EASD
European Association
for Structural Dynamics

EURODYN 2020

23-26 November,
Streamed from Athens, Greece

EURODYN 2020

XI International Conference on Structural Dynamics

Conference Programme

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

European Association for Structural Dynamics

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Programme

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

PROGRAMME OVERVIEW

DAY 1 - MONDAY, NOVEMBER 23				
Athens Time	**Room 1**	**Room 2**	**Room 3**	**Room 4**
12:00-12:30	**OPENING**			
12:30-14:15	**PLENARY LECTURES** Yi Qing Ni, Geert Degrande, Tracy Kijewski-Correa			
14:15-15:00	**Mid-day Break**			
15:00-17:00	**TECHNICAL SESSIONS**			
	MS 9 STRUCTURAL CONTROL	**MS 14 - I** WIND INDUCED VIBRATIONS OF SLENDER STRUCTURES AND FATIGUE	**MS 28** UNCERTAINTIES ON MATERIALS AND ENVIRONMENTAL LOADS **MS 24 - I** SEISMIC PROTECTION OF STEEL STRUCTURES BY MEANS OF DISSIPATIVE SYSTEMS AND COMPONENTS	**MS 13** HUMAN INDUCED VIBRATIONS IN FLOORS, STAIRCASES AND STADIA **MS 17** VIBRATIONS DUE TO CONSTRUCTION AND INDUSTRIAL ACTIVITIES
17:00-17:10	**Break**			
17:10-19:10	**TECHNICAL SESSIONS**			
	MS 8 - I STRUCTURAL HEALTH MONITORING	**MS 14 - II** WIND INDUCED VIBRATIONS OF SLENDER STRUCTURES AND FATIGUE **MS 6** VEHICLE DYNAMICS	**MS 24 - II** SEISMIC PROTECTION OF STEEL STRUCTURES BY MEANS OF DISSIPATIVE SYSTEMS AND COMPONENTS **18:00-19:00** **Round Table MS 24**	**MS 35 - I** NEW TRENDS IN THE COMPUTATIONAL AND EXPERIMENTAL STRUCTURAL DYNAMICS FOR THE PRESERVATION OF HISTORICAL MASONRY STRUCTURES IN SEISMIC AREAS
19:10-19:20	**Break**			
19:20-21:20	**TECHNICAL SESSIONS**			
	MS 8 - II STRUCTURAL HEALTH MONITORING	**MS 29** BAYESIAN UPDATING, FILTERING AND INVERSION FOR DYNAMIC SYSTEMS	**MS 11 - I** BRIDGE DYNAMICS	**MS 35 - II** NEW TRENDS IN THE COMPUTATIONAL AND EXPERIMENTAL STRUCTURAL DYNAMICS FOR THE PRESERVATION OF HISTORICAL MASONRY STRUCTURES IN SEISMIC AREAS **20:00-21:00** **Round Table MS 35**

DAY 2 - TUESDAY, NOVEMBER 24				
Athens Time	**Room 1**	**Room 2**	**Room 3**	**Room 4**
10:00-12:00	**TECHNICAL SESSIONS**			
	MS 8 - III STRUCTURAL HEALTH MONITORING	**MS 20 - I** MOVING LOADS	**MS 11 - II** BRIDGE DYNAMICS **MS 19** BLAST AND IMPACT LOADS	**MS 38 - I** GENERAL SESSION ON STRUCTURAL DYNAMICS, STABILITY AND VIBRATIONS
12:00-12:10	**Break**			
12:10-14:10	**TECHNICAL SESSIONS**			
	MS 8 - I V STRUCTURAL HEALTH MONITORING	**MS 20 - II** MOVING LOADS **13:30-14:30** **Round Table MS 20**	**MS 12 - I** FOOTBRIDGE VIBRATIONS	**MS 38 - II** GENERAL SESSION ON STRUCTURAL DYNAMICS, STABILITY AND VIBRATIONS
14:10-15:10	**Mid-day Break**			
15:10-17:10	**TECHNICAL SESSIONS**			
	MS 8 - V STRUCTURAL HEALTH MONITORING **15:30-16:30** **Round Table MS 8**	**MS 5** DYNAMIC FLUID-STRUCTURE INTERACTION **MS 30 - I** RECENT ADVANCES IN PERFORMANCE-BASED ENGINEERING AND DESIGN OF STRUCTURES AND CIVIL INFRASTRUCTURE SYSTEMS SUBJECTED TO SINGLE OR MULTIPLE HAZARDS	**MS 12 - II** FOOTBRIDGE VIBRATIONS	**MS 38 - III** GENERAL SESSION ON STRUCTURAL DYNAMICS, STABILITY AND VIBRATIONS
17:10-17:20	**Break**			
17:20-19:20	**TECHNICAL SESSIONS**			
	MS 7 - I SYSTEM IDENTIFICATION AND DAMAGE DETECTION	**MS 30 - II** RECENT ADVANCES IN PERFORMANCE-BASED ENGINEERING AND DESIGN OF STRUCTURES AND CIVIL INFRASTRUCTURE SYSTEMS SUBJECTED TO SINGLE OR MULTIPLE HAZARDS	**MS 12 - III** FOOTBRIDGE VIBRATIONS **17:20-18:20** **Round Table MS 12**	**MS 38 - IV** GENERAL SESSION ON STRUCTURAL DYNAMICS, STABILITY AND VIBRATIONS
19:20-19:30	**Break**			
19:30-21:30	**TECHNICAL SESSIONS**			
	MS 7 - II SYSTEM IDENTIFICATION AND DAMAGE DETECTION	**MS 30 - III** RECENT ADVANCES IN PERFORMANCE-BASED ENGINEERING AND DESIGN OF STRUCTURES AND CIVIL INFRASTRUCTURE SYSTEMS SUBJECTED TO SINGLE OR MULTIPLE HAZARDS **20:30-21:30** **Round Table MS 30**	**MS 15 - I** DYNAMICS OF ON- AND OFF-SHORE WIND ENERGY STRUCTURES (WES)	**MS 27** STOCHASTIC DYNAMICS AND RELIABILITY ANALYSIS OF STRUCTURAL AND MECHANICAL SYSTEMS UNDER ENVIRONMENTAL EXCITATION **MS 37** CONSERVATION, RETROFIT AND STRENGTHENING OF EXISTING STRUCTURES: INNOVATIONS IN APPLIED METHODS AND MATERIALS

DAY 3 - WEDNESDAY, NOVEMBER 25				
Athens Time	**Room 1**	**Room 2**	**Room 3**	**Room 4**
10:00-12:00	**TECHNICAL SESSIONS**			
	MS 7 - III SYSTEM IDENTIFICATION AND DAMAGE DETECTION	**MS 16 - I** VIBRATION-BASED ASSESSMENT AND SHM OF CULTURAL HERITAGE STRUCTURES	**MS 15 - II** DYNAMICS OF ON- AND OFF-SHORE WIND ENERGY STRUCTURES (WES)	**MS 31 - I** EUROPEAN ETN "DYNAMIC VIRTUALISATION: MODELLING PERFORMANCE OF ENGINEERING STRUCTURES" (DYVIRT)
	11:00-12:00 **Round Table MS 7**			
12:00-12:10	**Break**			
12:10-14:10	**TECHNICAL SESSIONS**			
	MS 32 COMPUTATIONAL METHODS FOR STOCHASTIC DYNAMICS	**MS 16 - II** VIBRATION-BASED ASSESSMENT AND SHM OF CULTURAL HERITAGE STRUCTURES	**MS 15 - III** DYNAMICS OF ON- AND OFF-SHORE WIND ENERGY STRUCTURES (WES)	**MS 31 - II** EUROPEAN ETN "DYNAMIC VIRTUALISATION: MODELLING PERFORMANCE OF ENGINEERING STRUCTURES" (DYVIRT)
			12:10-13:10 **Round Table MS 15**	
14:10-15:10	**Mid-day Break**			
15:10-17:00	**SEMI-PLENARY LECTURES** Sotirios Natsiavas, Eleni Chatzi, Andrei Metrikine	**SEMI-PLENARY LECTURES** Joel P. Conte, Filippo Ubertini, Geert Lombaert		
17:00-17:10	**Break**			
17:10-19:10	**TECHNICAL SESSIONS**			
	MS 18 VIBRO-ACOUSTICS	**MS 10** ADVANCES ON INERTER-BASED STRUCTURAL VIBRATION CONTROL **MS 21** TRAFFIC INDUCED VIBRATIONS	**MS 34 - I** VIBRATION ABSORPTION	**MS 31 - III** EUROPEAN ETN "DYNAMIC VIRTUALISATION: MODELLING PERFORMANCE OF ENGINEERING STRUCTURES" (DYVIRT)
				17:10-18:10 **Round Table MS 31**
19:10-19:20	**Break**			
19:20-21:20	**TECHNICAL SESSIONS**			
	MS 23 ASSESSMENT OF INDUSTRIAL STRUCTURES AND INFRASTRUCTURE UNDER NATURAL HAZARDS **MS 25 - I** EXPERIMENTAL EARTHQUAKE ENGINEERING	**MS 26** UQ AND PROBABILISTIC LEARNING IN COMPUTATIONAL DYNAMICS	**MS 34 - II** VIBRATION ABSORPTION **MS 36** DAMPING MODELLING AND EXPERIMENTS	**MS 2 - I** NON-LINEAR DYNAMICS

DAY 4 - THURSDAY, NOVEMBER 26				
Athens Time	**Room 1**	**Room 2**	**Room 3**	**Room 4**
10:00-12:00	**TECHNICAL SESSIONS**			
	MS 25 - II EXPERIMENTAL EARTHQUAKE ENGINEERING	**MS 22 - I** DYNAMIC SOIL-STRUCTURE INTERACTION AND WAVE PROPAGATION	**MS 1 - I** ADVANCES IN COMPUTATIONAL STRUCTURAL DYNAMICS	**MS 2 - II** NON-LINEAR DYNAMICS
12:00-12:10	**Break**			
12:10-14:10	**TECHNICAL SESSIONS**			
	MS 25 - III EXPERIMENTAL EARTHQUAKE ENGINEERING	**MS 22 - II** DYNAMIC SOIL-STRUCTURE INTERACTION AND WAVE PROPAGATION	**MS 1 - II** ADVANCES IN COMPUTATIONAL STRUCTURAL DYNAMICS	**MS 2 - III** NON-LINEAR DYNAMICS
	13:10-14:10 **Round Table MS 25**		**MS 4 - I** DYNAMICS OF COMPOSITE MATERIALS	
14:10-15:10	**Mid-day Break**			
15:10-17:10	**TECHNICAL SESSIONS**			
	MS 33 NUMERICAL SIMULATIONS FOR EARTHQUAKE-RESILIENT SYSTEMS	**MS 22 - III** DYNAMIC SOIL-STRUCTURE INTERACTION AND WAVE PROPAGATION	**MS 4 - II** DYNAMICS OF COMPOSITE MATERIALS	**MS 2 - IV** NON-LINEAR DYNAMICS
		MS 3 DYNAMIC BUCKLING		**16:10-17:10** **Round Table MS 2**
17:10-17:20	**Break**			
17:20-18:00	**AWARDS - CLOSING**			

EURODYN 2020

Greetings from the Conference Co-Chairs

Dear colleagues and friends,

Welcome to the **XI International Conference on Structural Dynamics**, **EURODYN** organized under the auspices of the European Association for Structural Dynamics. The EURODYN Conferences have been established as the top scientific events worldwide in the area of theoretical, numerical and experimental structural dynamics and are highly anticipated every three years by the international community of structural dynamics.

For the sake of history, the seeds for the creation of EURODYN Conferences were sown here in Athens in 1988, during the First Greek-German Seminar on Structural Dynamics and Earthquake Engineering, when it was decided to establish the European Association for Structural Dynamics, as a joint European initiative of experts in structural dynamics, with the purpose of sponsoring and overseeing the organization of the EURODYN Conferences, scheduled to take place with a three-year interval. The first EURODYN Conference was held in Bochum in 1990, organized by the founding president of EASD Prof. Wilfried Kraetzig. Following Bochum, the next Conferences were held in Trondheim, Florence, Prague, Munich, Paris, Southampton, Leuven, Porto and in 2017 in Rome. For 2020, the EURODYN Conference would have taken place in Athens in June 2020.

However, in view of the first signs of the COVID-19 pandemic at the beginning of this year, we were forced to postpone the Conference at the end of November, with the anticipation that this postponement would give the opportunity to the participants to attend the Conference either physically or remotely. Unfortunately, contrary to what we had all hoped for, the COVID-19 pandemic was still around by the end of June, when we were left with no other choice but to abandon the idea of a hybrid Conference and instead organize a fully online event. This transition was very painful and created many administration complications. Despite these difficulties, EASD and the organizing committee have seen this sanitary crisis as an opportunity to organize a different type of event and to propose a new approach for scientific collaboration and communication that respects both the legacy of the Conference series and the health of the members of the international community of structural dynamics.

In fact, the organization of virtual events has been a common practice, during the COVID-19 pandemic. The conferences, like EURODYN, which have not been cancelled or postponed to the following years, abandoned the initial plans for in-person or hybrid gatherings and, instead turned into virtual online events. In-person Conferences have been an important component in the advancement of science, giving the opportunity to participants to exchange, among other, stimulating research discussions, during coffee breaks, meals and social gatherings, that occasionally have led to fruitful research collaborations or jointly funded projects. Virtual Conferences, on the other hand, have a number of merits that cannot be overlooked, such as the time and cost-savings, the carbon footprint reduction due to elimination of travelling, as well as the availability, during and after the conference, of all video-recorded presentations.

For EURODYN 2020, we did our best to deliver a successful virtual event, following the best practices of recent virtual conferences organized worldwide, based on a stimulating Technical Programme with innovative presentations, and Conference Proceedings, with high-quality full-length papers. Furthermore, in order to counter-balance the social interaction of an in-person event, a number of live Round-Table sessions have been organized on selected topics of great scientific interest, as well as chat sessions in the form of written Q&A discussions, available during the event and in the post-conference e-Library.

For this edition of EURODYN series, more than 1000 abstracts were submitted and among them 400 full-length papers were accepted for publication in the EASD Open Access Procedia, indexed by Scopus Database.

During the four-day virtual event, more than 400 presentations will take place in four parallel broadcastings. While nine plenary and semi-plenary talks will be delivered by distinguished researchers in the field of structural dynamics. The presentations will be complemented by eleven live Round-Table sessions in topics of great scientific interest.

On this occasion, we take the opportunity to thank the authors for submitting their contributions and for their efforts to respect the deadlines, the speakers for preparing their presentations, despite the difficulties they might have faced during the preparation of the pre-recorded lectures, as well as all participants attending this event from different parts of the world. Special thanks go to the 90 colleagues who actively participated in the organization of the 38 Minisymposia and to the Reviewers who, with their work, contributed to the scientific quality of the Conference Proceedings.

We would also like to particularly thank: The Members of the EASD Executive Board, Álvaro Cunha, the President of EASD, Guido De Roeck, the Honorary Chair of EURODYN 2020 and Fabrizio Vestroni the Chair of the previous EURODYN 2017, for their valuable advice, suggestions and interest, during the three-year preparation period of EURODYN 2020. Their contribution was instrumental for the successful outcome of this undertaking.

Last but not least, we would like to express our gratitude to the Conference Secretariat, Eva Konti, the heart and soul of this Conference, for her every day devoted work on this undertaking, in dealing with numerous organization aspects and in meeting all types of requests, without which it would not have been possible to organize such an event. Our wholehearted appreciation goes also to Panagiota Kouniaki, for her invaluable assistance in the preparation of the e-Book, the Open Access EASD Proceedings and for the coordination of the pre-recorded presentations and the Round-Table sessions, as well as for the supervision of the live broadcasting of the Conference Programme. Finally, to Evangelos Papadakis and the Pencilcase company, for undertaking the task of setting up the electronic platform, with all its hardware equipment and software tools, for coordinating and broadcasting live all conference events.

Dear Colleagues, everything has dramatically changed since the beginning of this year. The world continues to sail into uncharted waters, almost one year after the outbreak of COVID-19 we have entered into a second and more severe wave of the pandemic. We are called to face a new reality that we have never encountered before. However, we have no other choice than to remain optimistic, that COVID-19 will soon be defeated and everything will be almost the same as before and in-person international conferences will be resumed, perhaps in a hybrid mode by incorporating the best practices learned from virtual meetings, with gatherings in different exciting places all over the world. Until then, stay healthy by taking all necessary precautions to reduce the chances of being infected or of spreading the Coronavirus disease, and under the present circumstances, seize all benefits that online conferences and meetings can offer, hoping that this different EURODYN edition will remain alive in your memory for many years to come.

From the city of Athens, near the Rock of Acropolis and the New Acropolis Museum, we invite you to explore all available recourses and tools offered by this online event, for advancing your research and for enriching your cooperation with colleagues with mutual interests. For the next four days, we urge you to stay tuned, be active and interactive and enjoy the EURODYN virtual Conference 2020.

The EURODYN 2020 Conference Co-Chairs

Manolis Papadrakakis, *National Technical University of Athens, Greece*

Michalis Fragiadakis, *National Technical University of Athens, Greece*

Costas Papadimitriou, *University of Thessaly, Greece*

Athens, 17 November 2020

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EURODYN 2020

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Conference Guide

Programme Format

The Technical Programme consists of 3 Plenary Lectures, 6 semi-Plenary Lectures, 11 Round-Table Sessions and 38 Minisymposia. In total 400 presentations will take place during the four days of the conference.

