPER WALLS AGAINST SEISMIC POUNDING
***Vasiliki N. Tsotoulidi**, Konstantinos V. Spiliopoulos*

COMPDYN TS 17 - I
PERFORMANCE-BASED EARTHQUAKE ENGINEERING
Wednesday 9:00 - 11:00
Room 1B

Chair: *Alper Ilki, Simona Bianchi*

C 20826 NUMERICAL SEISMIC PERFORMANCE INVESTIGATION OF AAC INFILL WALLS WITH FLAT-TRUSS BED-JOINT REINFORCEMENT
*Ömer Faruk Halici, **Alper Ilki***

C 21303 IMPACT OF EARTHQUAKES VS. HEAT WAVES ON THE SOCIO-ECONOMIC LOSSES OF BUILDINGS
***Simona Bianchi**, Jonathan Ciurlanti, Alessandra Luna Navarro, Eleonora Brembilla*

C 20374 NUMERICAL INVESTIGATIONS ON DYNAMIC BEHAVIOUR OF LUMPED MASS MODEL OF NON-STRUCURAL ELEMENTS AND 3D RC BUILDINGS
***S. Saranya**, Palissery Sunitha*

C 20542 CALIBRATING MODEL PARAMETERS FOR THE HYSTERETIC RESPONSE SIMULATION OF REINFORCED CONCRETE COLUMNS WITH CIRCULAR AND RECTANGULAR SECTION
***Yewon Park**, Chang Seok Lee, Jong-Su Jeon*

C 20687 INFLUENCE OF BOND-SLIP ON NUMERICAL FRAGILITY CURVES AND STRUCTURAL RELIABILITY OF RC STRUCTURAL INTERNAL BEAM-COLUMN SUB-ASSEMBLY
***Lorenzo Audisio**, Michele D'Amato, Rosario Gigliotti*

COMPDYN MS 24 - I
ADVANCES IN SEISMIC ASSESSMENT AND INTEGRATED RETROFITTING FOR ENVELOPES OF RC

Wednesday 9:00 - 11:00 | **Room 2A**

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

C 21371 EXPERIMENTAL EVALUATION OF EFFICIENCY OF SEISMIC PLUS ENERGY STRENGTHENING SOLUTIONS FOR MASONRY INFILL WALLS SUBJECTED TO OUT-OF-PLANE LOADINGS
***André Furtado**, Hugo Rodrigues, José Melo, António Arêde, Humberto Varum*

C 21157 INTEGRATED SEISMIC AND ENERGY RETROFITTING OF BUILDING ENVELOPES WITH NOVEL PREFABRICATED TEXTILE CAPILLARY TUBE PANELS
*Eun-Rim Baek, Daniel Pohoryles, Stylianos Kallioras, **Dionysios Bournas**, Tae-Hyeong Kim*

C 21206 ANALYTICAL MODEL FOR PREDICTING OOP LATERAL BEHAVIOR OF MASONRY INFILL WALLS
***Marco Gaspari**, Sara Mozzon, Marco Donà, Nicolò Verlato, Francesca da Porto*

C 20474 ON THE INFLUENCE OF CLIMATE AND SEISMIC HAZARD CONDITIONS IN THE IDENTIFICATION OF OPTIMAL RETROFITTING STRATEGIES FOR RC BUILDINGS
***Rita Couto**, Gianrocco Mucedero, Rita Bento, Ricardo Monteiro*

C 20695 INVESTIGATION OF SEISMIC BEHAVIOUR OF EXISTING MASONRY INFILLS THROUGH COMBINED CYCLIC IN-PLANE AND DYNAMIC OUT-OF-PLANE TESTS
***Maithree Kurukulasuriya**, Riccardo Milanesi, Guido Magenes, Davide Bolognini, Luca Grottoli, Filippo Dacarro, Paolo Morandi*

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

Wednesday 9:00 - 11:00 | **Room 2B**

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

U 20010 **KEYNOTE:** SIMULLTANEOUS DENOISING AND ROVERY OF DYNAMICAL SYSTEM EQUATIONS FROM NOISY MEASUREMENTS
***Alireza Doostan**, Jacqueline Wentz, Jeffery Hokanson*

U 19845 BAYESIAN NEURAL NETWORKS WITH PHYSICS-AWARE REGULARIZATION FOR TRAVEL TIME MODELING FROM IMBALANCED DATA
***Audrey Olivier**, Sevin Mohammadi, Andrew Smyth, Matt Adams*

U 19542 FORMULATION OF A HIGH DIMENSIONAL OPTIMIZATION PROBLEM USING PROBABILISTIC LEARNING TOOL IN A TURBOMACHINERY DETUNING CONTEXT
***Evangéline Capiez-Lernout**, Christian Soize*

U 19539 RELEVANCE VECTOR MACHINE ANALYSIS AND CLASSIFICATION FOR INDUSTRIAL APPLICATIONS
***Panos Tsilifis**, Piyush Pandita, Sandipp Krishnan Ravi, Ambarish Kulkarni*

U 20020 UNCERTAINTIES IN THE SYNTHETIC DATA GENERATION FOR THE CREATION OF BRIDGE DIGITAL TWINS
***Alejandro Jiménez Rios**, Vagelis Plevris, Maria Nogal*

COMPDYN MS 26 - I
NON-DETERMINISTIC MODEL UPDATING AND HEALTH MONITORING WITH UNCERTAINTY TREATMENT

Wednesday 9:00 - 11:00

Room 3A

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

C 20423 **KEYNOTE:** ON THE APPLICATION OF MULTIDOMAIN LINE SAMPLING FOR RELIABILITY AND SENSITIVITY ANALYSIS IN STOCHASTIC LINEAR DYNAMICS
***Marcos Valdebenito**, Matthias Faes, Mauricio Misraji, Danko Jerez, Michael Beer*

C 21405 STOCHASTIC MODEL UPDATING FOR LEO SATELLITE INTER-SATELLITE LINK DYNAMICS MODEL UNDER UNCERTAINTY
*Qianyi Wu, Yao Zhang, Jingrui Zhang, **Sifeng Bi**, Xingang Li, Zeyu Bao*

C 20940 STOCHASTIC AND UNCERTAINTY ANALYSIS AND MONITORING OF REINFORCED CONCRETE HIGHWAY BRIDGE DECKS
Yunping Xi

C 20567 APPLICATION OF DIRECTIONAL IMPORTANCE SAMPLING FOR ESTIMATION OF FIRST EXCURSION PROBABILITIES OF NONLINEAR CONSERVATIVE SDOF SYSTEMS SUBJECT TO GAUSSIAN STOCHASTIC LOADING
***Mauricio Misraji**, Matthias Faes, Marcos Valdebenito*

C 20678 BAYESIAN UPDATING OF WOODEN STRUCTURAL PARAMETERS AND SEISMIC DAMAGE CLASSIFIER USING NEURAL NETWORK
***Rikuto Mizobuchi**, Masayuki Kohiyama, Takuzo Yamashita*

C 21018 A COMPARISON OF SAMPLING-BASED BAYESIAN MODEL UPDATING APPROACHES APPLIED UPON A NEW BENCHMARK AEROSPACE TESTBED
***Ewan Smith**, Kui He, Sifeng Bi*

COMPDYN MS 40
APPLICATION OF DEEP LEARNING AND IOT IN NUMERICAL MODELLING AND HEALTH MONITORING OF STRUCTURES/INFRASTRUCTURES

Wednesday 9:00 - 11:00

Room 3B

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

C 20155 INDIRECT MONITORING OF RAILWAY TRACKS WITH DATA COLLECTED FROM IN-SERVICE TRAIN USING UNSUPERVISED ANOMALY DETECTION METHOD
***Ramin Ghiasi**, Muhammad Arslan Khan, Abdollah Malekjafarian*

C 20207 REDUCING IMPEDING FACTORS FOR ENHANCED RESILIENCE THROUGH MACHINE LEARNING BASED STRUCTURAL HEALTH MONITORING
Islam Mantawy