Plenary Lecturers

Geert Degrande
KU Leuven, Belgium

21892 ASSESSMENT AND MITIGATION OF RAILWAY INDUCED VIBRATION IN THE BUILT ENVIRONMENT
Monday, 12:30-14:15, Room 1

Tracy Kijewski-Correa
University of Notre Dame, USA

21653 PREDICTING THE ENERGY DISSIPATIVE POTENTIAL OF TALL BUILDINGS: INSIGHTS FROM SUSTAINED FULL-SCALE MONITORING
Monday, 12:30-14:15, Room 1

Yi Qing Ni
The Hong Kong Polytechnic University, Hong Kong

21894 PROBABILISTIC MACHINE LEARNING FOR INTERPRETATION OF VIBRATION MONITORING DATA
Monday, 12:30-14:15, Room 1

Semi-Plenary Lecturers

Eleni Chatzi
ETH Zürich, Switzerland

20435 UNDERSTANDING, REDUCING AND TRACKING DYNAMICS: BEYOND LINEAR TIME INVARIANT SYSTEMS
Wednesday, 15:10-17:00, Room 1

Joel P. Conte
University of California, San Diego, USA

21902 COMPREHENSIVE TREATMENT OF UNCERTAINTIES IN THE PERFORMANCE-BASED SEISMIC DESIGN OF ORDINARY BRIDGES
Wednesday, 15:10-17:00, Room 2

Geert Lombaert
KU Leuven, Belgium

21891 EXPERIMENTAL ASSESSMENT AND MODEL CALIBRATION OF A LARGE MULTI-SPAN QUASI-PERIODIC VIADUCT
Wednesday, 15:10-17:00, Room 2

Andrei Metrikine
TU Delft, The Netherlands

21822 DYNAMICS AND VIBROACOUSTICS OF MONOPOLES FOR OFFSHORE WIND TURBINES
Wednesday, 15:10-17:00, Room 1

Sotirios Natsiavas
Aristotle University of Thessaloniki, Greece

19585 DYNAMICS OF MECHANICAL MULTIBODY SYSTEMS WITH MOTION CONSTRAINTS
Wednesday, 15:10-17:00, Room 1

Filippo Ubertini
University of Perugia, Italy

21651 UNSUPERVISED LEARNING AND PHYSICS-BASED METHODS FOR SHM: CHALLENGES AND TRENDS FOR SAFEGUARDING BUILT HERITAGE IN SEISMIC ZONES
Wednesday, 15:10-17:00, Room 2

Round-Table Panelists

MS 2: NON-LINEAR DYNAMICS *Thursday, 16:10-17:10, Room 4*

Giuseppe Rega,	*Sapienza University of Rome, Italy (Moderator)*
Gaetan Kerschen,	*University of Liege, Belgium*
Andrei Metrikine,	*TU Delft, Netherlands*
David Wagg,	*University of Sheffield, UK*

MS 7: SYSTEM IDENTIFICATION AND DAMAGE DETECTION *Wednesday, 11:00-12:00, Room 1*

Eleni Chatzi,	*ETH Zurich, Switzerland (Moderator)*
Guido De Roeck,	*KU Leuven, Belgium (Moderator)*
Manolis Chatzis,	*Oxford University, UK*
Vincenzo Gattulli,	*Sapienza University of Rome, Italy*
Jyrki Kullaa,	*Helsinki Metropolia University of Applied Sciences, Finland*
Edwin Reynders,	*KU Leuven, Belgium*
Dmitri Tcherniak,	*Bruel & Kjaer, Denmark*

MS 8: STRUCTURAL HEALTH MONITORING *Tuesday, 15:30-16:30, Room 1*

Joel Conte,	*UC San Diego, USA (Moderator)*
Alvaro Cunha,	*University of Porto, Portugal*
Geert Lombaert,	*KU Leuven, Belgium*
Babak Moaveni,	*Tufts University, USA*
Piotr Omenzetter,	*University of Aberdeen, Scotland*
Costas Papadimitriou,	*University of Thessaly, Greece*

MS 12: FOOTBRIDGE VIBRATIONS *Tuesday, 17:20-18:20, Room 3*

Elsa Caetano,	*University of Porto, Portugal (Moderator)*
Federica Tubino,	*University of Genoa, Italy*
Katrien Van Nimmen,	*KU Leuven, Belgium*

MS 15: DYNAMICS OF ON- AND OFF-SHORE WIND ENERGY STRUCTURES (WES) *Wednesday, 12:10-13:10, Room 3*

Claudio Borri,	*University of Florence, Italy*
Ruediger Hoeffer,	*Ruhr-Universität Bochum, Germany*
Enzo Marino,	*University of Florence,Italy*

MS 20: MOVING LOADS

Tuesday, 13:30-14:30, Room 2

Karel van Dalen,	*TU Delft, Netherlands (Moderator)*
Nicholas Alexander,	*University of Bristol, UK*
Geert Degrande,	*KU Leuven, Belgium*
Andrei Metrikine,	*TU Delft, Netherlands*
Gerhard Müller,	*TU Munich, Germany*

MS 24: SEISMIC PROTECTION OF STEEL STRUCTURES BY MEANS OF DISSIPATIVE SYSTEMS AND COMPONENTS

Monday, 18:00-19:00, Room 3

Alper Kanyilmaz,	*Politecnico di Milano, Italy (Moderator)*
Carlo A. Castiglioni,	*Politecnico di Milano, Italy*
Benno Hoffmeister,	*RWTH Aachen University, Germany*
Harris Mouzakis,	*National Technical University of Athens, Greece*
Michalis Sofras,	*SOFMAN, SA, Greece*
Giorgio Urbano,	*Rina Consulting S.p.A., Italy*

MS 25: EXPERIMENTAL EARTHQUAKE ENGINEERING

Thursday, 13:10-14:10, Room 1

Michalis Fragiadakis,	*National Technical University of Athens, Greece (Moderator)*
Claudio Bernuzzi,	*Politecnico di Milano, Italy*
Luis Calado,	*University of Lisbon, Portugal*
Harris Mouzakis,	*National Technical University of Athens, Greece*
Anastasios Sextos,	*University of Bristol, UK*

MS 30: RECENT ADVANCES IN PERFORMANCE-BASED ENGINEERING AND DESIGN OF STRUCTURES AND CIVIL INFRASTRUCTURE SYSTEMS SUBJECTED TO SINGLE OR MULTIPLE HAZARDS

Tuesday, 20:30-21:30, Room 2

Michele Barbato,	*UC Davis, USA (Moderator)*
Joel P. Conte,	*UC San Diego, USA*
Dimitrios Vamvatsikos,	*National Technical University of Athens, Greece*
Maria Favvata,	*University of Patras,Greece*

MS 31: EUROPEAN ETN "DYNAMIC VIRTUALISATION: MODELLING PERFORMANCE OF ENGINEERING STRUCTURES" (DYVIRT) *Wednesday, 17:10-18:10, Room 4*

Michael Beer,	*University of Hanover, Germany (Moderator)*
Eleni Chatzi,	*ETH Zurich, Switzerland*
Bart Peeters,	*Siemens Digital Industries Software*
Tadeusz Uhl,	*AGH University Science & Technology, Poland*
David Wagg,	*University of Sheffield, UK*
Keith Worden,	*University of Sheffield, UK*

MS 35: NEW TRENDS IN THE COMPUTATIONAL AND EXPERIMENTAL STRUCTURAL DYNAMICS FOR THE PRESERVATION OF HISTORICAL MASONRY STRUCTURES IN SEISMIC AREAS *Monday, 20:00-21:00, Room 4*

Antonio Formisano,	*University Naples Federico II, Italy (Moderator)*
Francesco Clementi,	*Università degli Studi di Perugia , Italy (Moderator)*
Gabriele Milani,	*Politecnico di Milano, Italy (Moderator)*
Nicola Chieffo,	*Politehnica University of Timisoara, Romania*
Michele D'Amato,	*Università degli Studi della Basilicata, Italy*
Anastasios Drougkas,	*TU Delft, Netherlands*
Angela Ferrante,	*Università Politecnica delle Marche, Italy*
Ersilia Giordano,	*Università Politecnica delle Marche, Italy*
Antonio Gesualdo,	*University Naples Federico II, Italy*
Nicola Grillanda,	*Politecnico di Milano, Italy*
Fabio Minghini,	*Università degli Studi di Ferrara, Italy*
Saverio Porzio,	*University of Calabria, Italy*
Jacopo Scacco,	*Politecnico di Milano, Italy*
Fabio Solarino,	*University of Pisa, Italy*
Maria Rosa Valluzzi,	*University of Padova, Italy*
Peixuan Wang,	*Politecnico di Milano, Italy*

Minisymposia (in Athens Time Zone)

MS 1: ADVANCES IN COMPUTATIONAL STRUCTURAL DYNAMICS

MS Organizers: B. Balachandran, D. Duhamel, D. Giagopoulos, S. Natsiavas

MS 1 - I:	Thursday,	10:00-12:00,	Room 3
MS 1 - II:	Thursday,	12:10-14:10,	Room 3

MS 2: NON-LINEAR DYNAMICS

MS Organizers: J. Naprstek, G. Rega

MS 2 - I:	Wednesday,	19:20-21:20,	Room 4
MS 2 - II:	Thursday,	10:00-12:00,	Room 4
MS 2 - III:	Thursday,	12:10-14:10,	Room 4
Round Table:	Thursday,	16:10-17:10,	Room 4

MS 3: DYNAMIC BUCKLING

MS Organizers: P.B. Gonçalves, F. Pellicano, C. E. N. Mazzilli

MS 3:	Thursday,	15:10-17:10,	Room 2

MS 4: DYNAMICS OF COMPOSITE MATERIALS

MS Organizers: G. Bonnet, C. Boutin, S. Lenci

MS 4 - I:	Thursday,	12:10-14:10,	Room 3
MS 4 - II:	Thursday,	15:10-17:10,	Room 3

MS 5: DYNAMIC FLUID-STRUCTURE INTERACTION

MS 5:	Tuesday,	15:10-17:10,	Room 2

MS 6: VEHICLE DYNAMICS

MS Organizers: M. Ploechl, J. Edelmann

MS 6:	Monday,	17:10-19:10,	Room 2

MS 7: SYSTEM IDENTIFICATION AND DAMAGE DETECTION

MS Organizers: E. Chatzi, G. De Roeck

MS 7 - I:	Tuesday,	17:20-19:20,	Room 1
MS 7 - II:	Tuesday,	19:30-21:30,	Room 1
MS 7 - III:	Wednesday,	10:00-11:00,	Room 1
Round Table:	Wednesday,	11:00-12:00,	Room 1

MS 8: STRUCTURAL HEALTH MONITORING

MS Organizers: J. Conte, A. Cunha, G. Lombaert, B. Moaveni, P. Omenzetter, C. Papadimitriou

MS 8 - I:	Monday,	17:10-19:10,	Room 1
MS 8 - II:	Monday,	19:20-21:20,	Room 1
MS 8 - III:	Tuesday,	10:00-12:00,	Room 1
MS 8 - IV:	Tuesday,	12:10-14:10,	Room 1
Round Table:	Tuesday,	15:30-16:30,	Room 1

MS 9: STRUCTURAL CONTROL

MS Organizers: F. Casciati, J. Rodellar

MS 9:	Monday,	15:00-17:00,	Room 1

MS 10: ADVANCES ON INERTER-BASED STRUCTURAL VIBRATION CONTROL

MS Organizers: A. Giaralis, A. Taflanidis

MS 10:	Wednesday,	17:10-19:10,	Room 2

MS 11: BRIDGE DYNAMICS

MS 11 - I:	Monday,	19:20-21:20,	Room 3
MS 11 - II:	Tuesday,	10:00-12:00,	Room 3

MS 12: FOOTBRIDGE VIBRATIONS

MS Organizers: E. Caetano, F. Tubino, P. Van den Broeck, K. Van Nimmen

MS 12 - I:	Tuesday,	12:10-14:10,	Room 3
MS 12 - II:	Tuesday,	15:10-17:10,	Room 3
Round Table:	Tuesday,	17:20-18:20,	Room 3

MS 13: HUMAN INDUCED VIBRATIONS IN FLOORS, STAIRCASES AND STADIA

MS Organizers: L. Bruno, A. Pavic

MS 13:	Monday,	15:00-17:00,	Room 4

MS 14: WIND INDUCED VIBRATIONS OF SLENDER STRUCTURES AND FATIGUE

MS Organizers: V. Denoël, F. Foti, F. Perotti

MS 14 - I:	Monday,	15:00-17:00,	Room 2
MS 14 - II:	Monday,	17:10-19:10,	Room 2

MS 15: DYNAMICS OF ON- AND OFF-SHORE WIND ENERGY STRUCTURES (WES)

MS Organizers: C. Borri, E. Marino, C.C. Baniotopoulos, R. Höffer, F. Magalhães

MS 15 - I:	Tuesday,	19:30-21:30,	Room 3
MS 15 - II:	Wednesday,	10:00-12:00,	Room 3
Round Table:	Wednesday,	12:10-13:10,	Room 3

MS 16: VIBRATION-BASED ASSESSMENT AND SHM OF CULTURAL HERITAGE STRUCTURES

MS Organizer: C. Gentile

MS 16 - I:	Wednesday,	10:00-12:00,	Room 2
MS 16 - II:	Wednesday,	12:10-14:10,	Room 2

MS 17: VIBRATIONS DUE TO CONSTRUCTION AND INDUSTRIAL ACTIVITIES

MS Organizer: C. Moutinho

MS 17:	Monday,	15:00-17:00,	Room 4

MS 18: VIBRO-ACOUSTICS

MS Organizer: S. Sorokin

MS 18:	Wednesday,	17:10-19:10,	Room 1

MS 19: BLAST AND IMPACT LOADS

MS 19:	Tuesday,	10:00-12:00,	Room 3

MS 20: MOVING LOADS

MS Organizers: T. Mazilu, A.V. Metrikine, K.N. van Dalen, W.M. Zhai

MS 20 - I:	Tuesday,	10:00-12:00,	Room 2
MS 20 - II:	Tuesday,	12:10-13:30,	Room 2
Round Table:	Tuesday,	13:30-14:30,	Room 2

MS 21: TRAFFIC INDUCED VIBRATIONS

MS Organizers: G. Degrande, G. Lombaert, G. Müller

MS 21:	Wednesday,	17:10-19:10,	Room 2

MS 22: DYNAMIC SOIL-STRUCTURE INTERACTION AND WAVE PROPAGATION

MS Organizers: D. Clouteau, A. Metrikine, G. Müller, J-F. Semblat

MS 22 - I:	Thursday,	10:00-12:00,	Room 2
MS 22 - II:	Thursday,	12:10-14:10,	Room 2
MS 22 - III:	Thursday,	15:10-17:10,	Room 2

MS 23: ASSESSMENT OF INDUSTRIAL STRUCTURES AND INFRASTRUCTURE UNDER NATURAL HAZARDS

MS Organizers: K. Bakalis, V. Melissianos, D. Vamvatsikos

MS 23:	Wednesday,	19:20-21:20,	Room 1

MS 24: SEISMIC PROTECTION OF STEEL STRUCTURES BY MEANS OF DISSIPATIVE SYSTEMS AND COMPONENTS

MS Organizers: C.A. Castiglioni, A. Kanyilmaz, I. Psycharis, H. P. Mouzakis, I. Vayas

MS 24 - I:	Monday,	15:00-17:00,	Room 3
MS 24 - II:	Monday,	17:10-18:00,	Room 3
Round Table:	Monday,	18:00-19:00,	Room 3

MS 25: EXPERIMENTAL EARTHQUAKE ENGINEERING

MS Organizers: M. Fragiadakis, H. Mouzakis

MS 25 - I:	Wednesday,	19:20-21:20,	Room 1
MS 25 - II:	Thursday,	10:00-12:00,	Room 1
MS 25 - III:	Thursday,	12:10-13:10,	Room 1
Round Table:	Thursday,	13:10-14:10,	Room 1

MS 26: UQ AND PROBABILISTIC LEARNING IN COMPUTATIONAL DYNAMICS

MS Organizers: M. Arnst, R. Ghanem, C. Soize

MS26:	Wednesday,	19:20-21:20,	Room 2

MS 27: STOCHASTIC DYNAMICS AND RELIABILITY ANALYSIS OF STRUCTURAL AND MECHANICAL SYSTEMS UNDER ENVIRONMENTAL EXCITATION

MS Organizers: M. Barbato, M. Vasta

MS 27:	Tuesday,	19:30-21:30,	Room 4

MS 28: UNCERTAINTIES ON MATERIALS AND ENVIRONMENTAL LOADS

MS Organizers: M. Barbato, V. Sepe, P-M. Vasta

MS 28:	Monday,	15:00-17:00,	Room 3

MS 29: BAYESIAN UPDATING, FILTERING AND INVERSION FOR DYNAMIC SYSTEMS

MS Organizers: J. Beck, A. Taflanidis, I. Papaioannou

MS 29:	Monday,	19:20-21:20,	Room 2

MS 30: RECENT ADVANCES IN PERFORMANCE-BASED ENGINEERING AND DESIGN OF STRUCTURES AND CIVIL INFRASTRUCTURE SYSTEMS SUBJECTED TO SINGLE OR MULTIPLE HAZARDS

MS Organizers: M. Barbato, J. Conte

MS 30 - I:	Tuesday,	15:10-17:10,	Room 2
MS 30 - II:	Tuesday,	17:20-19:20,	Room 2
MS 30 - III:	Tuesday,	19:30-20:30,	Room 2
Round Talbe:	Tuesday,	20:30-21:30,	Room 2

MS 31: EUROPEAN ETN "DYNAMIC VIRTUALISATION: MODELLING PERFORMANCE OF ENGINEERING STRUCTURES" (DYVIRT)

MS Organizers: M. Beer, V. Fragkoulis, D. Wagg, K. Worden

MS 31 - I:	Wednesday,	10:00-12:00,	Room 4
MS 31 - II:	Wednesday,	12:10-14:10,	Room 4
Round Table:	Wednesday,	17:10-18:10,	Room 4

MS 32: COMPUTATIONAL METHODS FOR STOCHASTIC DYNAMICS

MS Organizers: M. Beer, V. C. Fragkoulis, I. A. Kougioumtzoglou, I.P. Mitseas

MS 32:	Wednesday,	12:10-14:10,	Room 1

MS 33: NUMERICAL SIMULATIONS FOR EARTHQUAKE-RESILIENT SYSTEMS

MS Organizer: D. Forcellini

MS 33:	Thursday,	15:10-17:10,	Room 1

MS 34: VIBRATION ABSORPTION

MS Organizers: I. Antoniadis, E. Sapountzakis

MS 34 - I:	Wednesday,	17:10-19:10,	Room 3
MS 34 - II:	Wednesday,	19:20-21:20,	Room 3

MS 35: NEW TRENDS IN THE COMPUTATIONAL AND EXPERIMENTAL STRUCTURAL DYNAMICS FOR THE PRESERVATION OF HISTORICAL MASONRY STRUCTURES IN SEISMIC AREAS

MS Organizers: F. Clementi, A. Formisano, G. Milani

MS 35:	Monday,	17:10-19:10,	Room 4
Round Table:	Monday,	20:00-21:00,	Room 4

MS 36: DAMPING MODELLING AND EXPERIMENTS

MS Organizer: A. Cicirello

MS 36:	Wednesday,	19:20-21:20,	Room 3

MS 37: CONSERVATION, RETROFIT AND STRENGTHENING OF EXISTING STRUCTURES: INNOVATIONS IN APPLIED METHODS AND MATERIALS

MS Organizers: M. Corradi, C. Maniatakis, C. Spyrakos

MS 37:	Tuesday,	19:30-21:30,	Room 4

MS 38: GENERAL SESSION ON STRUCTURAL DYNAMICS, STABILITY AND VIBRATIONS

MS Organizers: G. De Roeck, M. Fragiadakis, C. Papadimitriou, M. Papadrakakis

MS 38 - I:	Tuesday,	10:00-12:00,	Room 4
MS 38 - II:	Tuesday,	12:10-14:10,	Room 4
MS 38 - III:	Tuesday,	15:10-17:10,	Room 4
MS 38 - IV:	Tuesday,	17:20-19:20,	Room 4

Monday, November 23 12:00-12:30	Room 1

OPENING

GREETINGS

Alvaro Cunha
Guido De Roeck
Manolis Papadrakakis

PLENARY LECTURES

Monday, November 23 12:30-14:15	Room 1

21894 PROBABILISTIC MACHINE LEARNING FOR INTERPRETATION OF VIBRATION MONITORING DATA
Yi Qing Ni

21892 ASSESSMENT AND MITIGATION OF RAILWAY INDUCED VIBRATION IN THE BUILT ENVIRONMENT
Geert Degrande

21653 PREDICTING THE ENERGY DISSIPATIVE POTENTIAL OF TALL BUILDINGS: INSIGHTS FROM SUSTAINED FULL-SCALE MONITORING
Tracy Kijewski-Correa

14:15-15:00
Mid-day Break

TECHNICAL SESSIONS

Monday, November 23 **Room 1**
15:00-17:00

MS 9: STRUCTURAL CONTROL
MS Organizers: F. Casciati, J. Rodellar

18500 NUMERICAL PERFORMANCE EVALUATION OF A BI-DIRECTIONAL ROLLER SEISMIC ISOLATION BEARINGS
*Ricardo González, **Nelson Ortiz-Cano**, Andrés Nieto-Leal, Carlos Gaviria-Mendoza*

19005 SEMI-ACTIVE OMNIDIRECTIONAL TUNED LIQUID COLUMN DAMPER
***Behnam Mehrkian**, Okyay Altay*

19241 CONTROL LAW AND ACTUATOR CAPACITY EFFECT ON THE DYNAMIC PERFORMANCE OF A HYBRID MASS DAMPER; THE CASE OF ROTTWEIL TOWER
***Lefteris Koutsoloukas**, Nikolaos Nikitas, Petros Aristidou, Christian Meinhardt*

19264 DOUBLE TUNED MASS DAMPER INERTER FOR SEISMIC RESPONSE REDUCTION OF STRUCTURES
***Mahdi Abdeddaim**, Salah Djerouni, Abdelhafid Ounis, Nassim Djedoui*

19567 OPTIMAL FEEDBACK CONTROL LAW FOR VISCOELASTIC MATERIALS WITH MEMORY EFFECTS
***Gianluca Pepe**, Elena Paifelman, Antonio Carcaterra*

19996 A LOCAL ACTIVE NOISE CONTROL SYSTEM BASED ON A NONLINEAR SENSING TECHNIQUE FOR YACHT APPLICATIONS
***Dimitrios Mylonas**, Alberto Erspamer, Andreas Paradisiois, Christos Yiakopoulos, Ioannis Antoniadis*

20145 TUNING STRATEGIES AND PLACEMENTS FOR DISTRIBUTED MULTIPLE TUNED MASS DAMPERS FOR WIND-INDUCED VIBRATION CONTROL IN HIGH-RISE BUILDINGS
***Ahmed Abed**, Oum El Khaiat Moustachi*

19918 OPTIMAL DAMPER DISTRIBUTIONS IN SHEAR FRAMES CONSIDERING SOIL CONDITIONS
*Ersin Aydin, **Baki Ozturk**, Osman Sivrikaya*

Monday, November 23 **Room 2**
15:00-17:00

MS 14 - I: WIND INDUCED VIBRATIONS OF SLENDER STRUCTURES AND FATIGUE
MS Organizers: V. Denoël, F. Foti, F. Perotti

20304 A STOCHASTIC AND CONTINUOUS MODEL OF AEOLIAN VIBRATIONS OF CONDUCTORS EQUIPPED WITH STOCKBRIDGE DAMPERS
***Francesco Foti**, Vincent Denoël, Luca Martinelli, Federico Perotti*

18405 DYNAMIC RESPONSE OF TALL TIMBER BUILDINGS UNDER SERVICE LOAD – THE DYNATTB RESEARCH PROGRAM
*Rune Abrahamsen, Magne A Bjertnæs, Jacques Bouillot, Bostjan Brank, Lionel Cabaton, Roberto Crocetti, Olivier Flamand, Fabien Garains, Igor Gavric, Olivier Germain, Ludwig Hahusseau, Stephane Hameury, Marie Johansson, Thomas Johansson, Wai Kei Ao, Blaž Kurent, Pierre Landel, **Andreas Linderholt**, Kjell Malo, Manuel Manthey, Petter Nåvik, Alex Pavic, Fernando Perez, Anders Rönnquist, Haris Stamatopoulos, Iztok Sustersic, Salue Tulebekova*

18535 LARGE-SCALE AEROELASTIC TESTING TO INVESTIGATE THE RESILIENCY OF TRANSMISSION INFRASTRUCTURE TO HURRICANE STORMS
***Ziad Azzi**, Amal Elawady, Arindam Chowdhury*

18554 EVALUATION OF WIND INDUCED VIBRATION OF LONG SPAN BRIDGES WITH MACHINE LEARNING
***Dario Fernandez**, Aksel Fenerci, Ole Øiseth*

18622 AUTHORIAL METHOD OF EVALUATING VIBRATIONAL COMFORT OF OCCUPANTS OF HIGH-RISE BUILDINGS BASED ON AEROELASTIC MODEL TESTS
***Aleksander Pistol**, Łukasz Flaga, Piotr Krajewski, Andrzej Flaga*

18975 DYNAMIC STUDY OF PORT CRANES SUBJECTED TO STOCHASTIC WIND ACTIONS
Luigi Solazzi

19464 FATIGUE LIFE ESTIMATION CONSIDERING THE QUASI-PERIODIC CROSS-WIND RESPONSE OF SLENDER STRUCTURES IN THE LOCK-IN RANGE
***Francesca Lupi**, Ruediger Höffer, Hans-Jürgen Niemann*

Monday, November 23 **Room 3**
15:00-17:00

MS 28: UNCERTAINTIES ON MATERIALS AND ENVIRONMENTAL LOADS
MS Organizers: M. Barbato, V. Sepe, P-M. Vasta

20383 GENERATION OF ARTIFICIAL ACCELEROGRAMS COMPATIBLE WITH SPECIFIC GROUND MOTION RECORDS
*Stavros Chionidis, **George Stefanou***

20259 UNCERTAINTIES IN WIND-INDUCED LOADS ON HYPERBOLIC PARABOLOID ROOFS: WIND-TUNNEL TESTS AND ANALYTICAL MODELS
*Fabio Rizzo, **Vincenzo Sepe***

20047 MODEL UNCERTAINTIES IN NLFEAS OF RC SYSTEMS UNDER CYCLIC LOADS
***Paolo Castaldo**, Diego Gino, Guglielmo Amendola, Elena Miceli*

MS 24 - I: SEISMIC PROTECTION OF STEEL STRUCTURES BY MEANS OF DISSIPATIVE SYSTEMS AND COMPONENTS
MS Organizers: C.A. Castiglioni, A. Kanyilmaz, I. Psycharis, H. P. Mouzakis, I. Vayas

18536 INNOVATIVE DISSIPATIVE DEVICES WITH TENSEGRITY ARCHITECTURE AND SUPER ELASTIC BEHAVIOUR FOR THE SEISMIC PROTECTION OF STRUCTURES
*Narinder Singh, Ada Amendola, Filipe Amarante Dos Santos, Gianmario Benzoni, **Fernando Fraternali***

18695 EXPERIMENTAL ANALYSIS OF STEEL FRAMES PROTECTED WITH EASILY REPAIRABLE DISSIPATIVE SEISMIC DEVICES
***Giulia Giuliani**, Roberto Andreotti, Nicola Tondini, Oreste S. Bursi*

20378 USE OF HIGH-STRENGTH STEEL FOR MULTI-CRITERIA OPTIMIZATION OF DISSIPATIVE DEVICES
*Silvia Caprili, **Ivan Panzera**, Walter Salvatore*

20182 DAMAGE-AVOIDANCE STEEL ROCKING FRAMES WITH BUCKLING-ENABLED COMPOSITE BRACING
***Leena Tahir Kibriya**, Christian Málaga-Chuquitaype, Mohammad Mehdi Kashani*

Monday, November 23 **Room 4**
15:00-17:00

MS 13: HUMAN INDUCED VIBRATIONS IN FLOORS, STAIRCASES AND STADIA
MS Organizers: L. Bruno, A. Pavic

18373 SIMPLIFIED COMPUTATION OF TIMBER FLOOR VIBRATIONS LEVEL DUE TO HUMAN ACTIVITIES
***Thomas Catterou**, Jean-Baptiste Castaing, Patrice Garcia*

19273 SYSTEM IDENTIFICATION OF HUMAN LEG SPRING STIFFNESS DURING RHYTHMIC JUMPING ON A PERCEPTIBLY MOVING SURFACE
***Rory White**, Nicholas Alexander, John Macdonald*

19504 ENVIRONMENTAL IMPACT OF STRUCTURAL MODIFICATIONS IN OFFICE FLOORS TO SATISFY VIBRATION SERVICEABILITY
***Márcio S. Gonçalves**, Aleksandar Pavic*

19938 ANALYSIS THE LATERAL VIBRATION SERVICEABILITY OF TEMPORARY GRANDSTAND AND HUMAN COMFORT BASED ON EXPERIMENT
***Suhui Yu**, Jian Yuan, Wei Wang, Chengqiang Gao, Weili Wang, Cong Liu*

MS17 - I: VIBRATIONS DUE TO CONSTRUCTION AND INDUSTRIAL ACTIVITIES
MS Organizer: C. Moutinho

20243 VIBRATION MONITORING OF CONSTRUCTION WORK AND INDUSTRIAL ACTIVITIES USING NEW SOLUTIONS OF INSTRUMENTATION
***Carlos Moutinho**, Alvaro Cunha*

19126 VIBRATION CONTROL IN INDUSTRY
***Wouter Meijers**, Sander Meijers*

19538 WAVE PROPAGATION EFFECTS FROM BLAST INDUCED VIBRATIONS
***Arian Nasseri**, Peter Folkow, Morgan Johansson, Joosef Leppänen, Lars-Olof Dahlström*

17:00-17:10
Break

TECHNICAL SESSIONS

Monday, November 23 **Room 1**
17:10-19:10

MS 8 - I: STRUCTURAL HEALTH MONITORING
MS Organizers: J. Conte, A. Cunha, G. Lombaert, B. Moaveni, P. Omenzetter, C. Papadimitriou

19232 CHARACTERIZATION OF VIBRATIONS IN THE BUILT ENVIROMENT
***Chris Geurts, Okke Bronkhorst**, Davide Moretti, Jitse Pruiksma, Ron Snijders*

18540 DAMAGE ANALYSIS OF STEEL-CONCRETE COMPOSITE BEAMS UNDER STATIC LOADS
***Faraz Sadeghi**, Xinqun Zhu, Jianchun Li*

18691 SEISMIC STRUCTURAL HEALTH MONITORING FOR REDUCING LIFE CYCLE COST OF ROAD BRIDGES
***Michela Torti**, Ilaria Venanzi, Filippo Ubertini*

18764 VIBRATION–BASED ROBUST DAMAGE DETECTION UNDER ASSEMBLY–INDUCED UNCERTAINTY: THE OUTPUT–ONLY CASE
***Andreas Mastakouris**, Georgia Andriosopoulou, Kyriakos Vamvoudakis-Stefanou, Spilios Fassois*

18784 AUTOMATED OPERATIONAL MODAL ANALYSIS OF A STEEL ARCH BRIDGE FROM DYNAMIC SUB-MICROSTRAIN FIBER BRAGG GRATING DATA
***Dimitrios Anastasopoulos**, Guido De Roeck, Edwin P.B. Reynders*

18836 AN ITERATIVE MULTILEVEL UPDATING SCHEME FOR VIBRATION-BASED DAMAGE ASSESSMENT OF A PRESTRESSED CONCRETE GIRDER BRIDGE
***Leqia He**, Edwin Reynders, Changgen Deng, Giuseppe C. Marano, Bruno Briseghella, Guido De Roeck*

18952 DRIVE-BY RESONANT BRIDGE DETECTION METHOD USING TWO TRACK IRREGULARITIES MEASURED ON THE FIRST AND LAST VEHICLES OF A TRAIN
***Kodai Matsuoka**, Hirofumi Tanaka, Kyohei Kawasaki, Kazuhiro Kajihara*

18958 STRUCTURAL HEALTH MONITORING OF A PASSIVE VIBRATION CONTROLLED STRUCTURE
***Tsutomu Ochiai**, Tetsushi Inubushi, He Ma, Manuel Navarro, Takahisa Enomoto*

Monday, November 23 **Room 2**
17:10-19:10

MS 14 - II: WIND INDUCED VIBRATIONS OF SLENDER STRUCTURES AND FATIGUE
MS Organizers: V. Denoël, F. Foti, F. Perotti

19569 MODELING THE INTERACTION OF GALLOPING AND VORTEX INDUCED VIBRATION FOR STEEL-CONCRETE COMPOSITE BRIDGES IN LAUNCHING PHASE
***Cong Chen**, Niccolo Wieczorek, Julian Unglaub, Klaus Thiele*

19619 FULL SCALE MONITORING OF THE WIND EXCITED RESPONSE OF A LIGHT TOWER
***Andrea Orlando**, Maria Pia Repetto*

19633 WIND TUNNEL VIV TESTING OF HELICAL STRAND CABLE MODELS
***Arsenii Trush**, Stanislav Pospíšil, Hrvoje Kozmar*

20164 NUMERICAL AND EXPERIMENTAL STUDY OF A SLENDER CATENARY BRIDGE WITH A NOVEL TENSIONING SYSTEM
***Gergely Szabó**, Gábor Hochrein*

20209 PREDICTION OF THE WIND-INDUCED FATIGUE OF SLENDER STRUCTURES
***Michela Damele**, Maria Pia Repetto*

MS 6: VEHICLE DYNAMICS
MS Organizers: M. Ploechl, J. Edelmann

19401 AUTO-SAPIENS, AN EXPERIMENTAL AUTONOMOUS DRIVING SYSTEM
***Maicol Laurenza**, Gianluca Pepe, Antonio Carcaterra*

19489 EFFICIENT METHODS TO ASSESS LINEAR AND NON-LINEAR AUTOMOTIVE PLATOON CONTROL STABILITY AND PERFORMANCE
***Christian Kalteis**, Sebastian Thormann, Alexander Schirrer, Stefan Jakubek*

Monday, November 23 **Room 3**
17:10-18:00

MS 24 - II: SEISMIC PROTECTION OF STEEL STRUCTURES BY MEANS OF DISSIPATIVE SYSTEMS AND COMPONENTS
MS Organizers: C.A. Castiglioni, A. Kanyilmaz, I. Psycharis, H. P. Mouzakis, I. Vayas

18974 EARTHQUAKE EFFECTS ON LOW PROFILE CONTAINER CRANE WITH SEISMIC ISOLATION DEVICE
Luigi Solazzi

19865 MONOTONIC AND CYCLIC BEHAVIOUR OF THE BEAM-TO-COLUMN JOINTS OF THE “FUTURE” MOCKUP
***Roberto Tartaglia**, Mario D'Aniello, Raffaele Landolfo*

Monday, November 23 **Room 3**
18:00-19:00

ROUND TABLE MS 24 : SEISMIC PROTECTION OF STEEL STRUCTURES BY MEANS OF DISSIPATIVE SYSTEMS AND COMPONENTS

Moderator: Alper Kanyilmaz
Panel: Carlo A. Castiglioni, Benno Hoffmeister, Harris Mouzakis, Michalis Sofras, Giorgio Urbano

Agenda: An open discussion with the title "Earthquake risk mitigation of buildings with reduced costs and environmental impact from a life-cycle perspective"

Monday, November 23 **Room 4**
17:10-19:10

MS 35: NEW TRENDS IN THE COMPUTATIONAL AND EXPERIMENTAL STRUCTURAL DYNAMICS FOR THE PRESERVATION OF HISTORICAL MASONRY STRUCTURES IN SEISMIC AREAS
MS Organizers: F. Clementi, A. Formisano, G. Milani

19379 EXPERIMENTAL AND NUMERICAL STUDY OF HISTORIC MASONRY WITH BED JOINT REINFORCED REPOINTING
***Anastasios Drougkas**, Lucia Licciardello, Jan G. Rots, Rita Esposito*

20055 THE MODELLING OF MULTIPLE LEAF MASONRY WALLS OF THE ARQUATA DEL TRONTO FORTRESS AS A NON-SMOOTH DYNAMICAL SYSTEM
***Angela Ferrante**, Ersilia Giordano, Francesco Clementi, Vasilis Sarhosis, Gabriele Milani, Stefano Lenci*

20057 DAMAGE ASSESSMENT OF CHURCHES IN THE CITY OF CAMERINO AFTER THE 2016 CENTRAL ITALY SEISMIC SEQUENCE
***Ersilia Giordano**, Angela Ferrante, Francesco Clementi, Stefano Lenci*

20156 MITIGATION OF AMPLIFIED RESPONSE OF RESTRAINED ROCKING WALLS THROUGH HORIZONTAL DAMPERS
***Fabio Solarino**, Linda Giresini, Daniel V. Oliveira*

20331 SEISMIC VULNERABILITY COMPARATIVE ASSESSMENT OF SOME SAMPLES OF CHURCHES AFFECTED BY LAST ITALIAN EARTHQUAKES
*Generoso Vaiano, **Michele D'Amato**, Antonio Formisano*

20351 SEISMIC VULNERABILITY ASSESSMENT OF A ROMANIAN HISTORICAL MASONRY BUILDING UNDER NEAR-FIELD EARTHQUAKE
***Nicola Chieffo**, Antonio Formisano, Marius Mosoarca, Paulo B. Lourenço*

19862 SEISMIC VULNERABILITY EVALUATION OF LONGHU PAGODA, SICHUAN, PRC
***Peixuan Wang**, Jacopo Scacco, Gabriele Milani, Shengcai Li*

19:10-19:20
Break

TECHNICAL SESSIONS

Monday, November 23 **Room 1**
19:20-21:20

MS 8 - II: STRUCTURAL HEALTH MONITORING
MS Organizers: J. Conte, A. Cunha, G. Lombaert, B. Moaveni, P. Omenzetter, C. Papadimitriou

19343 REDUCTION OF TEMPERATURE EFFECTS FOR BRIDGE HEALTH MONITORING
Viet Ha Nguyen, Tanja Kebig, Jean-Claude Golinval, ***Stefan Maas***

19302 MONITORING FATIGUE DAMAGE ACCUMULATION OF WIND TURBINE TOWERS USING LIMITED NUMBER OF OUTPUT-ONLY VIBRATION MEASUREMENTS
Victor Flores Terrazas*, Omid Sedehi, Lambros S. Katafygiotis, Costas Papadimitriou*