C 20436 POMDP BASED RAILWAY MAINTENANCE PLANNING VIA DEEP REINFORCEMENT LEARNING
***Giacomo Arcieri**, Cyprien Hoelzl, Oliver Schwery, Daniel Straub, Konstantinos G. Papakonstantinou, Eleni Chatzi*

C 21865 EFFECTIVE TECHNIQUE FOR STRUCTURES DAMAGE DETECTION BASED ON THE STRUCTURAL FREQUENCY MAPS
***Wael A. Altabey**, Mohammad Noori, Zhishen Wu, Ahmad Silik, Nabeel S. D. Farhan*

C 20187 DEEP LEARNING-BASED CRACK, LOCATION AND AREA IDENTIFICATION FOR A PIPELINE BY THE CONVOLUTIONAL NEURAL NETWORK BASED ON CRACK CONTOUR NETWORK METHOD
*Wael A. Altabey, **Mohammad Noori**, Zhishen Wu*

COMPDYN MS 14
ADVANCES IN OPTIMIZATION AND CONTROL OF STRUCTURES UNDER DYNAMIC LOADS
Wednesday 9:00 - 11:00 ***Room 4A***

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

C 20610 OPTIMAL TOPOLOGICAL DESIGN OF STRUCTURES SUBJECTED TO NON-STATIONARY STOCHASTIC EXCITATIONS
***Giulia Angelucci**, Giuseppe Quaranta, Fabrizio Mollaioli*

C 20991 VARIABLES FOR VIBRATION CONTROL IN STEEL-DECK COMPOSITE FLOORS UNDER HUMAN-INDUCED ACTIVITIES
***Gelacio Juárez-Luna**, Félix Josué Gallegos Correa, Omar Caballero Garatachea, Luis Ángel Peralta González*

C 20789 PERFORMANCE ASSESSMENT OF PINNED ROCKING CORE WALLS IN STEEL MULTI-STORY BUILDINGS SUBJECTED TO STRONG SEISMIC GROUND MOTIONS
*Michela De Angelis, Giulia Angelucci, Giuseppe Quaranta, **Fabrizio Mollaioli***

C 21334 SEISMIC PERFORMANCE ASSESSMENT OF GRID-SHELL DOMES EQUIPPED WITH DAMPERS
***Alireza Hosseini**, Bruno Briseghella, Gian Felice Giaccu, Luigi Fenu*

C 20329 ANALYTICAL INVESTIGATION OF THE INFLUENCE OF SEISMICITY ON THE CONSTRUCTION COST OF THE R/C LOAD-BEARING STRUCTURE OF A 5-STOREY BUILDING WITH SPRING SUPPORTS
*Aggelos Michalitsianos, Diogenis Rogkogkos, **Theodoros Chrysanidis***

COMPDYN TS 27 - I
STEEL STRUCTURES
Wednesday 9:00 - 11:00 ***Room 4B***

Chair: *Francesco Salvatore Liguori*

C 21036 NUMERICAL STUDY ON CYCLIC RESPONSE OF PREQUALIFIED CARBON NEUTRALITY DISMANTLE CONNECTION
***Jaehoon Bae**, Youngju Kim, Jaehyeok Doh, Jintak Oh, Sanghoon Kim*

C 20490 MECHANICAL-BASED SEISMIC VULNERABILITY ANALYSIS OF INDUSTRIAL STEEL STRUCTURES WITH MASONRY INFILLS
***Francesco Salvatore Liguori**, Antonio Madeo, Antonio Formisano*

C 21142 INELASTIC TORSIONAL BUCKLING OF A SYMMETRIC THREE-DIMENSIONAL MOMENT-RESISTING FRAME SUBJECTED TO HORIZONTAL FORCE IN THE DIAGONAL DIRECTION
***Iori Fukuda**, Kohju Ikago, Takahito Maeda, Atsushi Nishimoto, Yoshikazu Araki*

C 20658 NUMERICAL ANALYSIS ON A REVERSIBLE CONNECTION FOR STEEL MODULAR BUILDINGS
***Annarita Palmiotta**, Michele D'Amato, Rosario Gigliotti*

C 21141 SEISMIC PERFORMANCE OF SPECIAL STEEL MOMENT FRAMES USING DETAILED VS SIMPLE HYSTERIC CURVES
***Emilia Clavijo**, Jorge Molina, Nicolas Coello, Xavier Vintimilla, Francisco Flores, Pablo Quinde*

C 21107 SEISMIC EFFECT ON THE MICADO STRUCTURAL SOLUTION. A NUMERICAL ANALYSIS
***Ali Dalalbashi**, Jorge Pinto, Cristina Reis, F. Pimenta, N. Oliveira Ferreira, N. Bento Pereira*

11:00-11:30 **Coffee Break**

COMPDYN
PLENARY LECTURES

Wednesday
11:30 - 13:30

Olympia

Chair: *Vissarion Papadopoulos*

C 21492 RECENT ADVANCES IN GROUND MOTION SELECTION FOR SEISMIC ANALYSIS
Jack Baker

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

C 21442 NEW STANDARDS FOR SEISMIC ASSESSMENT OF BUILT CULTURAL HERITAGE: ONGOING WORK
Paulo B. Lourenço

UNCECOMP
PLENARY LECTURES

Wednesday
11:30 - 13:30

Attica

Chair: *George Stefanou*

U 20382 THE PHASE FIELD FRACTURE METHOD: DOMAIN-DECOMPOSITION, ADAPTIVE RE-MESHING, AND STOCHASTIC ANALYSIS
Haim Waisman

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

U 19576 UNDERSTANDING AND MANAGING IDENTIFICATION PRECISION IN OPERATIONAL MODAL ANALYSIS
Siu-Kui Au

13:30-14:30
Lunch Break

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

Wednesday 14:30 - 16:30

Olympia

MS Organizers: *Didier Lucor, Rossella Arcucci, Bojana Rosic*
Chair: *Hermann Matthies, Bojana Rosic*

U 20365 **KEYNOTE:** MATERIAL SYMMETRY ADAPTED PROBABILISTIC MODELLING OF ELASTICITY TENSORS
***Hermann Matthies**, Sharana Shivanand, Bojana Rosić*

U 19710 BAYESIAN SPARSE SELF-ORGANIZED MAPS
***Bojana Rosic**, Bram van de Weg, Lars Greve*

U 19564 NON-INTRUSIVE OPERATOR INFERENCE FOR SOFT ROBOT REDUCED ORDER MODEL
***Minke Berghuis**, Andjelka Stanic, Bojana Rosic*

U 19732 PHYSICS-CONSTRAINED SURROGATE MODELLING FOR DYNAMICAL SYSTEMS IN THE FREQUENCY DOMAIN
***Julius Schultz**, Ulrich Römer*

U 19762 DATA-DRIVEN DOMAIN DECOMPOSITION DESCRIBING NONLINEAR MECHANICAL RESPONSE OF BATTERY CELLS
***Timm Gödde**, Bojana Rosić*

U 19750 PREDICTION UNCERTAINTY FLATTENING FOR PERFORMANCE IMPROVEMENT OF DEEP LEARNING
Chao Liu, Xinlei Zhou, ***Xizhao Wang***

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

Wednesday 14:30 - 16:30

Attica

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

C 20884 EARTHQUAKE RETROFITTING OF "SOFT-STORY" RC BUILDINGS
George Manos, Konstantinos Katakalos, Vassilios Soulis, ***Lazaros Melidis***

C 20844 ASSESSING THE PERFORMANCE OF EXISTING RC BEAM-COLUMN JOINTS
***Emmanouil Golias**, Demitrios Cotsovos*

C 20831 EXPERIMENTAL AND NUMERICAL INVESTIGATION OF THE SEISMIC RESPONSE OF CONFINED MASONRY WALLS
***Nemanja Krtinić**, Matija Gams, Marko Marinković*