19331 DYNAMIC CHARACTERISTICS OF A SIX-STOREY STEEL BUILDING EXAMINED FROM STRONG MOTION AND AMBIENT VIBRATION DATA
Toshihide Kashima*, Hiroto Nakagawa*

19351 DISCUSSIONS ON ILL-POSED PROBLEM IN DRIVE-BY PAVEMENT ROUGHNESS IDENTIFICATION
Soichiro Hasegawa*, Chul-Woo Kim, K. C. Chang, Naoya Toshi*

19374 DAMAGED DETECTION OF A BELL TOWER THROUGH OMA
Simone Castelli*, Andrea Belleri, Alessandra Marini, Babak Moaveni*

19474 INVESTIGATION OF EFFICIENT MODAL IDENTIFICATION OF BRIDGES USING BAYESIAN INFERENCE
Yoshinao Goi*, Chul-Woo Kim*

19503 VIBRATION-BASED STRUCTURAL HEALTH MONITORING OF A REINFORCED CONCRETE BEAM SUBJECT TO VARYING AMBIENT TEMPERATURES USING BAYESIAN METHODS
Patrick Simon*, Ronald Schneider, E. Viefhues, S. Said, Ralf Herrmann, Matthias Baeßler*

19290 STRUCTURAL DAMAGE DETECTION USING DISTANCE METRIC LEARNING AND DISTANCE BASED OUTLIER ANALYSIS
Bugra Bayik, ***Piotr Omenzetter****, Ekaterina Pavlovskaia, Dominic van der A*

Monday, November 23 **Room 2**
19:20-21:20

MS 29: BAYESIAN UPDATING, FILTERING AND INVERSION FOR DYNAMIC SYSTEMS
MS Organizers: J. Beck, A. Taflanidis, I. Papaioannou

18674 SELF-CALIBRATING BAYESIAN FILTER FOR ONLINE MODEL CLASS RECONFIGURATION AND MODEL UPDATING
Ka-Veng Yuen, ***Sin-Chi Kuok****, Le Dong*

18937 BAYESIAN MODEL UPDATING FOR EXISTING SEISMIC-ISOLATED BRIDGES USING OBSERVED ACCELERATION RESPONSE DATA
Masaru Kitahara*, Matteo Broggi, Michael Beer*

19967 REAL-TIME BAYESIAN PARAMETER, STATE AND INPUT ESTIMATION USING OUTPUT-ONLY VIBRATION MEASUREMENTS
Daniz Teymouri*, Omid Sedehi, Lambros S. Katafygiotis, Costas Papadimitriou*

19313 NONLINEAR SYSTEM IDENTIFICATION OF CORRODED REINFORCED CONCRETE STRUCTURES BASED ON SEISMIC RESPONSE DATA
***Shaghayegh Abtahi**, Zhenning Liu, Yong Li*

19363 INVESTIGATION OF LIKELIHOOD AND CORRELATION IN BAYESIAN ANALYSIS WITH FREQUENCY RESPONSE DATA
***Felix Schneider**, Iason Papaioannou, Daniel Straub, Gerhard Müller*

19368 DYNAMIC RELIABILITY UPDATING FOR LINEAR SYSTEMS BY CROSS-ENTROPY-BASED IMPORTANCE SAMPLING
***Oindrila Kanjilal**, Iason Papaioannou, Daniel Straub*

19578 DAMAGE DETECTION OF JOINING TECHNOLOGIES FOR PRINTED CONTROLLER BOARDS IN AUTOMOBILES
***Moritz Hülsebrock**, Maximilian Herrnberger, Heiko Atzrodt, Roland Lichtinger*

21411 HIERARCHICAL BAYESIAN UNCERTAINTY QUANTIFICATION OF DYNAMICAL MODELS UTILIZING MODAL STATISTICAL INFORMATION
***Omid Sedehi**, Costas Papadimitriou, Lambros Katafygiotis*

19284 DAMAGE ASSESSMENT OF A FULL-SCALE RC COLUMN USING SEISMIC ACCELERATION RESPONSE MEASUREMENTS
*Muge Kuleli, **Tomonori Nagayama***

Monday, November 23 **Room 3**
19:20-21:20

MS 11 - I: BRIDGE DYNAMICS

18600 EXPERIMENTAL STUDY OF RAILWAY BRIDGES OF SEVERAL STRUCTURAL TYPOLOGIES
***Pedro Galvín**, Emma Moliner, Antonio Romero, María Dolores Martínez-Rodrigo*

19192 RAIL-BRIDGE INTERACTION EFFECTS IN SINGLE-TRACK MULTI-SPAN BRIDGES. EXPERIMENTAL RESULTS VERSUS NUMERICAL PREDICTIONS UNDER OPERATING CONDITIONS
***María D. Martínez-Rodrigo**, Pedro Galvín, Emmanuela Moliner, Antonio Romero*

18747 DYNAMIC RESPONSE OF CORRUGATED STEEL CULVERTS FOR RAILWAY LINES
***Andreas Andersson**, Raid Karoumi*

18801 DYNAMIC SOIL-STRUCTURE INTERACTION IN RESONANT RAILWAY BRIDGES WITH INTEGRAL ABUTMENTS
***Abbas Zangeneh**, Andreas Andersson, Costin Pacoste, Raid Karoumi*

19141 HYDRODYNAMIC INTERACTION EFFECTS BETWEEN PONTOONS OF AN END-ANCHORED CURVED FLOATING BRIDGE
***Aksel Fenerci**, Knut Andreas Kvåle, Ole Øiseth*

19183 STOCHASTIC DYNAMIC ANALYSIS OF HIGH-SPEED MAGLEV GUIDEWAY COUPLED SYSTEM CONSIDERING RANDOM VEHICLE PARAMETER
***Peng Zhang**, Zhi-wu Yu, Jian- feng Mao*

19658 VERTICAL COUPLING EFFECT OF THE BALLASTED TRACK ON THE DYNAMIC BEHAVIOR OF MULTITRACK RAILWAY BRIDGES COMPOSED BY ADJACENT DECKS
***Emmanuela Moliner**, Antonio Romero, J.C. Sanchez-Quesada, María Dolores Martínez-Rodrigo, Pedro Galvín*

Monday, November 23 **Room 4**
20:00-21:00

ROUND TABLE MS 35: NEW TRENDS IN THE COMPUTATIONAL AND EXPERIMENTAL STRUCTURAL DYNAMICS FOR THE PRESERVATION OF HISTORICAL MASONRY STRUCTURES IN SEISMIC AREAS

Moderators: Antonio Formisano, Francesco Clementi, Gabriele Milani
Panel: Maria Rosa Valluzzi, Nicola Chieffo, Michele D'Amato, Fabio Minghini, Saverio Porzio, Fabio Solarino, Nicola Grillanda, Ersilia Giordano, Angela Ferrante, Jacopo Scacco, Antonio Gesualdo, Peixuan Wang, Anastasios Drougkas, Gabriele Milani

Agenda:

- Seismic behaviour of historical and archaeological structures
- Seismic analysis of churches
- Local failure mechanisms and limit analysis of masonry structures
- Seismic strengthening of masonry constructions

TECHNICAL SESSIONS

Tuesday, November 24 **Room 1**
10:00-12:00

MS 8 - III: STRUCTURAL HEALTH MONITORING
MS Organizers: J. Conte, A. Cunha, G. Lombaert, B. Moaveni, P. Omenzetter, C. Papadimitriou

19534 MONITORING MONOPILE PENETRATION THROUGH MAGNETIC STRAY FIELD MEASUREMENTS
***Peter Meijers**, Apostolos Tsouvalas, Andrei Metrikine*

19536 CLOSING THE LOOP ON NEW OFFSHORE WIND FOUNDATION DESIGN METHODS USING IN-SITU MEASUREMENTS
*Muge Kuleli, **Ross McAdam**, Manolis Chatzis, Anela Bajrić, Byron W. Byrne, Cedric Vanden Haute*

19618 MITIGATION OF ENVIRONMENTAL VARIABILITIES IN DAMAGE DETECTION: A COMPARATIVE STUDY OF TWO SEMI-SUPERVISED APPROACHES
*Artur Movsessian, **Bilal Ali Qadri**, Dmitri Tcherniak, David Garcia Cava, Martin Dalgaard Ulriksen*

19686 IMPLEMENTING A STRUCTURAL HEALTH MONITORING SYSTEM USING DIGITAL MODELS OF THE BAM LARGE DROP TEST FACILITY IN HORSTWALDE
***Ralf Herrmann**, Falk Hille, S. Said, Jens Sterthaus, Karsten Müller, Thomas Quercetti, Frank Wille, J.-A. Paffenholz, Matthias Baeßler*

19704 APPLICATION OF A CLASSIFICATION ALGORITHM TO THE EARLY-STAGE DAMAGE DETECTION OF A MASONRY ARCH
***Alberto Barontini**, Maria Giovanna Masciotta, Paulo Amado Mendes, Luís Ramos, Paulo Lourenço*

19860 VIBRATION-BASED DAMAGE DETECTION APPLIED TO A CONCRETE ARCH-DAM
***Sérgio Pereira**, Filipe Magalhães, Álvaro Cunha, Jorge Gomes, José Lemos*

19886 A FULLY AUTOMATED OMA PROCEDURE WITH ADAPTIVE TRACKING OF LONG-TERM MONITORING DATA: AN APPLICATION TO MASONRY TOWERS
***Giacomo Zini**, Michele Betti, Gianni Bartoli*

Tuesday, November 24 **Room 2**
10:00-12:00

MS 20 - I: MOVING LOADS
MS Organizers: T. Mazilu, A.V. Metrikine, K.N. van Dalen, W.M. Zhai

18596 SIMPLIFIED DYNAMIC RESPONSE ANALYSIS OF A RAILWAY BRIDGE CONSIDERING SOIL-STRUCTURE INTERACTION
***Christoph Adam**, Benjamin Hirzinger*

19838 ABNORMAL SHOCK OF A SEVEN-SPAN LAMINATED BEAM BRIDGE UNDER MOVING HIGHWAY AND LIGHT-RAIL VEHICLES
***Zhi Sun**, Feng-Zong Gong, Yafeng Niu, Qi Hu*

20270 DYNAMIC EFFECT OF TRAINS WITH ARTICULATED COACHES AND JACOBS BOGIES WITH INTEGER WHEELBASE RATIOS
***Pedro Museros**, Andreas Andersson, Raid Karoumi*

19179 TRANSITION RADIATION IN A NONLINEAR AND INFITE 1-D STRUCTURE
***Andrei B. Fărăgău**, João Manuel de Oliveira Barbosa, Andrei V. Metrikine, Karel N. van Dalen*

19221 AN INFINITE LATTICE MODEL FOR STUDYING BALLAST BEHAVIOUR IN ZONES OF STIFFNESS VARIATIONS IN RAILWAY TRACKS
***João Manuel De Oliveira Barbosa**, Karel N. van Dalen*

19602 DYNAMIC RESPONSE OF SINGLE AND MULTI-SPAN BEAMS UNDER A MOVING LOAD USING DYNAMIC STIFFNESS FORMULATIONS AND GALERKIN'S METHOD
***Baran Bozyigit**, Sinan Acikgoz, Yusuf Yesilce*

21831 THEORETICAL ASSESSMENT OF VERTICAL INTERACTION BETWEEN A WHEELSET AND TRACK: INFLUENCE OF THE TRACK DAMPING MODEL
*Traian Mazilu, **Marius Alin Gheți***

20183 HOW CONSERVATIVE IS THE NORWEGIAN FATIGUE LOAD MODEL FOR SERVICE LIFE ESTIMATION OF RAILWAY BRIDGES?
***Maria Zakharova**, Gunnstein T. Frøseth, Anders Rönnquist*

Tuesday, November 24 **Room 3**
10:00-12:00

MS 11 - II: BRIDGE DYNAMICS

20045 SEISMIC PERFORMANCE OF BRIDGES ISOLATED WITH DCFP DEVICES
***Paolo Castaldo**, Guglielmo Amendola, Diego Gino, Elena Miceli*

20136 MEASUREMENTS OF AMBIENT VIBRATIONS FOR A CABLE-STAYED BRIDGE INCLUDING THE SOIL-FOUNDATION SYSTEM
*Vanni Nicoletti, **Davide Arezzo**, Sandro Carbonari, Francesca Dezi, Fabrizio Gara*

MS 19: BLAST AND IMPACT LOADS

19097 IMPACT DAMAGE CHARACTERIZATION AT RC PLATES WITH PLANAR TOMOGRAPHY AND FEM
***Deborah Nerger**, Robabeh Moosavi, Franz Bracklow, Marcus Hering, Tino Kühn, Manfred Curbach, Falk Hille, Andreas Rogge*

19160 MODEL REDUCTION FOR STRUCTURES SUBJECTED TO BLAST LOADING BY USE OF DYNAMIC SUBSTRUCTURING
***Linus Andersson**, Peter Persson, Kent Persson*

19455 2DOF BLAST ANALYSIS OF BUILDINGS
***Sander Meijers**, Peter Flink, Harm Kraaijenbrink, Meindert Wiersma*

20157 PROTECTION OF MASONRY STRUCTURES AGAINST EXPLOSIONS APPLYING LAYERS OF TEXTILE REINFORCED MORTAR
***Leonidas Alexandros Kouris**, Georgios Valsamos, Savvas Triantafyllou, Vasileios Karlos, Daniel A. Pohoryles, Dionysios A. Bournas, Martin Larcher, Folco Casadei*

Tuesday, November 24 **Room 4**
10:00-12:00

MS 38 - I: GENERAL SESSION ON STRUCTURAL DYNAMICS, STABILITY AND VIBRATIONS
MS Organizers: G. De Roeck, M. Fragiadakis, C. Papadimitriou, M. Papadrakakis

20288 MODAL PROPERTIES OF A FLOOR WITH SINGLE-LEAF PLYWOOD ON TIMBER JOISTS: EXPERIMENTAL AND NUMERICAL MODELLING
***Lars Vabbersgaard Andersen**, Nina Jørgensen, Gitte Skovlund Iversen, Jannick Balleby Hansen*

18452 ANALYSIS OF A NOVEL AND COMPACT X-STRUCTURED MOUNT (X-MOUNT) WITH WIDER QUASI-ZERO-STIFFNESS RANG
***Jing Bian**, Xingjian Jing*

18837 CALCULATION DISPERSIONS AND ERRORS OF SHIP HULL AND SUPERSTRUCTURE VIBRATIONS
***Lech Murawski**, Do Van Doan*

18896 EVALUATION OF A PUSHOVER PROCEDURE FOR ASYMMETRIC R/C BUILDINGS WITH VARIOUS TORSIONAL PROPERTIES
***Grigorios Manoukas**, Asimina Athanatopoulou*

19054 WIND EFFECTS ON LOW-RISE BUILDINGS WITH NEIGHBOURING STRUCTURE AS OBSTACLES
***Josue U. Rodriguez-Alcantara**, Adrian Pozos-Estrada, Roberto Gomez-Martinez*

19263 DISCUSSION ON THE CAPACITY DESIGN OF COLUMNS IN LOW-RISE BARE AND INFILLED RC MOMENT FRAMES
***Alexios Papasotiriou**, Asimina Athanatopoulou*

19314 EVALUATION OF VIBRATION CHARACTERISTICS OF RC AND PPC BEAM MEMBERS UNDER CYCLIC TRAIN LOADING
Munemasa Tokunaga

12:00-12:10
Break

TECHNICAL SESSIONS

Tuesday, November 24 **Room 1**
12:10-14:10

MS 8 - IV: STRUCTURAL HEALTH MONITORING
MS Organizers: J. Conte, A. Cunha, G. Lombaert, B. Moaveni, P. Omenzetter, C. Papadimitriou

20087 VIBRATION-BASED ANOMALY DETECTION USING SPARSE AUTO-ENCODER AND CONTROL CHARTS
***Rafaelle Finotti**, Carmelo Gentile, Flávio Barbosa, Alexandre Cury*

20127 DESIGN OF A MONITORING SYSTEM FOR A LONG-SPAN SUSPENSION BRIDGE: OPTIMAL SENSOR PLACEMENT
***Øyvind Wiig Petersen**, Ole Øiseth, Gunnstein Thomas Frøseth*

20133 COMPARISON OF ALTERNATIVE DYNAMIC VIBRATION MITIGATION APPROACHES FOR WIND TURBINE TOWERS
*Konstantinos A. Kapasakalis, **Pyros-Orfeas N. Bollano**, Evangelos J. Sapountzakis, Ioannis A. Antoniadis*

20148 AN INTEGRATED MONITORING STRATEGY FOR CURRENT CONDITION ASSESSMENT OF HISTORIC BRIDGES
***Gabriele Ravizza**, Rosalba Ferrari, Egidio Rizzi, Vasillis Dertimanis, Eleni Chatzi*

20171 APPLICATION OF WAVELET SYNCHRO-SQUEEZED TRANSFORM (WSST) METHOD TO RAILWAY BRIDGE HEALTH MONITORING
*Neda Mostafa, Richard Loendersloot, **Dario Di Maio**, Tiedo Tinga*

20257 DETECTION OF CLAMPING FORCE LOSS IN BOLTED JOINTS OF RAIL SUPPORTS IN CONSIDERATION OF CHANGING AMBIENT TEMPERATURE
***Anna-Lena Dreisbach**, Volkan Yokaribas, Gerhard Dietrich, Daniel Sahm, Daniel Pak, Claus-Peter Fritzen*

20300 ON THE AXIAL FORCE IDENTIFICATION IN EULER-BERNOULLI BEAMS WITH UNKNOWN BOUNDARY CONDITIONS
*Margaux Geuzaine, Francesco Foti, **Vincent Denoël***

19456 TOWARDS STRUCTURAL HEALTH MONITORING BASED RISK BASED INSPECTION PLANNING FOR OFFSHORE WIND TURBINE SUPPORT STRUCTURES
***Simon Tewolde**, Ruediger Höffer, Inka Mueller*

Tuesday, November 24 **Room 2**
12:10-13:30

MS 20 - II: MOVING LOADS
MS Organizers: T. Mazilu, A.V. Metrikine, K.N. van Dalen, W.M. Zhai

19188 INSTABILITY OF VIBRATIONS OF AN OSCILLATOR MOVING AT HIGH SPEED THROUGH A TUNNEL EMBEDDED IN SOFT SOIL
***Mingjuan Zhao**, João Manuel de Oliveira Barbosa, Jun Yuan, Andrei V. Metrikine, Karel N. van Dalen*

18770 DYNAMIC STUDY OF A RAILWAY TRACK SUBJECTED TO MOVING LOADS
***Maryam El Moueddeb**, François Louf, Pierre-Alain Boucard, Franck Dadie, Gilles Saussine, Danilo Sorrentino*

19124 MOVING LOAD ON AN ELASTIC HALF-SPACE COATED WITH A THIN VERTICALLY INHOMOGENEOUS LAYER
*Saad Althobaiti, Vladimir Bratov, **Ali Mubaraki**, Danila Prikazchikov*

19879 THE IN-PLANE STEADY-STATE RESPONSE OF A RING IN RELATIVE MOTION TO A CONSTANT LOAD
***Tao Lu**, Apostolos Tsouvalas, Andrei Metrikine*

20067 TRAIN-WEIGHT-IN-MOTION IDENTIFICATION MEASURING TIME-HISTORIES OF RAIL STRAINS
***Annamaria Pau**, Fabrizio Vestroni*

Tuesday, November 24 **Room 2**
13:30-14:30

ROUND TABLE MS 20: MOVING LOADS

Moderator: Karel van Dalen
Panel: Andrei Metrikine, Geert Degrande, Gerhard Müller, Nicholas Alexander

Agenda:
- Major challenges in the field of moving-load problems
- Methods can be used to address these problems
- Discussion of a few recent papers on moving loads
- Answering questions raised by the audience during the session.