C 21169 NUMERICAL INVESTIGATION OF R/C COLUMNS BEFORE AND AFTER FRP STRENGTHENING UNDER SEISMIC TYPE LOADINGS UTILIZING A NOVEL ANCHORING SYSTEM
***Georgia Kotanidou**, Lazaros Melidis, Konstantinos Katakalos*

C 21193 GEOMETRY OPTIMIZATION OF ARCHED STONE STRUCTURES UNDER GRAVITY AND SEISMIC TYPE LOADINGS
***Alexandros Chortis**, Lazaros Melidis, Konstantinos Katakalos, Amaryllis Iliadi Manou*

C 20563 MACHINE-LEARNING-BASED DAMAGE DETECTION IN LIGHTWEIGHT STRUCTURES
***Georgios Dadoulis**, George Manolis, Konstantinos Katakalos, Kosmas Dragos, Kay Smarsly*

COMPDYN TS 31 - III
SEISMIC RISK AND DAMAGE ASSESSMENT
Wednesday 14:30 - 16:30
Templars

Chair: *Mariano Di Domenico, Marco Andreini*

C 21344 ANALYTICAL ASSESSMENT OF SEISMIC DAMAGE AND USABILITY OF RC RESIDENTIAL BUILDINGS BY PERIOD ELONGATION
***Mariano Di Domenico**, Paolo Ricci, Gerardo M. Verderame*

C 20712 SEISMIC VULNERABILITY ASSESSMENT OF CONCRETE BLOCK CONFIGURATIONS FOR RADIATION SHIELDING
*Luca Sironi, **Marco Andreini**, Ziran Zhou, José Andrade, Pierino Lestuzzi, Edward Andò, Frédéric Dubois, Filippo Dacarro, Davide Bolognini*

C 20967 SEISMIC FRAGILITY AND EXPECTED DAMAGE OF MASONRY SCHOOL BUILDINGS IN ITALY
***Elisa Saler**, Francesca da Porto*

C 21097 REDUCED ORDER MODELS TO ESTIMATE SEISMIC RISK OF UNREINFORCED MASONRY DWELLINGS
***Ana Maria Zapata-Franco**, Yeudy Felipe Vargas-Alzate, José Ramón Gonzalez-Drigo, Rodolfo Javier Tirado-Gutiérrez*

C 21314 EARTHQUAKE NATECH RISK: NUMERICAL ANALYSIS OF FLOATING ROOF AND SEALING SYSTEM IN CYLINDRICAL STORAGE TANKS
***Michela Salimbeni**, Maurizio De Angelis, Mariano Ciucci*

C 21407 METRICS FOR EVALUATING THE SEISMIC VULNERABILITY OF TELECOMMUNICATION NETWORKS
***Alessandro Cardoni**, Gian Paolo Cimellaro*

COMPDYN MS 17 - II
STEEL JOINTS BEHAVIOR UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS
Wednesday 14:30 - 16:30
Kallirhoe 1

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

Chair: *Roberto Tartaglia, Mario D'Aniello*

C 20893 DESIGN FOR ROBUSTNESS OF A PILOT BUILDING EQUIPPED WITH DISSIPATIVE FREE FROM DAMAGE STEEL CONNECTIONS
***Tudor Golea**, Roberto Tartaglia, Massimo Latour, Mario D'Aniello, Jean-François Demonceau, Raffaele Landolfo, Vincenzo Piluso*

C 20439 SEISMIC ASSESSMENT OF THE STEEL MOMENT RESISTING FRAME EQUIPPED WITH FRICTION BEAM-TO-COLUMN JOINTS
***Mario D'Aniello**, Arash Poursadrollah*

C 20585 SEISMIC STRENGTHENING OF AN EXISTING RC FRAME BUILDING DESIGNED FOR GRAVITY LOADS
***Alessandro Prota**, Gianmaria Di Lorenzo*

C 20855 SINGLE AND MULTI-HAZARD ROBUSTNESS ASSESSMENT OF MULTI-STORY STEEL FRAME BUILDINGS
***Florea Dinu**, Calin Neagu, Dan Dubina*

C 20629 FATIGUE STRENGTH EVALUATION OF RIVETED SHEAR SPLICES
Annarosa Lettieri

COMPDYN MS 7 - II
SUSTAINABLE STRENGTHENING INTERVENTIONS TO PREVENT FAILURE IN UNREINFORCED MASONRY STRUCTURES AND INFRASTRUCTURES

Wednesday 14:30 - 16:30

Kallirhoe 2

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

C 20470 EQUIVALENCE OF DAMPING PROPERTIES OF DISSIPATIVE DEVICES FOR MITIGATING THE SEISMIC RISK OF RIGID BLOCKS
***Linda Giresini**, Omar AlShawa, Luca Umberto Argiento, Claudia Casapulla*

C 21288 A TWO-STEP APPROACH FOR THE SEISMIC ASSESSMENT OF MASONRY STRUCTURES ACCOUNTING FOR THE ACTUAL MASONRY PATTERN
*Simon Szabò, **Marco F. Funari**, Antonio Maria D'Altri, Stefano de Miranda, Paulo B. Lourenço*

C 20817 NUMERICAL DYNAMIC ANALYSIS OF A MASONRY TRIUMPHAL ARCH: COMPARISON OF DIFFERENT STRENGTHENING CONFIGURATIONS
*Vieri Cardinali, Barbara Pintucchi, Marco Tanganelli, **Francesco Trovatelli***

C 20979 OUT-OF-PLANE RESPONSE OF MASONRY CHURCH FACADES INCLUDING P-DELTA EFFECTS
***Valeria Cusmano**, Bartolomeo Pantò, Claudia Casapulla, Ivo Caliò*

C 21294 AN APPROACH FOR DERIVING FRAGILITY CURVES OF MASONRY BUILDINGS IN AGGREGATES
***Valentina Cima**, Valentina Tomei, Ernesto Grande, Maura Imbimbo*

C 20094 FRAGILITY ASSESSMENT OF RC BUILDINGS IN SOUTHERN SPAIN BASED ON NEURAL NETWORK PREDICTIONS
***Jaime de Miguel-Rodríguez**, María Victoria Requena-García-Cruz, Emilio Romero-Sánchez, Antonio Morales-Esteban*

COMPDYN TS 5 - II
DYNAMICS OF CONCRETE AND MASONRY STRUCTURES

Wednesday 14:30 - 16:30

Abbey

Chair: *Junji Kiyono, Amedeo Gregori*

C 20085 INVESTIGATION OF FAILURE OCCURRENCE MECHANISM OF HISTORIC MASONRY BUILDINGS AND PERFORMANCE OF REINFORCEMENT MEASURES USING DEM
***Junji Kiyono**, Aiko Furukawa*

C 20814 NUMERICAL MODELLING OF POORLY DETAILED EXISTING RC BEAM-COLUMN JOINTS
*Michele Angiolilli, **Amedeo Gregori**, Lorenzo Bizzarri, Caterina D'Agostino, Edoardo Ciuffetelli, Alfredo Peditto, Pasqualino Gualtieri*

C 20724 ENERGY LOSS MECHANISMS OF ROCKING BLOCKS: EXPERIMENTAL OBSERVATIONS
***Georgios Vlachakis**, Carla Colombo, Anastasios I. Giouvanidis, Nuno Mendes, Nathanaël Savalle, Paulo B. Lourenço*

C 20768 DYNAMIC BEHAVIOUR OF A STRENGTHENED POINTED ARCH TESTED ON A SHAKING TABLE
***Paulo Šćulac**, Nina Čeh, Matei Cukarić*

C 20779 MATERIAL TESTING OF MICRO-CONCRETE AND 3D-PRINTED REINFORCEMENT FOR USE IN SMALL-SCALE SEISMIC TESTING OF RC STRUCTURES
***Medhat Elmorsy**, Rafal Wrobel, Christian Leinenbach, Michalis F. Vassiliou*

UNCECOMP TS 21
COMPUTATIONAL STOCHASTIC MECHANICS

Wednesday 14:30 - 16:30 | **Ground**

Chair: *Daniele E. Schiavazzi*

U 20032 ENSEMBLE SOLVERS AND SINCHRONIZATION-AVOIDING DATA-DRIVEN ACCELERATION FOR CARDIOVASCULAR MODELING UNDER UNCERTAINTY
*Guoxiang G. Tong, **Daniele E. Schiavazzi***

U 19632 CONVOLUTIONAL CONDITIONAL VARIATIONAL AUTOENCODERS AS SURROGATES OF HIGH-FIDELITY SHIP HULL STRUCTURAL MODELS
***Nicholas Silionis**, Konstantinos Anyfantis*

U 19649 PHYSICS INFORMED NEURAL NETWORKS TO MODEL THE HYDRO-MORPHODYNAMICS OF MANGROVE ENVIRONMENTS
***Majdi Fanous**, Alireza Daneshkhah, Juntao Yang, Jonathan M. Eden, Simon See, Vasile Palade*

U 19690 PRECONDITIONED 4D-VAR DATA-ASSIMILATION OF TURBULENT FLOW FIELDS WITH THE AID OF ATMOSPHERIC ANALYTICAL MODELS
***Ahmed Alreweny**, Stefan Vandewalle, Johan Meyers*

U 19828 A BAYESIAN APPROACH TO MODELING FINITE ELEMENT DISCRETIZATION ERROR
***Anne Poot**, Pierre Kerfriden, Iuri Rocha, Frans van der Meer*

U 19829 ROBUST TOPOLOGY OPTIMIZATION FOR FIBER-REINFORCED COMPOSITES UNDER MATERIAL UNCERTAINTY
***Konstantinos-Iason Ypsilantis**, Matthias Faes, Jan Ivens, David Moens*

COMPDYN MS 5
REPAIR AND RETROFIT OF STRUCTURES

Wednesday 14:30 - 16:30 | **Room 1A**

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

C 20066 **KEYNOTE:** REVIEW OF RETROFIT AND STRENGTHENING STRATEGIES USED IN BUILDINGS IN MEXICO CITY AFTER STRONG EARTHQUAKES
***Arturo Tena-Colunga**, Héctor Hernández-Ramírez, Eber A. Godínez-Domínguez*

C 20757 COMPUTER AIDED DESIGN OF FRP STRENGTHENING FOR EXISTING RC BEAM-COLUMN JOINTS
***Ciro Del Vecchio**, Marco Di Ludovico, Alberto Balsamo, Andrea Prota*

C 21115 PSEUDODYNAMIC TESTING OF A FULL-SCALE MASONRY-INFILLED RC BUILDING
*Stylianos Kallioras, Daniel Pohoryles, **Dionysios Bournas**, Francisco Molina, Pierre Pegon*

C 20577 CONTRIBUTION OF FLAX-TRM SYSTEMS TO THE SHEAR RESISTANCE OF RETROFITTED MASONRY WALLS
***Niki Trochoutsou**, Kypros Pilakoutas, Maurizio Guadagnini*

C 20391 SIMPLIFIED ANALYTICAL/MECHANICAL PROCEDURE FOR THE RESIDUAL CAPACITY ASSESSMENT OF EARTHQUAKE-DAMAGED REINFORCED CONCRETE FRAMES
*Michele Matteoni, **Livio Pedone**, Simone D'Amore, Stefano Pampanin*

C 21292 ALTERNATIVE RETROFIT STRATEGIES FOR SEISMIC RISK-REDUCTION: STUDYING THE EFFECTIVENESS OF LOW-DAMAGE EXTERNAL EXOSKELETONS
***Simone D'Amore**, Livio Pedone, Stefano Pampanin*

COMPDYN TS 17 - II
PERFORMANCE-BASED EARTHQUAKE ENGINEERING
Wednesday 14:30 - 16:30
Room 1B

Chair: *Grigorios Tsinidis, Juan Manuel Mayoral*

C 21450 PROBABILISTIC SEISMIC DEMAND MODELS FOR THE ASSESSMENT OF UNDERGROUND STRUCTURES
***Grigorios Tsinidis**, Anna Karatzetzou, Sotiria Stefanidou*

C 20861 DAMPING ASSESSMENT OF BRIDGES FOR PERFORMANCE BASE DESIGN
***Juan Manuel Mayoral**, Mauricio Pérez*

C 20562 COMPARISON OF SEISMIC RESPONSES OF DUCTILE REINFORCED CONCRETE MOMENT RESISTING FRAMES USING NONLINEAR AND EQUIVALENT LINEAR SITE RESPONSE ANALYSIS
***Minsun Kim**, Jong-Su Jeon*

C 20670 INVESTIGATING THE EFFICIENCY AND THE SUFFICIENCY OF IMS FOR THE PROBABILISTIC SEISMIC ASSESSMENT OF THE POUNDING EFFECT BETWEEN ADJACENT RC STRUCTURES
***Maria Flenga**, Maria Favvata*

C 21161 DEVELOPMENT OF SEISMIC LOSS FUNCTION OF SYSTEM MODULES OF NON-SEISMIC DESIGNED RC SCHOOL BUILDING FOR REGIONAL SEISMIC LOSS ASSESSMENT
***HakJong Chang**, Insub Choi, JunHee Kim, Sangjin Hahn*

COMPDYN MS 24 - II
ADVANCES IN SEISMIC ASSESSMENT AND INTEGRATED RETROFITTING FOR ENVELOPES OF RC
Wednesday 14:30 - 16:30
Room 2A

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

C 20740 DEVELOPING STOREY LOSS FUNCTIONS FOR EVALUATION OF SEISMIC RISK IN ITALIAN RESIDENTIAL BUILDING TYPOLOGIES
***Gianrocco Mucedero**, Daniele Perrone, Ricardo Monteiro*

C 20795 SIMPLIFIED ASSESSMENT OF COMBINED INTERVENTION FOR THE SEISMIC AND ENERGETIC RETROFIT OF A SCHOOL BUILDING IN PADUA (ITALY)
***Giacomo Piredda**, Enrico Prataviera, Laura Carnieletto, Michele de Carli, Francesca da Porto*

C 20830 RC FRAMES WITH MASONRY INFILLS WITH AND WITHOUT OPENINGS: EXPERIMENTAL AND NUMERICAL RESULTS
***Aleksa Milijaš**, Bogdan Šakić, Marko Marinković, Christoph Butenweg, Matija Gams, Sven Klinkel*

C 21207 EXPERIMENTAL CALIBRATION OF THE IP BEHAVIOR OF STRENGTHENED INFILL WALLS AND SEISMIC ANALYSIS INCLUDING IP/OOP EFFECTS
***Marco Gaspari**, Marco Donà, Francesca da Porto*

UNCECOMP MS 2 - II
LEARNING FROM SMALL DATA: DATA-DRIVEN METHODS AND MACHINE LEARNING FOR UNCERTAINTY QUANTIFICATION IN ENGINEERING APPLICATIONS
Wednesday 14:30 - 16:30
Room 2B

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

U 19637 ADAPTIVE POLYNOMIAL CHAOS REGRESSION FOR VECTOR-VALUED MODEL OUTPUTS: APPLICATION TO ELECTRIC MACHINE SIMULATION
Dimitrios Loukrezis

U 19614 AERO-ACOUSTIC LINER IMPEDANCE METAMODEL CONSTRUCTION FROM A SMALL DATASET USING PROBABILISTIC LEARNING AND NEURAL NETWORKS
***Amritesh Sinha**, Christophe Desceliers, Christian Soize, Guilherme Cunha*

U 19932 A BAYESIAN SURROGATE FRAMEWORK FOR THE OPTIMISATION OF HIGH-DIMENSIONAL COMPOSITES FORMING PROCESS
***Siyuan Chen**, Adam Thompson, Tim Dodwell, Stephen Hallett, Jonathan Belnoue*