Tuesday, November 24 **Room 3**
12:10-14:10

MS 12 - I: FOOTBRIDGE VIBRATIONS
MS Organizers: E. Caetano, F. Tubino, P. Van den Broeck, K. Van Nimmen

18786 INTERVAL SERVICEABILITY ASSESSMENT OF FOOTBRIDGES
*Roberta Santoro, Alba Sofi, **Federica Tubino***

19104 DYNAMIC PROPERTIES OF TWO PEDESTRIAN WOODEN BRIDGES INCLUDING SEASONAL EFFECTS
*John Hallak Neilson, Aida Ibisevic, Hasanhüseyin Ugur, **Jean-Marc Battini**, Roberto Crocetti, Costin Pacoste, Maria D. Martinez-Rodrigo*

18430 PERFORMANCE OF INERTIAL MASS CONTROLLERS FOR ULTRA-LIGHT FOOTBRIDGES: A CASE STUDY
***Carlos M. C. Renedo**, Iván M. Díaz, Justin M. Russel, Stana Živanović*

18902 CLOSED-FORM SOLUTION OF THE RESPONSE OF SINGLE PEDESTRIAN INDUCED LOAD FOR CLAMPED-CLAMPED BRIDGES
***Daniel Colmenares**, Andreas Andersson, Raid Karoumi*

19008 NUMERICAL VALIDATION OF THE GENERALISED EQUIVALENT SPECTRAL MODEL THROUGH CROWD DYNAMICS SIMULATIONS
***Fiammetta Venuti**, Federica Tubino*

19289 PERFORMANCE OF BIODYNAMIC MODELS TO REPRESENT THE ACTION OF A PEDESTRIAN IN THE VERTICAL DIRECTION
*Rafaela Silva, **Roberto Pimentel**, Aleksandar Pavic*

Tuesday, November 24 **Room 4**
12:10-14:10

MS 38 - II: GENERAL SESSION ON STRUCTURAL DYNAMICS, STABILITY AND VIBRATIONS
MS Organizers: G. De Roeck, M. Fragiadakis, C. Papadimitriou, M. Papadrakakis

18623 TEMPERATURE INFLUENCE ON FREE VIBRATIONS OF VISCOELASTIC MINDLIN PLATES
***Przemysław Litewka**, Roman Lewandowski*

19321 EXPERIMENTAL STUDY ON THE FRACTURE BEHAVIOR OF AN RC PILE GROUP FOUNDATION USING A CENTRIFUGE MODEL
***Yuichi Miyachi**, Kazuhiro Hayashi, Shuhei Takahashi, Taiki Saito*

19334 SSI EFFECTS ON R/C ONE-STOREY BUILDINGS UNDER SEISMIC LOADINGS
***Paraskevi K. Askouni**, Dimitris L. Karabalis, Dimitri E. Beskos*

19375 THE RESPONSE OF DIFFERENT BUILDINGS TO FREE-FIELD EXCITATION – A STUDY USING DETAILED FINITE ELEMENT MODELS
***Lutz Auersch**, Susanne Ziemens*

19472 INVESTIGATION OF AN ACTIVELY CONTROLLED ROBOT ARM FOR VIBRATION SUPPRESSION IN MILLING
***Muhammet Ozsoy**, Neil D. Sims, Erdem Ozturk*

19605 AN EVALUATION OF THE CURRENT APPROACHES AND RECOMMENDATIONS FOR MORE RATIONAL APPROACHES FOR ASSESSING THE SEISMIC TORSIONAL STABILITY OF BUILDINGS
*Bryam Astudillo, **Francisco Flores**, Sebastian Pozo, Finley Charney*

19662 VIBRATION CONTROL BY STRUCTURAL COUPLING IN ADJACENT STRUCTURES USING STOCHASTIC ANALYSIS
***Augusto Pippi**, José Luis de Brito, Suzana Avila, Graciela Doz*

20345 COMPARATIVE EVALUATION OF THE METHODS PROPOSED BY THE GREEK CODE FOR STRUCTURAL INTERVATION (KAN.EPE.) FOR THE ESTIMATION OF CURVATURE DUCTILITY
***Konstantinos Morfidis**, Christos Karakostas, Sotiria Stefanidou*

14:10-15:10
Mid-day Break

TECHNICAL SESSIONS

Tuesday, November 24 **Room 1**
15:30-16:30

ROUND TABLE MS 8: STRUCTURAL HEALTH MONITORING

Moderator: Joel Conte
Panel: Alvaro Cunha, Geert Lombaert, Babak Moaveni, Piotr Omenzetter, Costas Papadimitriou

Agenda: To be announced

Tuesday, November 24 **Room 2**
15:10-17:10

MS 5: DYNAMIC FLUID-STRUCTURE INTERACTION

20439 NONLINEAR STRUCTURAL BEHAVIOUR OF AN ARCH DAM UNDER STATIC AND DYNAMIC LOADS
*Carla Ferreira, **Helena Barros***

19773 THE EFFECT OF FOLDING WINGTIPS ON THE FLIGHT DYNAMICS OF AN AIRCRAFT WITH ELASTIC WING
***Davide Balatti**, Hamed Haddad Khodaparast, Michael Friswell, Marinos Manolesos, Mohammadreza Amoozgar*

21578 A NEW OPEN SOURCE SOLVER FOR MODELLING FLUID-STRUCTURE INTERACTION: CASE STUDY OF A POINT-ABSORBER WAVE ENERGY CONVERTER WITH POWER TAKE-OFF UNIT
***Bonaventura Tagliafierro**, Rosario Montuori, Ioannis Vayas, Pablo Ropero, Alejandro Crespo, Jose Domınguez, Corrado Altomare, Giacomo Viccione, Moncho Gomez Gesteira*

MS 30 - I: RECENT ADVANCES IN PERFORMANCE-BASED ENGINEERING AND DESIGN OF STRUCTURES AND CIVIL INFRASTRUCTURE SYSTEMS SUBJECTED TO SINGLE OR MULTIPLE HAZARDS
MS Organizers: M. Barbato, J. Conte

18571 DETECTION AND CHARACTERISATION OF INTERNAL INTERFACIAL DEBONDING ON COMPOSITE STRUCTURAL SANDWICH PANELS USING ACOUSTIC EMISSION
***Eleni Tsangouri**, Matthias De Munck, Hasan Ismail, Dimitrios Aggelis, Tine Tysmans*

18851 RISK-TARGETED MAPS FOR ALICANTE PROVINCE (SPAIN)
***Alireza Kharazian**, Sergio Molina, Juan Jose Galiana-Merino, Noelia Agea-Medina*

18977 OPTIMIZATION BASED SEISMIC DESIGN OF DAMPED OUTRIGGERS SUBJECTED TO STOCHASTIC EXCITATIONS
***Itamar Netzer**, Oren Lavan*

19175 EFFECT OF MODELLING ASSUMPTIONS ON THE SEISMIC PERFORMANCE ASSESSMENT OF THIN REINFORCED CONCRETE WALL BUILDINGS
*Orlando Arroyo, **Dirsa Feliciano**, Julián Carrillo, José Colombo*

20456 FRAGILITY CURVES FOR RC FRAMED BUILDINGS SUBJECTED TO EARTHQUAKE-INDUCED LANDSLIDE: COMPARISON BETWEEN 2D AND 3D STRUCTURAL MODELS
***Giacomo Miluccio**, Fulvio Parisi, Edoardo Cosenza*

Tuesday, November 24 **Room 3**
15:10-17:10

MS 12 - II: FOOTBRIDGE VIBRATIONS
MS Organizers: E. Caetano, F. Tubino, P. Van den Broeck, K. Van Nimmen

20003 AN OPEN ACCESS BENCHMARK DATASET ON PEDESTRIAN-INDUCED VIBRATIONS COLLECTED ON THE EEKLO FOOTBRIDGE
Peter Van den Broeck, Jeroen Van Hauwermeiren, ***Katrien Van Nimmen***

20005 IDENTIFICATION OF HUMAN-STRUCTURE INTERACTION BASED ON FULL-SCALE OBSERVATIONS
Katrien Van Nimmen*, Jeroen Van Hauwermeiren, Peter Van den Broeck*

19494 MOTION-BASED DESIGN OF ACTIVE TUNED MASS DAMPERS TO CONTROL PEDESTRIAN-INDUCED VIBRATIONS IN FOOTBRIDGES UNDER UNCERTAINTY CONDITIONS
Javier Fernando Jiménez-Alonso*, Jose Manuel Soria, Carlos Martín de la Concha Renedo, Francisco Guillen González*

19969 CONTACT FORCE RECONSTRUCTION ON VIBRATING SURFACES
Jeroen Van Hauwermeiren*, Katrien Van Nimmen, B. Vanwanseele, Peter Van den Broeck*

20247 A NOVEL METHOD FOR INDIRECT MEASUREMENT OF GROUND REACTION FORCES ON VIBRATING STRUCTURES
Andrei Firus*, Roman Kemmler, Hagen Berthold, Steven Lorenzen, Jens Schneider*

Tuesday, November 24 **Room 4**
15:10-17:10

MS 38 - III: GENERAL SESSION ON STRUCTURAL DYNAMICS, STABILITY AND VIBRATIONS
MS Organizers: G. De Roeck, M. Fragiadakis, C. Papadimitriou, M. Papadrakakis

19266 ELASTIC AXIS OF MONOSYMMETRIC BUILDINGS UNDER EARTHQUAKE EXCITATION
Vasiliki Terzi, ***Asimina Athanatopoulou***

19720 STUDY OF A HYBRID INVERTED PENDULUM TUNED MASS DAMPER BEHAVIOR USING A PID CONTROL
Jonas Pereira Falcão*, Ledymar Foncault Moreno, José Luis Vital de Brito, Marcus Vinicius Girão de Morais, Suzana Moreira Avila*

19840 SUB-STRUCTURING APPROACH OF THE PREDICTION OF BUILDING VIBRATIONS INDUCED BY RAILWAY TRAFFIC
Chao He*, Shunhua Zhou, Peijun Guo, Honggui Di*

19852 A TUNED MASS DAMPER INERTER CONTROL DEVICE FOR BASE-ISOLATED STRUCTURES
Salah Djerouni, Mouncef Eddine Charrouf, Abdelhafid Ounis, ***Mahdi Abdeddaim****, Nassim Djedoui*

19895 FUNDAMENTAL PERIOD RELATIONSHIP OF RC-BUILDINGS IN ALICANTE PROVINCE (SPAIN). A FIRST STEP TO SOIL-STRUCTURE RESONANCE MAPS
Noelia Agea-Medina*, Alireza Kharazian, Sergio Molina, Juan José Galiana-Merino, Juan Luís Soler-Llorens*

19911 MEASURING THE DYNAMIC DISPLACEMENTS OF BRIDGES USING GEOPHONE DATA: APPLICATION AND VALIDATION ON A LIVELY FOOTBRIDGE
Paolo Borlenghi*, George Piniotis, Harris Perakis, Vassilis Gikas, Carmelo Gentile*

19954 SEISMIC RESPONSE OF ADJACENT BUILDING STRUCTURE CONNECTED WITH SUPERELASTIC DAMPER: COMPARISON WITH YIELD DAMPER
*Sourav Gur, **Pranay Singh**, Koushik Roy*

19831 ADEQUACY OF ACCIDENTAL ECCENTRICITY IN ACCOUNTING FOR THE EFFECTS OF THE TORSIONAL COMPONENT OF EARTHQUAKES ON THE SEISMIC DAMAGE
*Konstantinos Morfidis, **Konstantinos Kostinakis**, Nikolaos Pneymatikos*

17:10-17:20
Break

TECHNICAL SESSIONS

Tuesday, November 24 **Room 1**
17:20-19:20

MS 7 - I: SYSTEM IDENTIFICATION AND DAMAGE DETECTION
MS Organizers: E. Chatzi, G. De Roeck

19091 VARIANCE ESTIMATION IN DATA-DRIVEN STOCHASTIC SUBSPACE IDENTIFICATION
Edwin Reynders

18767 VIBRATIONS FOR ESTIMATING BOLTED JOINT INTEGRITY (VEBJI) PROJECT: CHALLENGES AND RESULTS
***Dmitri Tcherniak**, Jon Juel Thomsen, Marie Brøns*

18788 REDUCTION OF QUANTIZATION AND CLIPPING ERRORS USING BAYESIAN VIRTUAL SENSORS
Jyrki Kullaa

18808 VIBRATION-BASED DAMAGE LOCALIZATION WITH DENSITY RATIO ESTIMATION METHOD
***Yulong Zhang**, John Macdonald, Paul Harper, Song Liu*

19193 PARAMETRIC SPECTRAL ESTIMATION AND DYNAMICS IDENTIFICATION FOR TRAVELING SURFACE VEHICLES
***Ilias A. Iliopoulos**, Spilios D. Fassois, John S. Sakellariou*

19311 SYSTEM IDENTIFICATION AND DAMAGE DETECTION FRAMEWORK USING SIMULATING EXPERIMENTS AND MACHINE LEARNING TECHNIQUES
***Panagiotis Seventekidis**, Dimitrios Giagopoulos, Alexandros Arailopoulos, Olga Markogiannaki*

19323 SEQUENTIAL BAYESIAN MODEL UPDATING FOR ONLINE VIBRATION DATA ASSIMILATION AND SHM
Luis David Avendaño-Valencia

19465 ASSESSING GWT FEASIBILITY IN PERIODIC ASSEMBLIES USING A BLOCH MODELLING FRAMEWORK
***Christophe Droz**, Regis Boukadia, Elke Deckers, Wim Desmet*

Tuesday, November 24 **Room 2**
17:20-19:20

MS 30 - II: RECENT ADVANCES IN PERFORMANCE-BASED ENGINEERING AND DESIGN OF STRUCTURES AND CIVIL INFRASTRUCTURE SYSTEMS SUBJECTED TO SINGLE OR MULTIPLE HAZARDS
MS Organizers: M. Barbato, J. Conte

19279 SENSITIVITY OF SPECIAL STEEL MOMENT FRAMES TO THE INFLUENCE OF COLUMN-BASE HYSTERETIC BEHAVIOR INCLUDING GRAVITY FRAMING SYSTEM
***Pablo Torres-Rodas**, Francisco Flores, Bryam Astudillo, Sebastian Pozo*

19304 A MULTI-OBJECTIVE OPTIMAL PARAMETER DESIGN PROCEDURE FOR SLIDE BRIDGE BEARINGS UNDER SEISMIC EXCITATION BASED ON A DETERMINISTIC-STOCHASTIC MODELING APPROACH
***Xinhao He**, Akira Igarashi*

19493 PRELIMINARY DESIGN OF ADAPTIVE RESCUE CUSHION
***Rami Faraj**, Krzysztof Hinc, Błażej Popławski, Dorian Gabryel, Tomasz Kowalski, Cezary Graczykowski*

19718 PARAMETRIC ANALYSIS AND COMPARISON OF MODELS USED IN THE ANALYSIS OF STEEL STRUCTURES
***Bryam Astudillo**, Sebastian Pozo, Francisco Flores*

19761 SEISMIC RESILIENCE ASSESSMENT FOR THE G7 HIGHWAY BRIDGE IN GREECE
***Akrivi Chatzidaki**, Konstantinos Bakalis, Dimitrios Vamvatsikos*

20046 SEISMIC RELIABILITY-BASED DESIGN OF STRUCTURES EQUIPPED WITH DFPS
***Paolo Castaldo**, Gaetano Alfano*

20207 GRADIENT-BASED MULTI-HAZARD OPTIMIZATION OF TUNED MASS DAMPERS FOR TALL BUILDINGS
***Shalom Kleingesinds**, Oren Lavan*

Tuesday, November 24 **Room 3**
17:20-18:20

ROUND TABLE MS 12: FOOTBRIDGE VIBRATIONS

Moderator: Elsa Caetano
Panel: Federica Tubino, Katrien Van Nimmen, Elsa Caetano

Agenda:
- Load models and vibration serviceability assessment
- Human-structure interaction
- Vibration testing and mitigation

Tuesday, November 24 **Room 4**
17:20-19:20

MS 38 - IV: GENERAL SESSION ON STRUCTURAL DYNAMICS, STABILITY AND VIBRATIONS
MS Organizers: G. De Roeck, M. Fragiadakis, C. Papadimitriou, M. Papadrakakis

20246 INTERRELATION BETWEEN NEW HILBERT-HUANG TRANSFORM-BASED SEISMIC INTENSITY PARAMETERS AND STRUCTURAL DAMAGE
*Magdalini Tyrtaiou, **Anaxagoras Elenas***

20098 GAP MONITORING IN REFURBISHMENT TASKS IN A FERRONICKEL FURNACE AT CERRO MATOSO SA
*Diego Alexander Tibaduiza, **Jersson León** , Luis Bonilla, Bernardo Rueda, Oscar Zurita, Juan Carlos Forero, Jaime Vitola, Dario Segura, Edwin Forero, Maribel Anaya*

20441 EFFECTS OF ALTERNATING AXIAL FORCES ON THE RECYCLING RESPONSE OF REINFORCED CONCRETE FRAMES STRENGTHENED BY TENSION-TIES
***Angelos Liolios**, George Hatzigeorgiou, Panagiotis Panetsos, Dimitrios Konstantinidis*

20444 CORRECTION OF LASER DOPPLER VIBROMETER MEASUREMENTS AFFECTED BY SENSOR HEAD VIBRATION USING TIME DOMAIN TECHNIQUES
***Abdel Darwish**, Ben Halkon, Sebastian Oberst, Robert Fitch, Steve Rothberg*

20452 THE DISSIPATIVE CHARACTERISTICS OF OBLATE PARTICLES IN GRANULAR DAMPERS
***Furkan Terzioglu**, Jem A. Rongong, Charles E. Lord*