UNCECOMP MS 13 - I
SOFTWARE FOR UNCERTAINTY QUANTIFICATION

MS Organizers: *Stefano Marelli, Edoardo Patelli, Dirk Pflüger*

U 20329 UQPY: A PYTHON TOOLBOX FOR UNCERTAINTY QUANTIFICATION IN PHYSICAL AND ENGINEERING SYSTEMS
***Dimitrios Giovanis**, Audrey Olivier, Dimitrios Tsapetis, Michael Shields*

U 19979 UQLAB & UQ[PY]LAB - STATUS UPDATE AND DEVELOPMENT PERSPECTIVES
***Adéla Hlobilová**, Christos Lataniotis, Stefano Marelli, Bruno Sudret*

U 19778 OPENTURNS AND PERSALYS: OPEN-SOURCE SOFTWARES FOR ADVANCED UNCERTAINTY QUANTIFICATION
***Julien Pelamatti**, Joseph Muré, Michaël Baudin, Vincent Chabridon*

COMPDYN MS 26 - II
NON-DETERMINISTIC MODEL UPDATING AND HEALTH MONITORING WITH UNCERTAINTY TREATMENT
Wednesday 14:30 - 16:30
Room 3A

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

C 20230 CORRELATION BETWEEN THE FREQUENCY PARAMETERS AND THE RATIO BETWEEN PGA, PGV, AND PGD
***Guan Chen**, Ruohan Wang, Chengxin Feng, Kang Liao, Michael Beer*

C 21057 UNCERTAINTY QUANTIFICATION IN THE CONSTITUTIVE BEHAVIOR OF HDRBS
***José A. Gallardo**, Juan C. de la Llera, Katrin Beyer*

C 21507 GLOBAL RELIABILITY EVALUATION OF A HIGH-PIER BRIDGE UNDER COMPLEX GROUND MOTIONS
Zixin Liu

UNCECOMP TS 20
WAVE PROPAGATION IN MICRO-STRUCTURED RANDOM MEDIA

U 20012 MECHANICAL PROPERTIES ESTIMATION OF STANDARD AND LIGHTWEIGHT CONCRETE THROUGH THE ELASTIC WAVES PROPAGATION
*Jacopo Marazzani, **Nicola Cavalagli**, Marco Breccolotti, Vittorio Gusella*

U 19608 ANALYSIS OF THE INFLUENCE OF SPATIALLY DISTRIBUTED MATERIAL PROPERTIES ON THE GUIDED ULTRASONIC WAVE PROPAGATION IN A FIBER METAL LAMINATE
***Natalie Rauter**, Tom Kluge, Tilmann Barth*

U 20041 ON THE ULTRASONIC WAVE PROPAGATION IN MULTIPHASE RANDOM POLYCRYSTALS
***Shahram Khazaie**, Ningyue Sheng, Sylvain Fréour, Mathilde Chevreuil*

UNCECOMP TS 16 - I
SYSTEM RELIABILITY ANALYSIS, DESIGN AND RISK ASSESSMENT
Wednesday 14:30 - 16:30
Room 3B

Chair: *Abhinav Gupta*

U 20354 **KEYNOTE:** RISK-INFORMED DECISION-MAKING IN VERIFICATION AND VALIDATION UNDER UNCERTAINTY
*Saran Bodda, **Abhinav Gupta***

U 19880 ROBUST DESIGN OPTIMIZATION UNDER EPISTEMIC UNCERTAINTY USING ADAPTIVE KRIGING AND EXTREME VALUE DISTRIBUTIONS
***Augustin Persoons**, Conradus Van Mierlo, David Moens*

U 19596 EFFECT OF RANDOM PARAMETERS IN NONLINEAR REGRESSION ON THE OPTIMAL EXPERIMENTAL DESIGN
Daniela Jaruskova

U 19679 D-VINE-BASED SUBSET SIMULATION FOR RUNWAY OVERRUNS
***Hassan Alnasser**, Claudia Czado*

U 19786 EVALUATING POLYMORPHIC UNCERTAIN QUANTITIES USING INFORMATION REDUCTION MEASURES FOR STRUCTURAL DESIGN PROCEDURES
***Maria Böttcher**, Wolfgang Graf, Michael Kaliske*

COMPDYN TS 26
SOUND AND VIBRATION

Wednesday 14:30 - 16:30

Room 4A

Chair: *Aleksandar Zhelyazkov*

C 21104 CASE STUDY APPLICATIONS OF PERFECTLY MATCHED LAYERS IMPLEMENTED IN THE ANALYSIS OF VIBRATIONS INDUCED BY TRAIN PASSING
***Aleksandar Zhelyazkov**, Hanno Töll, Dieter Pichler*

C 20063 ACTIVE NOISE CONTROL OF AIR CONDITIONING SYSTEM NOISE
*Orhun Okcu, Kanghyun An, **Sang-Kwon Lee***

C 20798 EFFECT OF DEEP FOUNDATION ELEMENTS ON TRANSFER MOBILITIES FOR GROUND-BORNE VIBRATIONS IN URBAN RAILWAY TUNNELS
***Theodora Makrypidi**, Charisis Chatzigogos, Stefania Gobbi, Pierre-Alain Nazé*

C 21392 MODAL CHARACTERIZATION AND ROAD ROUGHNESS RECONSTRUCTION USING DYNAMIC VEHICLE ACCELERATIONS AND ANNS
***Kais Douier**, Mohammed F. M. Hussein, Jamil Renno*

COMPDYN TS 27 - II
STEEL STRUCTURES

Wednesday 14:30 - 16:30

Room 4B

Chair: *Amirali Sadeqi*

C 21449 DEVELOPMENT OF A SIMPLIFIED BEAM MODEL FOR TUBULAR JOINTS IN JACKET STRUCTURES
*Antonio Sindoni, **Amirali Sadeqi**, Jens Henrik Nielsen, Evangelos Katsanos*

C 21226 ADVANCED OPTIMIZATION PROCESSES FOR THE DESIGN OF 3D-PRINTED METAL DAMPERS
***Francesca Romana Andreacola**, Giuseppe Brando*

C 21378 IMPROVING THE PERFORMANCE OF I-SHAPED DAMPERS USING STIFFENERS
*Ahmad Jabbar Hussain Alshimmeri, Denise-Penelope N. Kontoni, **Ali Ghamari***

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

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

U 19765 MULTILEVEL AND MULTIGRID METHODS FOR SOLVING HENRY PROBLEM WITH UNCERTAIN COEFFICIENTS
***Alexander Litvinenko**, Dmitry Logashenko, Raul Tempone, Ekaterina Vasilyeva, Gabriel Wittum*

U 19798 ACCELERATED INTERACTING PARTICLE SYSTEMS WITH LOW-RANK TENSOR COMPRESSION FOR BAYESIAN INVERSION
***Martin Eigel**, Robert Gruhlke, David Sommer*

U 19799 ADAPTIVE NEURAL NETWORKS FOR PARAMETRIC PDES
***Janina Schütte**, Martin Eigel*

16:30-17:00
Coffee Break

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

Wednesday 17:00 - 19:00

Olympia

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

U 19817 REDUCED-ORDER MODEL FOR MICROSCALE ATMOSPHERIC DISPERSION COMBINING MULTI-FIDELITY LES AND RANS DATA
Bastien X. Nony, Mélanie C. Rochoux, Thomas Jaravel, ***Didier Lucor***

U 20016 MULTI-FIDELITY BAYESIAN INFERENCE OF CONCRETE DAMAGE PLASTICITY MODEL PARAMETERS FROM A NEW EFFICIENT TEST ON PASSIVELY CONFINED CONCRETE CYLINDERS
Anna Kučerová*, Jan Sýkora, Petr Havlásek, Daniela Jarušková, Milan Jirásek*

U 19811 MULTI-SCALE COMPOSITE RELIABILITY-BASED DESIGN OPTIMIZATION FOR AEROELASTIC APPLICATIONS
Ludovic Coelho*, Nicolo Fabbiane, Christian Fagiano, Cédric Julien, Roger Ballester, Didier Lucor*

U 19933 DEEP LEARNING-BASED DATA ASSIMILATION FOR NONLINEAR AEROELASTIC PROBLEMS
Avicene Samir Chaarane*, Jean-Camille Chassaing, Taraneh Sayadi*

U 20006 MESOSCALE PARAMETER ESTIMATION BY USING BAYESIAN APPROACH AND DISCRETE LATTICE ELEMENT MODEL WITH EMBEDDED STRONG DISCONTINUITIES
Mijo Nikolić*, Simona Dobrilla, Matteo Lunardelli, Dirk Lowke, Bojana Rosić*

U 20362 FOURIER NEURAL OPERATOR SURROGATE MODEL TO PREDICT 3D SEISMIC WAVES PROPAGATION
Fanny Lehmann*, Filippo Gatti, Michaël Bertin, Didier Clouteau*

U 19652 DEEP-LEARNING-ASSISTED MULTI-PHYSICS AND MULTI-SCALE DATA ASSIMILATION
Sibo Cheng*, Rossella Arcucci*

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

Wednesday 17:00 - 19:00

Attica

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

C 20883 STUDYING THE PERFORMANCE OF STONE MASONRY ARCH BRIDGES EMPLOYING IN-SITU MEASUREMENTS AND NUMERICAL PREDICTIONS
George Manos, ***Konstantinos Katakalos****, Lampros Kotoulas, Lazaros Melidis*

C 20885 LIMIT-STATE RESPONSE OF STONE MASONRY USED IN THE CONSTRUCTION OF CULTURAL HERITAGE IN GREECE
George Manos, Konstantinos Katakalos, ***Lampros Kotoulas****, Lazaros Melidis*

C 20742 SHEAR RETROFITTING OF REINFORCED CONCRETE T-BEAMS USING CARBON FIBER-REINFORCED POLYMER (FRP) ROPES AND U-SHAPED SHEETS - TESTS AND FRP DEBONDING FAILURE IDENTIFICATION
Adamantis Zapris, Violetta Kytinou, George Sapidis, ***Constantin Chalioris****, Chris Karayannis*

C 20759 SHAKING TABLE TESTS ON FULL SCALE TWO-FLOOR STEEL FRAMED STRUCTURES – DESIGN AND PRELIMINARY NUMERICAL INVESTIGATIONS
Georgios Balaskas*, Cristian Vulcu, Benno Hoffmeister, Christoph Butenweg*

C 20886 REINFORCED MASONRY PIERS BUILT WITH A NOVEL CLAY MASONRY UNITS UNDER SEISMIC-TYPE LOADS
*George Manos, **Lazaros Melidis**, Konstantinos Katakalos*

C 22212 EFFECT OF THE SLAB ON THE INELASTC RESPONSE OF REINFORCED CONCRETE BEAM-COLUMN JOINTS: A NUMERICAL INVESTIGATION
*Charoula D. Zaki, **Vassilis K. Papanikolaou***

COMPDYN MS 49
SEISMIC RESPONSE OF MASONRY CROSS VAULTS: SHAKING TABLE TESTS AND NUMERICAL VALIDATIONS

Wednesday 17:00 - 19:00

Templars

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

C 21040 NUMERICAL PREDICTION OF THE SEISMIC BEHAVIOUR OF A MASONRY VAULT MOCK-UP USING THE NOSA-ITACA CODE
Daniele Pellegrini

C 21270 A BLOCK-BASED NUMERICAL SIMULATION TECHNIQUE FOR MASONRY CROSS-VAULTS SUBJECTED TO EARTHQUAKE EXCITATION
*Prabakaran Kesavan, **Massimo Petracca**, Krishnachandran Sethumathavan, Arun Menon, Guido Camata*

C 21300 NON-LINEAR FINITE ELEMENT ANALYSIS OF MASONRY CROSS VAULT
***Marialaura Malena**, Mario Lorello, Gianmarco de Felice*

C 21196 BLIND PREDICTION OF SHAKE TABLE TESTS ON A FULL-SCALE UNSTRENGTHENED MASONRY CROSS VAULT: COMBINED FINITE-DISCRETE ELEMENT MODEL
***Omar AlShawa**, Domenico Liberatore, Luigi Sorrentino*

C 21224 NUMERICAL INVESTIGATION ON THE SEISMIC RESPONSE OF A MASONRY CROSS VAULT BASED ON THE DISCRETE MACRO-ELEMENT METHOD
***César Chácara**, Bartolomeo Pantò, Francesco Cannizzaro, Davide Rapicavoli, Ivo Caliò*

C 21225 SEISMIC TESTING OF A FULL SCALE MASONRY GROIN VAULT – A BLIND PREDICTION COMPETITION
***Nicoletta Bianchini**, Chiara Calderini, Nuno Mendes, Paulo Candeias, Paulo B. Lourenço*

C 21272 SIMPLIFIED EVALUATION FOR THE SERA-TA BLIND PREDICTION: SEISMIC BEHAVIOR OF MASONRY CROSS VAULTS
*Giancarlo Ramaglia, **Gian Piero Lignola**, Andrea Prota*

COMPDYN MS 17 - III
STEEL JOINTS BEHAVIOR UNDER SEISMIC, FATIGUE AND ROBUSTNESS ACTIONS

Wednesday 17:00 - 19:00

Kallirhoe 1

MS Organizers: *Roberto Tartaglia, Mario D'Aniello, Massimo Latour*
Chair: *Alessia Campiche, Aldo Milone*

C 21178 THEORETICAL AND EXPERIMENTAL EVALUATION OF SEISMIC BEHAVIOUR OF CFS WALL WITH UHS STEEL BRACING
Alessia Campiche

C 20397 CYCLIC PERFORMANCE OF HOT-DRIVEN RIVETED CONNECTIONS
Aldo Milone

C 20463 PROBABILISTIC ANALYSIS OF THE MR-FRAMES EQUIPPED WITH FREEDAM DAMPERS
***Maria Maglio**, Rosario Montuori, Elide Nastri, Vincenzo Piluso, Alessandro Pisapia*

C 20396 PREDICTION OF THE STATIC AND FATIGUE PERFORMANCE OF PITTED STEEL WIRE ROPES
Aldo Milone

C 20853 RETROFITTING OF AN EXISTING BUILDING WITH CONCRETE WALLS AND STEEL FRAMES FOR GRAVITY LOADS AND PROGRESSIVE COLLAPSE RESISTANCE
*Florea Dinu, **Calin Neagu**, Dan Dubina, Constantin Stanciu*

COMPDYN MS 29
SOFT COMPUTING AND ARTIFICIAL INTELLIGENCE TECHNIQUES IN STRUCTURAL ENGINEERING

Wednesday 17:00 - 19:00

Kallirhoe 2

MS Organizers: *Vagelis Plevris, Usama Ebead, Tadesse G. Wakjira*
Chair: *Fabio Di Trapani, Ambrosios-Antonios Savvides*

C 21466 CLASSIFICATION OF WALL DEFECTS FOR MAINTENANCE PURPOSES USING IMAGE PROCESSING
***Waqas Qayyum**, Rana Ehtisham, Vagelis Plevris, Junaid Mir, Afaq Ahmad*

C 21366 COMPUTATIONAL INTELLIGENCE-BASED OPTIMIZATION FOR SUSTAINABLE SEISMIC RETROFIT OF EXISTING REINFORCED CONCRETE AND MASONRY STRUCTURES
***Fabio Di Trapani**, Antonio Pio Sberna, Cristoforo Demartino, Giuseppe Carlo Marano*

C 20925 MACHINE LEARNING APPROACH FOR THE ESTIMATION OF THE FAILURE OF SHALLOW FOUNDATIONS OF COHESIVE GEOMATERIALS AND THE CORRESPONDING NEURAL NETWORKS
***Ambrosios-Antonios Savvides**, Leonidas Papadopoulos*