20543 MODELLING PLANAR ROCKING STRUCTURES USING SIMPLIFIED NUMERICAL MODELS
***Spyridon Diamantopoulos**, Michalis Fragiadakis*

20585 PREDICTION OF BEAM DYNAMICS IN CABLE-BEAM SYSTEMS THROUGH EXPERIMENTAL-NUMERICAL DECOUPLING
***Mohammad Hadi Jalali**, Geoff Rideout*

20060 SURFACE WAVE PROPAGATION FROM DROP-PROJECTILE TESTS: PHYSICAL AND NUMERICAL MODELLING
***Vipul Kumar**, S.P.G Madabhushi*

19:20-19:30
Break

TECHNICAL SESSIONS

Tuesday, November 24 **Room 1**
19:30-21:30

MS 7 - II: SYSTEM IDENTIFICATION AND DAMAGE DETECTION
MS Organizers: E. Chatzi, G. De Roeck

19498 DEMINING WAR SCENARIOS: A PROJECT BASED ON NEW TECHNOLOGIES
***Federica Mezzani**, Gianluca Pepe, Nicola Roveri, Antonio Carcaterra, Stefano Solferini*

19581 LIE SYMMETRIES OF NONLINEAR SYSTEMS WITH UNMEASURED INPUTS
***Xiaodong Shi**, Manolis Chatzis*

19620 VIBRATION TESTING BASED ON EVOLUTIONARY OPTIMIZATION TO IDENTIFY STRUCTURAL FAILURES AND DAMAGE IN GLULAM COMPONENTS
*Juan Peña-Lasso, **Rebeca Sanchez-Ruiz**, Alvaro Gaute, Ignacio Lombillo, Ramon Sancibrian, Oscar Ramon Ramos*

19621 A METHODOLOGY ON INTERPRETABLE NOVELTY DETECTION
***Artur Movsessian**, David Garcia Cava, Dmitri Tcherniak, R. Janeliukstis*

19628 INVESTIGATION ON DAMAGE SENSITIVE FEATURES FOR OPTIMAL SENSOR NETWORKS BASED ON REAL-SCALE RECORDINGS
***Said Quqa**, Michelangelo Malatesta, Panagiotis Martakis, Artur Movsessian*

19763 TOWARDS DATA-DRIVEN DAMAGE IDENTIFICATION FOR EXISTING BUILDINGS
***Panagiotis Martakis**, Yves Reuland, Eleni Chatzi*

19920 ON THE PROBLEM OF ON–BOARD VIBRATION–BASED FAULT DETECTION IN RAILWAY SUSPENSIONS UNDER VARYING OPERATING CONDITIONS: A FEASIBILITY STUDY
***Georgios Vlachospyros**, Nikolaos Kaliorakis, Ilias A. Iliopoulos, Spilios D. Fassois, John S. Sakellariou, Alexandros Deloukas, George Leoutsakos, Ilias Chronopoulos, Christos Mamaloukakis*

20084 A DISPERSION-BASED METHODOLOGY FOR THE IN SITU ASSESSMENT OF BENDING STIFFNESS IN BRIDGE CABLES
***João Rodrigues**, Elsa Caetano, João Santos*

21131 DAMAGE FEATURE RECOGNITION BASED ON LAMB WAVES DETECTION
*Xiaohui Wang, Jinhui Liang, **Bin Zhang**, Yeping Xiong, Jun Gao*

20232 MAXIMUM LIKELIHOOD ESTIMATION OF DAMPING IN THE FREQUENCY DOMAIN DECOMPOSITION METHOD
Javier Cara

Tuesday, November 24 **Room 2**
19:30-20:30

MS 30 - III: RECENT ADVANCES IN PERFORMANCE-BASED ENGINEERING AND DESIGN OF STRUCTURES AND CIVIL INFRASTRUCTURE SYSTEMS SUBJECTED TO SINGLE OR MULTIPLE HAZARDS
MS Organizers: M. Barbato, J. Conte

20310 GLOBAL AND LOCAL PERFORMANCE LEVELS ON THE PROBABILISTIC EVALUATION OF THE STRUCTURAL POUNDING EFFECT BETWEEN ADJACENT RC STRUCTURES
***Maria Flegga**, Maria Favvata*

20457 IMPACT OF CUMULATIVE DAMAGE ON FRAGILITY OF RC FRAMED BUILDINGS SUBJECTED TO EARTHQUAKE-INDUCED LANDSLIDES
***Giacomo Miluccio**, Fulvio Parisi, Edoardo Cosenza*

19768 LIMITATIONS OF EUROCODE 8 DUAL DUCTILITY CLASS APPROACH IN SEISMIC DESIGN OF RC HIGH-RISE BUILDINGS
***Jelena Pejovic,** Nina Serdar, Radenko Pejovic*

20035 OPTIMAL VISCOUS DAMPER PLACEMENT TO PREVENT POUNDING OF ADJACENT BUILDINGS
*Huseyin Cetin, **Baki Ozturk**, Ersin Aydin*

Tuesday, November 24 **Room 2**
20:30-21:30

ROUND TABLE MS 30: RECENT ADVANCES IN PERFORMANCE-BASED ENGINEERING AND DESIGN OF STRUCTURES AND CIVIL INFRASTRUCTURE SYSTEMS SUBJECTED TO SINGLE OR MULTIPLE HAZARDS

Moderator: Michele Barbato
Panel: Joel P. Conte, Dimitrios Vamvatsikos, Maria Favvata

Agenda: Performance-Based Engineering: Recent advances, current challenges, and future opportunities

Tuesday, November 24 **Room 3**
19:30-21:30

MS 15 - I: DYNAMICS OF ON -AND OFF-SHORE WIND ENERGY STRUCTURES (WES)
MS Organizers: C. Borri, E. Marino, C.C. Baniotopoulos, R. Höffer, F. Magalhães

18939 SURROGATE MODEL FORMULATION FOR STOCHASTIC FLUTTER ANALYSIS OF WIND TURBINE BLADES UNDER UNCERTAIN AERODYNAMICS LOADS
Luca Caracoglia

18391 DYNAMICS OF TENSEGRITY SOLAR FAÇADES OPERATING AS MECHANICAL ENERGY HARVESTERS
*Raffaele Miranda, **Enrico Babilio**, Narinder Singh, Diana P. Villamil, Filipe Santos, Fernando Fraternali*

18485 STRUCTURAL SAFETY IMPROVEMENT OF OFFSHORE TALL WIND TURBINE UNDER WIND, CURRENT AND WAVE LOADINGS
***Yu Hu**, Jian Yang, Charalampos Baniotopoulos, Xinger Wang, Xiaowei Deng*

18891 SPATIAL DISTRIBUTED CHARACTERISTICS OF DYNAMIC RESPONSE OF JACKET SUPPORTED OFFSHORE WIND TURBINES SUBJECTED TO HURRICANE INDUCED ENVIRONMENTAL LOADS
***Bowen Jiang**, Qingshan Yang, Guoqing Huang, Min Liu*

19345 VARIATION OF THE MODAL PROPERTIES OF A WIND TURBINE BLADE DURING A FATIGUE TESTING
***Riccardo Riva**, Marcin Luczak, Süleyman Cem Yeniceli, Steen Hjelm Madsen, Emilio Di Lorenzo, Bart Peeters*

19508 A SYSTEMATIC INVESTIGATION OF COMMON GRADIENT BASED MODEL UPDATING APPROACHES APPLIED TO HIGH-FIDELITY TEST-DATA OF A WIND TURBINE ROTOR BLADE
***Johannes Knebusch**, Janto Gundlach, Yves Govers*

19512 PLATFORM OPTIMIZATION OF LARGE FLOATING OFFSHORE WIND ENERGY STRUCTURES
***Giulio Ferri**, Enzo Marino, Claudio Borri*

Tuesday, November 24 **Room 4**
19:30-21:30

MS 27: STOCHASTIC DYNAMICS AND RELIABILITY ANALYSIS OF STRUCTURAL AND MECHANICAL SYSTEMS UNDER ENVIRONMENTAL EXCITATION
MS Organizers: M. Barbato, M. Vasta

20388 PERFORMANCE-BASED WIND ENGINEERING CONSIDERATIONS FOR STEEL STRUCTURES SUBJECT TO HURRICANE WIND LOADS
***Michele Barbato**, Mirsardar Esmaeili*

19806 EXTREME DYNAMIC RESPONSE OF EXTENDED BRIDGE STRUCTURES SUBJECTED TO INHOMOGENEOUS ENVIRONMENTAL LOADING
***Bernt Leira**, Jian Dai*

18654 RELIABILITY ASSESSMENT OF THE DYNAMIC BEHAVIOR OF HIGH-SPEED RAILWAY BRIDGES USING FIRST ORDER RELIABILITY METHOD
***Reza Allahvirdizadeh**, Andreas Andersson, Raid Karoumi*

19612 EFFICIENT ESTIMATION OF THE SKEWNESS OF THE RESPONSE OF A WAVE-EXCITED OSCILLATOR
***Margaux Geuzaine**, Vincent Denoël*

20134 UNCERTAINTY ABOUT ENVIRONMENTAL VIBRATION TESTS: A CASE STUDY
***Alice Di Primio**, Noemi Fiorini, Daniele Spina, Claudio Valente, Marcello Vasta*

20275 RESPONSE OF NONLINEAR SECONDARY OSCILLATORS IN CASCADE TO RANDOM EXCITATION
***Stavros Kasinos**, Eleni Chatzi, Christian Málaga-Chuquitaype*

MS 37: CONSERVATION, RETROFIT AND STRENGTHENING OF EXISTING STRUCTURES: INNOVATIONS IN APPLIED METHODS AND MATERIALS

MS Organizers: M. Corradi, C. Maniatakis, C. Spyrakos

21645 SHEAR STRENGTHENING OF MASONRY PANELS USING A GFRP-REINFORCED MORTAR COATING
G. Castori, E. Speranzini, ***M. Corradi****, S. Agnetti, G. Bisciotti*

TECHNICAL SESSIONS

Wednesday, November 25 **Room 1**
10:00-11:00

MS 7 - III: SYSTEM IDENTIFICATION AND DAMAGE DETECTION
MS Organizers: E. Chatzi, G. De Roeck

20141 A PSEUDO-INVERSE APPROACH TO THE PHYSICAL MODEL ESTIMATION PROBLEM. CAPACITIES AND LIMITATIONS
***Alvaro Magdaleno**, Jose M. Soria, Antolin Lorenzana*

20168 MODAL IDENTIFICATION OF STRUCTURES DURING STATIC LOAD TESTING: INTERACTION EFFECTS
***Antolin Lorenzana**, Alvaro Magdaleno, Tomislav Jarak, Roberto Martinez, Antonio Balmori, Luis-Alfonso Basterra, Lara del Val, Juan J. Villacorta, Alberto Izquierdo*

20178 AN INTEGRATED VIBRATION-IMAGE PROCEDURE FOR DAMAGE IDENTIFICATION IN STEEL TRUSSES
***Marianna Crognale**, Vincenzo Gattulli, Salvador Ivorra, Francesco Potenza*

20237 A NUMERICAL INVESTIGATION OF NEW ALGORITHMS FOR THE DRIVE-BY METHOD IN RAILWAY BRIDGE MONITORING
***Lorenzo Bernardini**, Marco Carnevale, Claudio Somaschini, K. Matsuoka, Andrea Collina*

Wednesday, November 25 **Room 1**
11:00-12:00

ROUND TABLE MS 7: SYSTEM IDENTIFICATION AND DAMAGE DETECTION

Moderators: Eleni Chatzi, Guido De Roeck
Panel: Vincenzo Gattulli, Dmitri Tcherniak, Manolis Chatzis, Jyrki Kullaa, Edwin Reynders

Agenda:
- Damage identification by different data sources and processing: images and vibration signals
- Use of the modern machine learning techniques in System Identification and Damage Detection: explained and interactive machine learning
- Monitoring: Practical limitations versus observability requirements
- Data-based damage detection: feature domain or time domain?
- Recent developments in structural health monitoring from operational dynamic strain measurements

Wednesday, November 25 **Room 2**
10:00-12:00

MS 16 - I: VIBRATION-BASED ASSESSMENT AND SHM OF CULTURAL HERITAGE STRUCTURES
MS Organizer: C. Gentile

20096 MEASUREMENTS OF THE COLOSSEUM RESPONSE TO ENVIRONMENTAL ACTIONS
***Fabrizio Vestroni**, Adriano De Sortis, Annamaria Pau*

19802 ENVIRONMENTAL EFFECTS ON THE DYNAMIC CHARACTERISTICS OF A HISTORIC CATHEDRAL
*Carmelo Gentile, **Antonello Ruccolo***

18809 STATISTICAL PROCESS CONTROL PROCEDURES FOR ONLINE DAMAGE DETECTION OF A MONUMENTAL MASONRY PALACE: THE CONSOLI PALACE IN GUBBIO, ITALY
***Enrique García Macías**, Filippo Ubertini*

19019 EFFECT OF NOISE IN THE TIME-FREQUENCY ESTIMATE OF THE PERIDYNAMIC BOND ELASTIC CONSTANT PARAMETER
***Gaetano Miraglia**, Rosario Ceravolo, G. Coletta*

19173 DYNAMIC MODELLING OF TRAM-INDUCED VIBRATION ON THE TEMPLE OF MINERVA MEDICA IN ROME
***Fernando Saitta**, Sara Forliti, Alessandro Colucci, Angelo Tatì, Ivan Roselli*

19223 ENHANCED CONTINUOUS DYNAMIC MONITORING OF A COMPLEX MONUMENTAL PALACE THROUGH A LARGER SENSOR NETWORK
*Alban Kita, Ilaria Venanzi, **Nicola Cavalagli**, Enrique Garcia-Macias, Filippo Ubertini*

19376 THE 3-D ROCKING DYNAMICS OF RIGID BODIES WITH IRREGULAR GEOMETRIES
***M. David Burton**, Manolis N. Chatzis*

19414 FE MODEL UPDATING OF MASONRY TOWERS: MODELING AND NUMERICAL ISSUES
*Riccardo Mario Azzara, Maria Girardi, Cristina Padovani, **Daniele Pellegrini**, Leonardo Robol*

Wednesday, November 25 **Room 3**
10:00-12:00

MS 15 - II: DYNAMICS OF ON -AND OFF-SHORE WIND ENERGY STRUCTURES (WES)
MS Organizers: C. Borri, E. Marino, C.C. Baniotopoulos, R. Höffer, F. Magalhães

19778 FATIGUE OF WELDED TUBULAR CONNECTIONS
*Theocharis Papatheocharis, Gregory Sarvanis, Philip Perdikaris, **Spyros Karamanos**, Anna Zervaki*

19729 A MODEL UPDATING APPROACH FOR IDENTIFICATION OF OFFSHORE WIND TURBINE FOUNDATION STIFFNESS
***Emily F. Anderson**, Ross A. McAdam, Manolis N. Chatzis*

19731 MONITORING OF OFFSHORE WIND TURBINES UNDER WAVE AND WIND LOADING DURING INSTALLATION
***Aljoscha Sander**, Christian Meinhardt, Klaus-Dieter Thoben*

20010 WIND TURBINE ROTOR BLADE VIBRATION – APPLICATION OF TWO ALTERNATIVE MODAL DECOMPOSITION PROCEDURES
Evgueni Stanoev

19890 EXPERIMENTAL EVALUATION OF BENDING MOMENTS AT THE TOWER OF AN ONSHORE WIND TURBINE
***João Pacheco**, Francisco Pimenta, Álvaro Cunha, Filipe Magalhães*

Wednesday, November 25 **Room 4**
10:00-12:00

MS 31 - I: EUROPEAN ETN "DYNAMIC VIRTUALISATION: MODELLING PERFORMANCE OF ENGINEERING STRUCTURES" (DYVIRT)
MS Organizers: M. Beer, V. Fragkoulis, D. Wagg, K. Worden

18748 EVALUATION OF THE SEISMIC RESPONSE OF A STRUCTURE WITH AN ATTACHED PENDULUM USING STOCHASTIC REAL-TIME HYBRID SIMULATION
***Nikolaos Tsokanas**, Bozidar Stojadinovic*

18861 PARAMETER INVESTIGATION OF RELAXED UNCERTAIN POWER SPECTRA FOR STOCHASTIC DYNAMIC SYSTEMS
***Marco Behrendt**, Marius Bittner, Liam Comerford, Matteo Broggi, Michael Beer*

19021 AN APPLICATION OF GENERATIVE ADVERSARIAL NETWORKS IN STRUCTURAL HEALTH MONITORING
***George Tsialiamanis**, Eleni Chatzi, N. Dervilis, David Wagg, Keith Worden*

19118 A PROBABILISTIC APPROACH TOWARDS UNCERTAINTY QUANTIFICATION IN JOINED STRUCTURES
***Atmaram Muraleedharan**, Robert Barthorpe, Keith Worden*

19353 ON THE USE OF NONLINEAR NORMAL MODES FOR NONLINEAR MODEL ORDER REDUCTION
***Thomas Simpson**, Nikolaos Dervilis, Eleni Chatzi*

19432 DYNAMIC HYBRID COUPLING OF ELASTIC WAVE PROPAGATION: STABILITY ANALYSIS
***Siddhesh Raorane**, Tadeusz Uhl, Pawel Packo*

19499 KALMAN-BASED COUPLED RESPONSE-INPUT ESTIMATION DURING ENVIRONMENTAL TESTS ON THE BOX ASSEMBLY WITH REMOVABLE COMPONENT STRUCTURE
***Silvia Vettori**, Emilio Di Lorenzo, Bart Peeters, Eleni Chatzi*

12:00-12:10
Break

TECHNICAL SESSIONS

Wednesday, November 25 **Room 1**
12:10-14:10

MS 32: COMPUTATIONAL METHODS FOR STOCHASTIC DYNAMICS
MS Organizers: M. Beer, V. C. Fragkoulis, I. A. Kougioumtzoglou, I.P. Mitseas

19727 INCREMENTS AND DIFFERENTIALS IN THE STOCHASTIC ANALYSIS OF FRACTIONAL DIFFERENTIAL EQUATIONS
***Mario Di Paola**, Antonina Pirrotta*

19435 CROSS ENTROPY-BASED IMPORTANCE SAMPLING FOR FIRST PASSAGE PROBABILITY ESTIMATION OF LINEAR STRUCTURES WITH PARAMETER UNCERTAINTIES
***Iason Papaioannou**, Oindrila Kanjilal, Daniel Straub*

19121 RESPONSE EVOLUTIONARY POWER SPECTRUM DETERMINATION OF NONLINEAR OSCILLATORS WITH FRACTIONAL DERIVATIVE ELEMENTS
***Vasileios Fragkoulis**, Ioannis Kougioumtzoglou, Athanasios Pantelous, Michael Beer*