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

C 21401 A NEW DEEP LEARNING ACCELERATED BLAST LOADING EFFECT ANALYSIS OF FRP RETROFITTED CONCRETE SLAB
*Arya Prakash Padhi, **Vaibhav Bhandari**, Anupam Chakrabarti, Rajib Chowdhury*

COMPDYN TS 5 - III
DYNAMICS OF CONCRETE AND MASONRY STRUCTURES

Wednesday 17:00 - 19:00

Abbey

Chair: *Petros Sideris*

C 20843 FINITE ELEMENT MODELING OF 3D PRINTED CONCRETE WALLS UNDER MECHANICAL LOADS
Hao Chen, Mohammad Aghajani Delavar, ***Petros Sideris***

C 21972 DYNAMIC CHARACTERIZATION OF THE CIRCUS MAXIMUS ARCHEOLOGICAL SITE
Amir Reza Elahi, Alessandro Cardoni, ***Cosimo Pellecchia****, Marialetizia Buonfiglio, Federica Michela Rossi, Elena Federico, Fabio Pacciani, Gian Paolo Cimellaro*

C 20689 ADVANCES IN 3D NUMERICAL SIMULATION OF SEISMIC RESPONSE OF SAFETY-RELATED NUCLEAR STRUCTURES
Fernando Rastellini*, Junior Ramirez, José Manuel Gonzalez, Alex H. Barbat, Cuauhtémoc Escudero, Yeudi F. Vargas, Luis G. Pujades*

C 20806 STRUCTURAL PERFORMANCE AND HUMAN COMFORT ASSESSMENT OF RC CANTILEVER GRANDSTANDS: THE CASE OF THE SECOND RING OF SAN SIRO MEAZZA STADIUM IN MILAN
Martina Cogliano*, Nicola Scattarreggia, Matteo Moratti, Gian Michele Calvi*

COMPDYN MS 48
RECENT ADVANCES IN GROUND MOTION SELECTION AND SCALING TECHNIQUES

Wednesday 17:00 - 19:00

Ground

MS Organizers: *Shaghayegh Karimzadeh, Manolis Georgioudakis, Michalis Fragiadakis*
Chair: *Shaghayegh Karimzadeh, Manolis Georgioudakis*

C 20906 EVALUATION OF SIMULATED GROUND MOTIONS FOR SEISMIC ASSESSMENT OF A STEEL FRAME STRUCTURE USING MULTI-CRITERIA SELECTION AND SCALING APPROACH BASED ON EVOLUTIONARY ALGORITHMS
Manolis Georgioudakis*, Shaghayegh Karimzadeh, Michalis Fragiadakis, Paulo B. Lourenço*

C 20451 SEISMIC ASSESSMENT OF TYPOLOGICAL MASONRY BUILDINGS USING SIMULATED GROUND MOTION RECORDS: A CASE STUDY FOR AZORES, PORTUGAL
Shaghayegh Karimzadeh*, Vasco Bernardo, Sayed Mohammad Sajad Hussaini, Daniel Caicedo, Alexandra Carvalho, Paulo B Lourenço*

C 21071 QUAKEMANAGER: A COMPREHENSIVE SOFTWARE TOOL FOR GROUND MOTION SELECTION, MODIFICATION AND ANALYSIS
Mahmoud Hachem*, Bashar Abdo, Hamza Al-Jundi, Sohaib Al-Jundi, Bahaa Tayba, Bahaa Ghieh, Yousra Hachem, Khaled Chandab*

C 21269 SCALING GROUND MOTION RECORDS BY CONSIDERING THE INELASTIC RESPONSE OF SOILS
Yeudy F. Vargas-Alzate*, Ana M. Zapata-Franco, Rodolfo J. Tirado, Ramón Gonzalez-Drigo, Jean Vaunat*

C 21433 PERMANENT DISPLACEMENT DATABASE OF STRONG EARTHQUAKES IN TURKEY, AND AN ADJUSTED PREDICTIVE MODEL
Emrecan Adanır*, Gülüm Tanırcan*

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

Wednesday 17:00 - 19:00

Room 1A

MS Organizers: *Mohamed Ichchou, Pascal Fossat, Stephan Rinderknecht, Francesco Franco*
Chair: *George Markou*

C 20891 COMPOSITE GEARBOX HOUSING DESIGN AND ITS NVH ASSESSMENT
***Daniel Amaral**, Mohamed Ichchou, Pascal Fossat, Przemyslaw Kołakowski, Michelle Salvia*

C 20934 MITIGATION OF GEARBOX HOUSING VIBRATION USING INERTIAL MASS ACTUATORS
***Sherif Okda**, Sneha Rupa Nampally, Mauro Fontana, Rainer Nordmann, Stephan Rinderknecht, Tobias Melz*

C 21127 MODEL DEVELOPMENT TO EVALUATE ACTIVE CONTROL STRATEGIES FOR GEARBOX HOUSINGS
***Sneha Rupa Nampally**, Sherif Okda, Mauro Fontana, Rainer Nordmann, Stephan Rinderknecht*

COMPDYN TS 4
CONSTITUTIVE MODELLING

C 21078 A 3D FRACTURE ENERGY-BASED SMEARED CRACK APPROACH FOR THE NONLINEAR BEHAVIOR OF REINFORCED CONCRETE STRUCTURES
*Christos Mourlas, **George Markou**, Manolis Papadrakakis*

C 21227 MODELLING OF THE FULL-RANGE RESPONSE OF ABUTMENT-BACKFILL SYSTEMS
***Ioannis Mikes**, Andreas Kappos*

C 21124 MODELING THE INFLUENCE OF STRAIN-RATE IN SUPERELASTIC SHAPE MEMORY ALLOYS
Maria Ntina

COMPDYN-UNCECOMP MS 50
DATA DRIVEN METHODS AND ENGINEERING SOFTWARE FOR NEXT GENERATION HPC APPLICATIONS

Wednesday 17:00 - 19:00

Room 1B

MS Organizers: *Vissarion Papadopoulos, Kyriakos Giannakoglou, George Goumas*
Chair: *Vissarion Papadopoulos*

C 22693 SIMULATIONS OF CARBON-BASED COMPOSITES FOR THE DESIGN OF AUTOMOTIVE BUMPER
***Konstantinos Margaronis**, Vasileios Merevis, Rahul Banerjee, Ioannis Kalogeris, Philippe Mauri, Arijit Mallick, Stefanos Pyrialakos, Vissarion Papadopoulos, Martin Obstbaum, Victor Faessler*

C 22692 MSOLVE - A LOOSELY COUPLED MULTIPARADIGM HPC COMPUTATIONAL SIMULATION SUITE
***George Stavroulakis**, Yiannis Kalogeris, Gerasimos Sotiropoulos, Vissarion Papadopoulos*

U 20583 AI-SOLVE: FUSING LINEAR ALGEBRA WITH MACHINE LEARNING TO ACCELERATE THE SOLUTION OF LARGE-SCALE PARAMETRIZED SYSTEMS
***Ioannis Kalogeris**, Stefanos Nikolopoulos, George Stavroulakis, Vissarion Papadopoulos*

U 20586 AN ISO-XFEM FORMULATION FOR TOPOLOGY OPTIMIZATION OF BI-MATERIAL STRUCTURES
***Efstathia Chroni**, Serafeim Bakalakos, Gerasimos Sotiropoulos, Vissarion Papadopoulos, Manolis Papadrakakis*

U 20582 COMBINING MACHINE-LEARNING AND QUANTUM COMPUTING FOR FASTER CONVERGENCE OF VARIATIONAL ALGORITHMS IN LINEAR PARAMETRIC SYSTEMS OF EQUATIONS
Constantinos Atzarakis

COMPDYN MS 33
INSIGHT IN SEISMIC PERFORMANCE OF RETROFITTED BUILDINGS: FEASIBILITY AND EFFECTIVENESS OF INTERVENTION IN RC BUILDINGS

Wednesday 17:00 - 19:00 | ***Room 2A***

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

C 21394 IINFILL-FRAME INTERACTION: REFINED MODELLING FOR THE ANALYSIS AND THE ESTIMATION OF THE INTERNAL FORCES IN SEISMIC ASSESSMENT OF RC BUILDING STRUCTURES
***Fabio Di Trapani**, Marilisa Di Benedetto, Massimo Petracca, Guido Camata*

C 21164 PRELIMINARY RESULTS OF A SHAKING-TABLE DYNAMIC TEST ON A REPAIRED AND ENHANCED REINFORCED CONCRETE INFILLED STRUCTURE
***Riccardo R Milanesi**, Gabriele Guerrini, Davide Bolognini, Luca Grottoli, Filippo Dacarro, Paolo Morandi*

C 20620 INFLUENCE OF CLADDING PANELS RETROFIT ON THE SEISMIC RISK OF AN EXISTING PRECAST BUILDING
***Marius Eteme Minkada**, Marco Bosio, Andrea Belleri, Paolo Riva*

C 21238 COLD FORMED STEEL PANELS FOR THE SEISMIC STRENGHTENING OF EXISTING RC BUILDINGS
***Simone Labò**, Andrea Belleri, Michelle Gualdi, Atsushi Sato*

C 21273 IMPROVEMENT OF SEISMIC SAFETY BY LOCAL STRENGHTNING IN ITALIAN PRE-70 RESIDENTIAL RC BUILDINGS DESIGNED FOR GRAVITY LOADS
***Santa Anna Scala**, Maria Teresa De Risi, Carlo Del Gaudio, Gerardo Mario Verderame*

C 20824 NUMERICAL MODEL CALIBRATION OF A LOW IMPACT STRENGTHENING TECHNIQUE BASED ON BED-JOINTS SLIDING IN SEISMIC RETROFITTING OF MASONRY INFILLS
***Marco Vailati**, Amedeo Gregori, Federico Morelli, Giorgio Monti, Edoardo Ciuffetelli, Alfredo Peditto*

UNCECOMP MS 13 - II
SOFTWARE FOR UNCERTAINTY QUANTIFICATION

Wednesday 17:00 - 19:00 | ***Room 2B***

MS Organizers: *Stefano Marelli, Edoardo Patelli, Dirk Pflüger*
Chair: *Edoardo Patelli*

U 20039 **KEYNOTE:** AI TOOLS FOR HUMAN RELIABILITY ANALYSIS
Karl Johnson, Caroline Morais, ***Edoardo Patelli***

U 19810 UUNCERTAINTYQUANTIFICATION.JL: A NEW FRAMEWORK FOR UNCERTAINTY QUANTIFICATION IN JULIA
***Jasper Behrensdorf**, Ander Gray, Matteo Broggi, Michael Beer*

U 19868 UNCERTAINTY ANALYSIS WITH LAGUN ON AN INTERNAL COMBUSTION ENGINE FUELED WITH HYDROGEN
***Julien Steib**, Delphine Sinoquet, Karine Truffin, David Chazalviel*

COMPDYN TS 20
SEISMIC ISOLATION

Wednesday 17:00 - 19:00

Room 3A

Chair: *Antonello Salvatori, Lizhi Sun*

C 21400 EFFECTS OF FAR FAULT EARTHQUAKES IN RETROFITTED SEISMICALLY ISOLATED BUILDING
Antonello Salvatori

C 20103 MULTISCALE MAGNETO-MECHANICAL COUPLING OF MAGNETORHEOLOGICAL ELASTOMER ISOLATORS
Zhijian Hu, Leilei Xia, ***Lizhi Sun***

C 20455 VARIANTS OF VIBRO-ISOLATION IN TRAM TRACKS AND EVALUATION OF THEIR EFFECTIVENESS
Filip Pachla, Piotr Stecz, ***Tadeusz Tatara***

C 20614 DEVELOPMENT OF A COMPLIANT MECHANISM TO ISOLATE THE BASE VIBRATIONS AND MINIMIZE THE SHOCK RESPONSE USING AN OPTIMIZED DYNAMIC MATHEMATICAL MODEL
Kazım Yüksel*, Ata Muğan*

C 20839 NONLINEAR FINITE ELEMENT MODELING OF PRESTRESSED LEAD EXTRUSION DAMPERS
Furkan Çalım*, Ahmet Güllü, Cihan Soydan, Ercan Yüksel*

UNCECOMP TS 16 - II
SYSTEM RELIABILITY ANALYSIS, DESIGN AND RISK ASSESSMENT

Wednesday 17:00 - 19:00

Room 3B

Chair: *Marcin Kamiński*

U 20024 **KEYNOTE:** RELATIVE ENTROPY-BASED RELIABILITY ASSESSMENT OF HYBRID TELECOMMUNICATION SKELETAL TOWERS
Marcin Kamiński*, Rafał Bredow*

U 20353 FEATURE EXTRACTION FOR UNCERTAINTY QUANTIFICATION AND REDUCTION OF NOISE IN CONDITION MONITORING USING DEEP LEARNING
Harleen Sandhu, Saran Bodda, Serena Sauers, ***Abhinav Gupta***

U 19950 INFORMATION PROPAGATION METHOD FOR RELIABILITY ASSESSMENT IN COMPLEX NETWORKS
Temitope Ohiani*, Edoardo Patelli*

U 19998 INTRODUCTION OF FATIGUE DAMAGE IN RELIABILITY BASED DESIGN OPTIMIZATION METHOD USING SPECTRAL METHODS APPROACH
Nouha Lyagoubi*, Younes Aoues, Leila Khalij*

COMPDYN TS 30
WAVE PROPAGATION

Wednesday
17:00 - 19:00

Room 4A

Chair: *Takahiro Yamada*

C 21184 NUMERICAL PROPERTIES OF PRESSURE-STABILIZED LINEAR TETRAHEDRAL ELEMENT FOR WAVE PROPAGATION IN NEARLY INCOMPRESSIBLE ELASTICITY
Takahiro Yamada

C 20417 EFFECT OF DEBONDING ON GUIDED WAVE PROPAGATION IN STIFFENED COMPOSITE PLATE UNDER OPERATIONAL LOADING AND HYGROTHERMAL ENVIRONMENT
Akshay Prakash Kalgutkar*, Sauvik Banerjee*

C 21091 NUMERICAL ANALYSIS OF WAVE DISPERSION IN KELVIN-CELL BASED PERIODIC STRUCTURES FOR DYNAMIC APPLICATIONS
Lukas Kleine-Wächter*, Romain Rumpler, Peter Göransson, Huina Mao, Gerhard Müller*

C 20700 LATTICE DECOMPOSITION AND BANDGAP ANALYSIS OF LARGE-SPAN TRUSSES
Yongtao Bai, ***Xiaolei Li***

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

Wednesday
17:00 - 19:00

Room 4B

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

Chair: *Aku Kammonen*

U 19891 ADAPTIVE RANDOM FOURIER FEATURES BASED ON METROPOLIS SAMPLING
Aku Kammonen*, Jonas Kiessling, Petr Plecháč, Mattias Sandberg, Anders Szepessy*

U 19634 TOWARDS ADAPTIVE, NON-INTRISIVE AND CONVERGENT ALGORITHMS TO SOLVE PARAMETRIC PDES WITH UNBOUNDED COEFFICIENTS
Nando Farchmin*, Martin Eigel*

U 19976 LIKELIHOOD-FREE NONLINEAR DATA ASSIMILATION APPROACH USING MACHINE LEARNING-BASED APPROXIMATION OF CONDITIONAL EXPECTATION
Truong-Vinh Hoang*, Sebastian Krumscheid, Hermann G. Matthies, Raúl Tempone*

U 19833 STABLE LEAST SQUARES APPROXIMATION OF SOLUTIONS OF PARAMETRIC PDES
Martin Eigel, Anthony Nouy, ***Philipp Trunschke***