20022 INCREMENTAL NONLINEAR STOCHASTIC DYNAMICS TECHNIQUE OF THE FIRST-PASSAGE TIME
Ioannis P. Mitseas

18400 SENSITIVITY ANALYSIS OF SAFETY PERFORMANCE OF THE BURIED PIPELINES UNDER SURCHARGE
***Zhiqiang Wang**, Zhenyu Lei*

19815 WIND FIELD DATA EXTRAPOLATION BASED ON WIND TURBINE MEASUREMENT RECORDS VIA COMPRESSIVE SAMPLING
***George Pasparakis**, Liam Comerford, Ioannis Kougioumtzoglou, Michael Beer*

20286 PEAK RESPONSE DETERMINATION OF NONLINEAR OSCILLATORS WITH FRACTIONAL DERIVATIVE ELEMENTS UNDER CODE-COMPLIANT STOCHASTIC SEISMIC EXCITATIONS
***Peihua Ni**, Ioannis P. Mitseas, Vasileios Fragkoulis, Ioannis A. Kougioumtzoglou, Michael Beer*

21821 A MACHINE LEARNING APPROACH FOR PARAMETRIC TIME HISTORY ANALYSIS
***Stefanos D. Nikolopoulos**, Vissarion Papadopoulos, Ioannis Kalogeris*

Wednesday, November 25 **Room 2**
12:10-14:10

MS 16 - II: VIBRATION-BASED ASSESSMENT AND SHM OF CULTURAL HERITAGE STRUCTURES
MS Organizer: C. Gentile

19395 A NOVEL PROCEDURE FOR DYNAMIC IDENTIFICATION FROM AMBIENT VIBRATION DATA
*Alberto Di Matteo, Iain Peter Dunn, Chiara Masnata, **Antonina Pirrotta**, Salvatore Russotto*

19775 INFLUENCE OF IMPORTANT STRUCTURAL STRENGTHENING ON THE DYNAMIC PROPERTIES OF A MASONRY ARCH BRIDGE
***Chiara Pepi**, Nicola Cavalagli, Massimiliano Gioffrè, Vittorio Gusella*

19789 A MULTIDISCIPLINARY APPROACH INTEGRATING GEOMATICS, DYNAMIC FIELD TESTING AND FINITE ELEMENT MODELING TO EVALUATE THE CONSERVATION STATE OF THE GUIMARÃES CASTLE'S TOWER KEEP
***Luis Javier Sánchez-Aparicio**, Maria Giovanna Masciotta, Daniele Pellegrini, Borja Conde, Maria Girardi, Cristina Padovani, Luis Ramos, Belén Riveiro*

19809 A DAMAGE LOCALISATION PROCEDURE FOR MASONRY TOWERS BASED ON FREQUENCY DATA
***Paolo Borlenghi**, Carmelo Gentile, Antonella Saisi*

20050 MODAL PARAMETERS IDENTIFICATION ON ENVIRONMENTAL TESTS OF ANCIENT BELL TOWERS AND VALIDATION OF THEIR NUMERICAL MODELS
*Francesco Clementi, **Gianluca Standoli**, Ersilia Giordano, Angela Ferrante, Stefano Lenci*

20167 ASSESSMENT OF THE TRM REINFORCEMENT OF WINDOWED MASONRY WALLS THROUGH OMA IDENTIFICATION
***Salvador Ivorra**, Domenico Camassa, David Bru, Ignacio Gisbert, Anna Castellano, Aguinaldo Fraddosio, Mario Daniele Piccioni*

20235 MODAL IDENTIFICATION OF THE SAN FRANCESCO CHURCH IN PISA, ITALY
***Emanuele Lorenzo**, F. Canessa, Giuseppe Chellini, Anna De Falco, Carlo Resta, E. Savelli, Giacomo Sevieri*

20298 DYNAMIC ANALYSIS OF THE INTERACTION BETWEEN BELLS AND MASONRY STRUCTURES
***David Bru**, Salvador Ivorra, Michele Betti, Gianni Bartoli, F. Javier Baeza, F. Borja Varona*

18845 SEISMIC RISK ASSESSMENT OF A MEDIEVAL TOWER: THE CASE STUDY OF CRACO
*Michela Lerna, Maria F. Sabbà, Mariella Diaferio, Leonarda Carnimeo, **Salvador Ivorra**, Dora Foti*

Wednesday, November 25 **Room 3**
12:10-13:10

ROUND TABLE MS 15: DYNAMICS OF ON- AND OFF-SHORE WIND ENERGY STRUCTURES (WES)

Moderators: Claudio Borri, Enzo Marino, Ruediger Hoeffer
Panel: Claudio Borri, Enzo Marino, Ruediger Hoeffer

Agenda:

- structural Health Monitoring and fatigue problems
- wind mapping (site assessment & classification) and analyses of the site turbulence features
- wind-structure dynamic interaction on WES elements (tower, rotor blades), , computational methods
- on-shore structures: wind-soil-structure interaction, including seismic actions; , computational methods
- off-shore structures (fixed bottom): wind-wave-structure dynamic interaction, nonlinear waves, advanced loading models, "ringing" phenomena (dynamic amplification), computational methods
- off-shore structures (floating systems in deep water): dynamics of platforms, mooring lines and risers, computational methods
- fatigue problems and life-long maintainance
- uncertainty quantification & structural health monitoring for large on- and off-shore WES
- WES for the urban built environment (towards future smart cities)
- Examples of realized and/or designed (ongoing) wind farm projects

Wednesday, November 25 **Room 4**
12:10-14:10

MS 31 - II: EUROPEAN ETN "DYNAMIC VIRTUALISATION: MODELLING PERFORMANCE OF ENGINEERING STRUCTURES" (DYVIRT)
MS Organizers: M. Beer, V. Fragkoulis, D. Wagg, K. Worden

19651 COMPUTATIONALLY EFFICIENT HIERARCHICAL BAYESIAN MODELING FRAMEWORK FOR LEARNING EMBEDDED MODEL UNCERTAINTIES
***Xinyu Jia**, Omid Sedehi, Costas Papadimitriou, Lambros S. Katafygiotis*

19912 ON THE IMPLEMENTATION OF ADAPTIVE INVERSE CONTROL TO VIRTUAL TRANSFER SYSTEMS
***Thomas Simpson**, Vasilis Dertimanis, Eleni Chatzi*

19022 A NEAT APPROACH TO STRUCTURAL HEALTH MONITORING
***George Tsialiamanis**, David Wagg, N. Dervilis, Keith Worden*

20121 ROBUST BAYESIAN OPTIMAL SENSOR PLACEMENT FOR MODEL PARAMETER ESTIMATION AND RESPONSE PREDICTION
***Tulay Ercan**, Petros Koumoutsakos, Costas Papadimitriou*

20230 RESPONSE EVOLUTIONARY POWER SPECTRUM DETERMINATION OF LINEAR AND NONLINEAR STRUCTURAL SYSTEMS WITH SINGULAR MATRICES SUBJECTED TO NON-STATIONARY STOCHASTIC EXCITATION
***George Pasparakis**, Vasileios C. Fragkoulis, Liam Comerford, Ioannis P. Mitseas, Michael Beer*

20420 MULTISCALE MECHANICAL MODELING OF MXENE NANOCOMPOSITES FOR QUASI-STATIC AND DYNAMIC LOADS
***Shreyas Srivatsa**, Krzysztof Grabowski, Tadeusz Uhl*

20431 UNCERTAINTY QUANTIFICATION FRAMEWORK FOR STRUCTURAL MODEL OF WIND TURBINE BLADES
***Paulo Gonzaga**, Keith Worden, Nikolaos Dervilis, Nevena Stevanovic, Lars Oliver Bernhammer, Henrik Stensgaard Toft*

20085 BAYESIAN COMPRESSIVE SENSING BASED EVOLUTIONARY POWER SPECTRUM ESTIMATION FOR INCOMPLETE PROCESS RECORDS
***Sebastian Kruse**, Edoardo Patelli, Michael Beer*

14:10-15:10
Mid-day Break

SEMI-PLENARY LECTURES

Wednesday, November 25 **Room 1**
15:10-17:00

19585 DYNAMICS OF MECHANICAL MULTIBODY SYSTEMS WITH MOTION CONSTRAINTS
Sotirios Natsiavas

20435 UNDERSTANDING, REDUCING AND TRACKING DYNAMICS: BEYOND LINEAR TIME INVARIANT SYSTEMS
Eleni Chatzi

21822 DYNAMICS AND VIBROACOUSTICS OF MONOPOLES FOR OFFSHORE WIND TURBINES
Andrei Metrikine

Wednesday, November 25 **Room 2**
15:10-17:00

21902 COMPREHENSIVE TREATMENT OF UNCERTAINTIES IN THE PERFORMANCE-BASED SEISMIC DESIGN OF ORDINARY BRIDGES
*Angshuman Deb, **Joel P. Conte**, Jose I. Restrepo*

21651 UNSUPERVISED LEARNING AND PHYSICS-BASED METHODS FOR SHM: CHALLENGES AND TRENDS FOR SAFEGUARDING BUILT HERITAGE IN SEISMIC ZONES
Filippo Ubertini

21891 EXPERIMENTAL ASSESSMENT AND MODEL CALIBRATION OF A LARGE MULTI-SPAN QUASI-PERIODIC VIADUCT
***Geert Lombaert**, Jie Zhang, Kristof Maes, Guido De Roeck*

17:00-17:10
Break

TECHNICAL SESSIONS

Wednesday, November 25 **Room 1**
17:10-19:10

MS 18: VIBRO-ACOUSTICS
MS Organizer: S. Sorokin

20417 ACCELERATED VIBRO-ACOUSTICS OF POROUS DOMAINS VIA A NOVEL COUPLED MULTISCALE VIRTUAL ELEMENT METHOD
*Savvas Triantafyllou, **Abhilash Sreekumar**, Francois-Xavier Bécot, Fabien Chevillotte*

19881 A NOVEL VIEW ON THE COMPOSITION OF ENERGY FLOW IN MULTI-MODAL WAVEGUIDES
***Lasse S. Ledet**, Sergey V. Sorokin*

20000 ACOUSTIC BLACK HOLE PROFILE OPTIMIZATION
*Horia Cornean, Sergey Sorokin, **Benjamin Støttrup***

20002 NOISE REDUCTION USING THE CONCEPT OF ACOUSTIC BLACK HOLES DESIGNED BASED ON MODAL ANALYSIS
*Bjørnar Saurdal, **Daniel Villadsen**, Sergey Sorokin, Lasse Ledet*

20006 OPTIMIZATION OF PERFORMANCE OF WAVEGUIDES USING THE WAVE FINITE ELEMENT METHOD
***Peter Broberg**, Mikkel Steffensen, Sergey Sorokin, Lasse Ledet*

19397 GLOBAL LONG WAVE APPROXIMATIONS FOR ELASTIC WAVEGUIDES
*Kirill Cherednichenko, Julius Kaplunov, **Danila Prikazchikov**, Leyla Sultanova*

19128 WAVE-RESOLVING AIRCRAFT FUSELAGE MODEL FOR CABIN NOISE PREDICTIONS UNDER DISTRIBUTED FLUID LOADINGS
***Christopher Blech**, Sabine C. Langer*

19396 BAND STRUCTURE OF ELASTIC BODIES WITH PERIODIC NONLOCALITIES
***A. S. Rezaei**, S. V. Sorokin, F. Mezzani, A. Carcaterra*

Wednesday, November 25 **Room 2**
17:10-19:10

MS 10: ADVANCES ON INERTER-BASED STRUCTURAL VIBRATION CONTROL
MS Organizers: A. Giaralis, A. Taflanidis

18630 OPTIMUM DESIGN OF A TUNED-INERTER-HYSTERETIC-DAMPER (TIHD) FOR BUILDING STRUCTURES SUBJECTED TO EARTHQUAKE BASE EXCITATIONS
***Predaricka Deastra**, David Wagg, Neil Sims*

19441 SEISMIC PROTECTION OF MULTI-STOREY ROCKING STRUCTURES WITH INERTERS
***Rodrigo Thiers-Moggia**, Christian Málaga-Chuquitaype*

19507 THE EFFECTS OF PARASITIC MASS ON THE PERFORMANCE OF INERTER-BASED DYNAMIC VIBRATION ABSORBERS
***Hakan Dogan**, Neil Sims, David Wagg*

MS 21: TRAFFIC INDUCED VIBRATIONS
MS Organizers: G. Degrande, G. Lombaert, G. Müller

18854 REDUCING VIBRATIONAL IMPACT LATERAL OF A RAILWAY TRACK ON AN URBAN DEVELOPMENT PROJECT
*Felix Mertens, **Thomas Jaquet***

18929 IMPROVED FLOATING SLAB TRACK PERFORMANCE BY ON TOP INSTALLED TUNED MASS DAMPER
***Thomas Jaquet**, Wang Bo*

19550 THE USE OF MULTIPLE MODELS TO ANALYSE RAILWAY TRACK GROUND DYNAMICS
***Panudech Chumyen**, David Connolly, Kaitai Dong, Pedro Costa, Paulo Soares, Peter Woodward*

19878 SUBSOIL MODELLING FOR RAILWAY INDUCED VIBRATIONS
***Bruno Zuada Coelho**, Sven Lentzen, Maarten Pronk, Dirk de Lange, Eleni Smyrniou, Marc Hijma*

20252 MITIGATION OF VIBRATION INDUCED BY RAILWAY TRAFFIC USING GRANULAR BARRIERS
***Patryk Dec**, Régis Cottereau, Baldrik Faure*

19830 OURS - INTRODUCING THE DUTCH FORMAL MODEL FOR RAILWAY VIBRATION
Arnold Koopman

Wednesday, November 25 **Room 3**
17:10-19:10

MS 34 - I: VIBRATION ABSORPTION
MS Organizers: I. Antoniadis, E. Sapountzakis

19454 DESIGN OF A BROADBAND ELASTIC METAMATERIAL VIA TOPOLOGICALLY OPTIMIZED INERTIAL AMPLIFICATION MECHANISMS
*Osman Yuksel, **Cetin Yilmaz***

18611 EFFECT OF DIFFERENT CONFIGURATIONS OF THE GEOFOAM FILLED BARRIER IN VIBRATION SCATTERING AND ITS OPTIMIZATION BY GENETIC ALGORITHM
***Mehran Naghizadehrokni**, Martin Ziegler*

18646 INVESTIGATING THE DISSIPATIVE EFFECTS OF A PARTICLE DAMPER OVER A WIDE FREQUENCY RANGE
***Chandramouli Gnanasambandham**, Peter Eberhard*

19276 ACOUSTIC PERFORMANCE EVALUATION OF A PANEL UTILIZING NEGATIVE STIFFNESS MOUNTING FOR LOW FREQUENCY NOISE CONTROL
*Andreas Paradeisiotis, **Moris Kalderon**, Ioannis Antoniadis, Kalliopi Fouriki*

19278 A MACHINE MOUNT BASED ON THE KDAMPER FOR VIBRATION ABSORPTION AT LOW FREQUENCIES
***Andreas Paradeisiotis**, Konstantinos Tsioumanis, Ioannis Antoniadis, Kalliopi Fouriki*

19387 NONLINEAR MULTIPHYSICS VIBRATION ABSORBER
***Bastien Cadiou**, Cyrille Stephan, Guilhem Michon, Adrien Renoult*

19599 VIBRATION ABSORPTION PERFORMANCE OF METAMATERIAL LATTICES CONSISTING OF IMPACT DAMPERS
***Kyriakos Chondrogiannis**, Vasilis Dertimanis, Sami Masri, Eleni Chatzi*

Wednesday, November 25 **Room 4**
17:10-18:10

ROUND TABLE MS 31: EUROPEAN ETN "DYNAMIC VIRTUALISATION: MODELLING PERFORMANCE OF ENGINEERING STRUCTURES" (DYVIRT)

Moderator: Michael Beer
Panel: David Wagg, Tadeusz Uhl, Eleni Chatzi, Keith Worden, Bart Peeters

Agenda:

- Overview of the DyVirt project:opportunities and challenges
- Multiscale and multidomain modeling in virtualization
- Monitoring-based real time estimation for virtualization
- "Aspects of V&V for Digital Twins"
- Digital Twin: from concept to value creation across the product lifecycle"

19:10-19:20
Break

TECHNICAL SESSIONS

Wednesday, November 25 **Room 1**
19:20-21:20

MS 23: ASSESSMENT OF INDUSTRIAL STRUCTURES AND INFRASTRUCTURE UNDER NATURAL HAZARDS
MS Organizers: K. Bakalis, V. Melissianos, D. Vamvatsikos

19632 SIMPLIFIED ESTIMATION OF DESIGN FAULT DISPLACEMENT FOR BURIED PIPELINES AT FAULT CROSSING
***Vasileios Melissianos**, Dimitrios Vamvatsikos*

19438 EXPLORING THE UPLIFT MECHANICS OF UNANCHORED LIQUID STORAGE TANKS UNDER SEISMIC LOADING
***Konstantinos Bakalis**, Spyros Karamanos*

19090 FULL SCALE DYNAMIC TESTING OF WALL PANEL CONNECTIONS FOR PRECAST INDUSTRIAL BUILDINGS
***Ilaria Venanzi**, Laura Ierimonti, Filippo Ubertini, Annibale Luigi Materazzi, Leonardo Casali, Giuseppe Paci*

19159 A GROUND MOTION MODEL FOR SEISMIC VULNERABILITY ASSESSMENT OF PROTOTYPE INDUSTRIAL PLANTS
***Chiara Nardin**, Rocco Di Filippo, Roberto Endrizzi, Igor Lanese, Fabrizio Paolacci, Oreste Salvatore Bursi*

19673 A RAPID AND EFFICIENT SEISMIC PERFORMANCE ASSESSMENT METHOD FOR INDUSTRIAL FACILITIES IN TURKEY
***Hasan Numan Olmez**, Derya Deniz*

20023 PERFORMANCE ASSESSMENT OF INFRASTRUCTURES EXPOSED TO WINDBLOWN SAND HAZARD
***Lorenzo Raffaele**, Luca Bruno*

MS 25 - I: EXPERIMENTAL EARTHQUAKE ENGINEERING
MS Organizers: M. Fragiadakis, H. Mouzakis

19825 STATIC TESTING OF ADDITIVELY MANUFACTURED MICROREINFORCED CONCRETE SPECIMENS FOR STATISTICAL STRUCTURAL MODEL VALIDATION AT SMALL SCALE
***Lorenzo Del Giudice**, Rafal Wrobel, Christian Leinenbach, Michalis F. Vassiliou*

18582 EXPERIMENTAL INVESTIGATION OF THE INFLUENCE OF TENSILE STRAIN ON THE CRACKING OF R/C VERTICAL STRUCTURAL ELEMENTS
***Theodoros A. Chrysanidis**, Vassilis P. Panoskaltsis*

19006 EXPERIMENTAL STUDY ON WIND TURBINE TOWER WITH CONCRETE-FILLED DOUBLE SKIN STEEL TUBE SECTION SUBJECT TO CYCLIC TORSION
*Yu-Hang Wang, Shu-Qi Wang, **Guo-Bing Lu**, Ji-Ke Tan*

Wednesday, November 25 **Room 2**
19:20-21:20

MS 26: UQ AND PROBABILISTIC LEARNING IN COMPUTATIONAL DYNAMICS
MS Organizers: M. Arnst, R. Ghanem, C. Soize

19487 UNCERTAINTY MANAGEMENT IN REDUCED ORDER MODELS OF THE NONLINEAR GEOMETRIC RESPONSE OF STRUCTURES
Pengchao Song, X.Q. Wang, ***Marc Mignolet***

18394 IDENTIFICATION OF A STOCHASTIC PROCESS MODELING THE STIFFNESS OF THE VOCAL FOLDS FOR A VOICE PRODUCTION MODEL REPRESENTED BY A NEURAL NETWORK
Edson Cataldo*, Christian Soize, R.L. Silva, João Marcos Silva*

18434 AIRSHIP GUST RESPONSE PROBABILISTIC MODEL CONSTRUCTION
Fabrice Poirion*, Guy Mortchelewicz*

19282 MACHINE LEARNING BASED ON NEURAL NETWORKS FOR THE INVERSE IDENTIFICATION OF PROBABILITY DISTRIBUTIONS - APPLICATION TO THE AXIAL TRANSMISSION TECHNIQUE FOR THE ULTRASONIC CHARACTERIZATION OF DAMAGED CORTICAL BONE PROPERTIES
Florent Pled*, Christophe Desceliers, Amir H. Gandomi*

19369 STOCHASTIC REDUCED-ORDER MODEL FOR SPENT NUCLEAR FUEL CONTAINERS
Olivier Ezvan*, Xiaoshu Zeng, Roger Ghanem, Bora Gencturk*

20282 POST-OPTIMAL DESIGN USING OPTIMAL UNCERTAINTY QUANTIFICATION
Luc Bonnet*, Éric Savin, T. J. Sullivan*

Wednesday, November 25 **Room 3**
19:20-21:20

MS 34 - II: VIBRATION ABSORPTION
MS Organizers: I. Antoniadis, E. Sapountzakis

19674 OPTIMAL CONTROL OF SEMI-ACTIVE SHOCK-ABSORBERS USING PONTRYAGIN'S MAXIMUM PRINCIPLE, GRADIENT-BASED METHODS AND DIRECT METHODS
Cezary Graczykowski*, Rami Faraj*

19963 ADVANCED NEGATIVE STIFFNESS VIBRATION ABSORBERS COUPLED WITH SOIL-STRUCTURE INTERACTION FOR SEISMIC PROTECTION OF BUILDINGS
Konstantinos Kapasakalis, ***Antonios Alvertos****, Antonios Mantakas, Ioannis Antoniadis, Evangelos Sapountzakis*

20128 OPTIMAL DESIGN OF ADVANCED NEGATIVE STIFFNESS ABSORBERS
Konstantinos A. Kapasakalis*, Ioannis A. Antoniadis, Evangelos J. Sapountzakis*

20481 DYNAMIC ANALYSIS OF AN ACTIVE ISOLATION MOUNT USING FEEDFORWARD AND FEEDBACK CONTROL SCHEMES
Grigorios Chatziathanasiou*, Nikolaos Chrysochoidis, Dimitris Saravanos*

MS 36: DAMPING MODELLING AND EXPERIMENTS
MS Organizer: A. Cicirello

18990 VALIDATION OF A STRUCTURAL MODEL OF A LARGE TIMBER TRUSS WITH SLOTTED-IN STEEL PLATES AND DOWELS
***Pierre Landel**, Andreas Linderholt*

19145 MDOF SYSTEMS WITH COULOMB DAMPING: BOUNDARIES OF MOTION REGIMES
***Luca Marino**, Alice Cicirello*

20153 MODELING THE MECHANICAL RESPONSE OF ORDERED MESH ARCHITECTURED MATERIALS
***Emiliano Ximenes**, Charles Lord, Jem Rongong*

Wednesday, November 25 **Room 4**
19:20-21:20

MS 2 - I: NON-LINEAR DYNAMICS
MS Organizers: J. Naprstek, G. Rega

20170 NONLINEAR HARDENING BEHAVIOR OF A HELMHOLTZ RESONATOR
***Emmanuel Gourdon**, Alireza Ture Savadkoohi, Claude-Henri Lamarque*

18699 NONLINEAR DYNAMICS OF A NEGATIVE STIFFNESS OSCILLATOR: EXPERIMENTAL IDENTIFICATION AND MODEL UPDATING
***Dario Anastasio**, Alessandro Fasana, Luigi Garibaldi, Stefano Marchesiello*

18796 SOLITARY WAVES FOR SEISMIC SITE RESPONSE
***Leo Dostal**, Marten Hollm, Andrei V. Metrikine, Federico Pisanò, Apostolos Tsouvalas, Karel N. van Dalen*

19055 GEOMETRICALLY NONLINEAR FORCED VIBRATIONS OF MULTIPLE-STEPPED EULER-BERNOULLI BEAMS
***Issam El Hantati**, Ahmed Adri, Hatim Fakhreddine, Said Rifai, Rhali Benamar*

19203 SUBSONIC STALL FLUTTER ANALYSIS IN 2D BLADE CASCADE USING HYBRID BOUNDARY ELEMENT METHOD
***Chandra Shekhar Prasad**, Ludek Pesek*

19213 GEOMETRICALLY NON-LINEAR FREE AND FORCED VIBRATION OF C-F-C-F RECTANGULAR PLATE AT LARGE TRANSVERSE AMPLITUDES
***Abdelfattah Majid**, El Mehdi Abdeddine, Khalid Zarbane, Zitouni Beidouri*

18562 MULTIPLE-SCALE ANALYSIS OF A DYNAMICAL SYSTEM FOR THE INTERFERENCE OF VORTEX-INDUCED VIBRATION AND GALLOPING
Claudio Mannini

19060 NONSMOOTH MODAL ANALYSIS WITH BOUNDARY ELEMENT METHOD
***Tianzheng Lu**, Mathias Legrand*

TECHNICAL SESSIONS

Thursday, November 26 **Room 1**
10:00-12:00

MS 25 - II: EXPERIMENTAL EARTHQUAKE ENGINEERING
MS Organizers: M. Fragiadakis, H. Mouzakis

20698 EXPERIMENTAL SEISMIC ASSESSMENT AND PROTECTION OF MUSEUM ARTEFACTS
***M. Fragiadakis**, L. Di Sarno, A. Saetta, M. G. Castellano, I. Rocca, S. Diamantopoulos, V. Crozet, I. Politopoulos, T. Chaudat, S. Vasic, I.E. Bal, E. Smyrou, I. Psycharis, T.C. Hutchinson , L. Berto*

20018 EXPERIMENTAL INVESTIGATION ON IN-PLANE AND OUT-OF-PLANE DISPLACEMENT CAPACITIES OF NON-STRUCTURAL CFS PARTITION WALLS
***Hyung-Joon Kim**, Dong-Hyeon Shin*

21641 A MACHINE LEARNING APPROACH TO NONLINEAR RESPONSE ANALYSIS OF STRUCTURES
***Panagiotis Georgakis**, Manolis Georgioudakis, Michalis Fragiadakis*

19608 HYBRID COLLAPSE TEST OF STEEL COLUMNS WITH NONLINEAR FRAME SUBSTRUCTURING AND FORCE REDISTRIBUTION
***Konstantinos Skalomenos**, Masahiro Kurata, Yoshiki Ikeda*

20080 MEASUREMENT OF SOIL STRAINS UNDER EARTHQUAKE LOADING
***Xiaoyu Guan**, Gopal Madabhushi, Mark Talesnick*

20105 STRUCTURAL PROPERTIES OF UNREINFORCED MASONRY WALLS CONSIDERING CONSTRUCTION QUALITIES
***Dong-Hyeon Shin**, Hyung-Joon Kim*

18887 EVALUATION OF CRACKING BEHAVIOR OF R/C VERTICAL COMPONENTS REINFORCED WITH VARYING LONGITUDINAL REINFORCEMENT RATIOS
***Theodoros A. Chrysanidis**, Vassilis P. Panoskaltsis*

19639 FRF-BASED MODAL TESTING OF HORIZONTALLY SWAYING STRUCTURES USING OCXO SYNCHRONIZED WIRELESS ACCELEROMETERS FOR SIMULTANEOUS FORCE AND VIBRATION RESPONSE MEASUREMENTS
*Wai Kei Ao, **Aleksandar Pavic***

Thursday, November 26 **Room 2**
10:00-12:00

MS 22 - I: DYNAMIC SOIL-STRUCTURE INTERACTION AND WAVE PROPAGATION
MS Organizers: D. Clouteau, A. Metrikine, G. Müller, J-F. Semblat

18744 SCATTERING OF ELASTIC WAVES BY TRANSVERSELY ISOTROPIC SPHERE
***Ata Jafarzadeh**, Peter D. Folkow, Anders Boström*

18897 A 2.5D FEM-BEM-MFS METHODOLOGY FOR SOIL-STRUCTURE INTERACTION PROBLEMS IN LAYERED HALF-SPACES
***Hassan Liravi**, Robert Arcos, Dhananjay Ghangale, Jordi Romeu*

19042 A NEW SEMI-ANALYTICAL APPROACH FOR DYNAMIC PILE-SOIL INTERACTION PROBLEM
***Kenny Conto**, Robert Arcos, Cecília Parente, Pedro Alves Costa, Jordi Romeu*

19162 STRUCTURE-SOIL-STRUCTURE INTERACTION ANALYSIS FOR REINFORCED CONCRETE FRAMED STRUCTURES
***Reine Fares**, Maria Paola Santisi d'Avila, Anne Deschamps, Evelyne Foerster*

19267 SOIL-STRUCTURE INTERACTION OF AN END-BEARING PILE FOUNDATION: DESIGN OF AN EXPERIMENTAL CASE STUDY
***Freddie Theland**, Jean-Marc Battini, Costin Pacoste, Geert Lombaert, Stijn François, Peter Blom, Fanny Deckner*

19373 THE EFFECTS OF MODEL ASSUMPTIONS ON THE DYNAMIC IMPEDANCE FUNCTIONS OF A SHALLOW FOUNDATION
***Johan Lind Östlund**, Andreas Andersson, Mahir Ülker-Kaustell, Jean-Marc Battini*

19388 ANALYSIS OF SEISMIC METASURFACES USING SPECIALISED ASYMPTOTIC MODELS FOR RAYLEIGH WAVES
***Peter Wootton**, Julius Kaplunov, Danila Prikazchikov*

Thursday, November 26 **Room 3**
10:00-12:00

MS 1 - I: ADVANCES IN COMPUTATIONAL STRUCTURAL DYNAMICS
MS Organizers: B. Balachandran, D. Duhamel, D. Giagopoulos, S. Natsiavas

18743 APPLICATION OF THE WAVE FINITE ELEMENT METHOD TO MULTI-SPAN BRIDGES
*Gabriele Paratore, Tien Hoang, Gilles Foret, Maria Pina Limongelli, **Denis Duhamel***

19306 NONLINEAR FORCE LAW SELECTION AND PARAMETER UPDATE FOR A CANTILEVER BEAM WITH PERIODICALLY REPEATED IMPACTS
***Alexandros Arailopoulos**, Dimitrios Giagopoulos*

19111 A VARIATIONAL APPROACH TO ASYNCHRONOUS TIME-INTEGRATION OF STRUCTURAL DYNAMICS PROBLEMS IN THE CONTEXT OF FETI AND SPURIOUS OSCILLATIONS ON THE INTERFACES
***Andreas Seibold**, Daniel Rixen*

19114 A MULTIBODY DYNAMICS MODEL FOR THE SEISMIC RETROFIT POTENTIAL OF BRIDGE EXPANSION JOINTS
***Michael Tahedl**, Andreas Taras, Fredrik Borchsenius, Daniel Rill*

19155 A DELAYED PRECONDITIONER APPROACH FOR SPEEDING-UP FREQUENCY RESPONSE COMPUTATION OF STRUCTURAL COMPONENTS
*Guilherme Jenovencio, **Arul Sivasankar**, Zeeshan Saeed, Daniel Rixen*

19361 SIMULATION-LEAN TRAINING-SETS FOR HYPER-REDUCTION OF PARAMETRIC GEOMETRIC NON-LINEAR STRUCTURES
***Christian H. Meyer**, Daniel J. Rixen*

19817 ISOGEOMETRIC COLLOCATION METHODS FOR THE DYNAMICS OF THREE-DIMENSIONAL GEOMETRICALLY EXACT BEAMS
***Enzo Marino**, Josef Kiendl, Laura De Lorenzis*

Thursday, November 26 **Room 4**
10:00-12:00

MS 2 - II: NON-LINEAR DYNAMICS
MS Organizers: J. Naprstek, G. Rega

19650 ESTIMATION OF FLUID-FILM FORCES AFTER BLADE LOSS IN A FLEXIBLE ROTOR
***Fadi Dohnal**, Athanasios Chasalevris, Heinz-Dieter Klement*

19214 NONLINEAR LONGITUDINAL FREE VIBRATION OF UNIFORM RODS AND RODS WITH SECTIONS VARYING EXPONENTIALLY
***EL Mehdi Abdeddine**, Abdelfattah Majid, Zitouni Beidouri, Khalid Zarbane*

19274 HARMONIC BALANCE METHOD FOR THE STATIONARY RESPONSE OF FINITE AND SEMI-INFINITE NONLINEAR DISSIPATIVE CONTINUA: THREE CANONICAL PROBLEMS
***Jiangyi Zhang**, Enxhi Sulollari, Andrei B. Fărăgău, Federico Pisanò, Pim van der Male, Mario Martinelli, Andrei V. Metrikine, Karel N. van Dalen*

19329 MEASUREMENTS OF NONLINEAR VIBRATIONS OF A BEAM SUBJECTED TO TWO BROADBAND CORRELATED RANDOM EXCITATIONS
***Sébastien Talik**, Maxence Claeys, Jean-Pierre Lambelin, Jean-Jacques Sinou*

19358 VIBRATION POWER FLOW TRANSMISSION BETWEEN NONLINEARLY COUPLED OSCILLATORS WITH DUAL FORCE EXCITATIONS
***Baiyang Shi**, Chendi Zhu, Jian Yang*

19420 STOCHASTIC DYNAMICAL RESPONSE OF A NON-SMOOTH DYNAMICAL SYSTEM UNDER FILTERED WHITE NOISE
***Saeed Gheisari Hasnijeh**, Arvid Naess*

19479 NONPARAMETRIC SPATIAL LOCATION IDENTIFICATION OF STRUCTURAL NONLINEARITIES FROM INPUT-OUTPUT DATA
***Giancarlo Kosova**, Emilio Di Lorenzo, Bart Peeters, Gaetan Kerschen*

19293 NODAL-BOUNDARY FINITE-ELEMENT METHOD FOR PERIODIC SOLUTIONS OF THE SIGNORINI PROBLEM
***David Urman**, Mathias Legrand*

12:00-12:10
Break

TECHNICAL SESSIONS

Thursday, November 26 **Room 1**
12:10-13:10

MS 25 - III: EXPERIMENTAL EARTHQUAKE ENGINEERING
MS Organizers: M. Fragiadakis, H. Mouzakis

19207 THE ST. SILVESTRO BELFRY IN L'AQUILA: FROM THE REHABILITATION WORKS TO THE ACTUAL PERFORMANCE IN TERMS OF DYNAMIC PROPERTIES AND FRAGILITY FUNCTIONS ESTIMATION
***Ilaria Capanna**, Riccardo Cirella, Angelo Aloisio, Rocco Alaggio, Franco Di Fabio, Massimo Fragiacomo*

19211 OUT-OF-PLANE SHAKING TABLE TESTS ON DUTCH BUILDING PRODUCTS
***Okke Bronkhorst**, C.P.W. Geurts*

19339 BEHAVIOUR OF REINFORCED CONCRETE STRANDS DURING TENSION TEST INSPECTED WITH DIC
***Haukur Eiriksson**, Bjarni Bessason*

19559 REVIEW OF SITE EFFECT MODELING METHODS CONSIDERING EXPERIMENTAL GEOPHYSICAL DATA
***Rita Abou-Jaoude**, Nisrine Makhoul, Jean-Alain Fleurisson, Alexandrine Gesret*

Thursday, November 26 **Room 1**
13:10-14:10

ROUND TABLE MS 25: EXPERIMENTAL EARTHQUAKE ENGINEERING

Moderator: Michalis Fragiadakis
Panel: Anastasios Sextos, Harris Mouzakis, Claudio Bernuzzi, Luis Calado

Agenda:
- The UKCRIC National Facility for Soil-Structure Interaction: design and construction challenges
- Experimental activities supporting rack design in seismic zones
- Dissipative systems for building seismic design
- Shaking table tests of resilient steel-concrete composite buildings

Thursday, November 26 **Room 2**
12:10-14:10

MS 22 - II: DYNAMIC SOIL-STRUCTURE INTERACTION AND WAVE PROPAGATION
MS Organizers: D. Clouteau, A. Metrikine, G. Müller, J-F. Semblat

19577 TRANSIENT ANALYSIS IN HALF-SPACE COMBINING IGA AND THE PERFECTLY MATCHED LAYER METHOD
***Arturo Méndez Salas**, Margarita Chasapi, Sven Klinkel*

19804 ELASTIC WAVES IN PARTICULATE GLASS-RUBBER MIXTURES
***Kianoosh Taghizadeh**, Stefan Luding, Vanessa Magnanimo, Holger Steeb*

19985 USE OF THE DOMAIN REDUCTION METHOD TO SIMULATE THE SEISMIC RESPONSE OF AN EXISTING STRUCTURE PROTECTED BY RESONATING UNIT CELL METAMATERIALS
***Constantinos Kanellopoulos**, Boris Jeremić, Ioannis Anastasopoulos, Božidar Stojadinović*

20228 THE EFFECT OF SOIL LIQUEFACTION ON THE SEISMIC PERFORMANCE OF A TYPICAL PORT QUAY WALL
***Stella Karafagka**, Stavroula Fotopoulou, Anna Karatzetzou, Georgia Kroupi, Kyriazis Pitilakis*

20291 MITIGATION OF GROUND VIBRATION FROM PILE DRIVING BY CIRCULAR ARRAYS OF RIGID BLOCKS PLACED ON THE GROUND SURFACE
*Lars Vabbersgaard Andersen, **Peter Persson**, Andrew T. Peplow*

20367 EXPERIMENTAL IDENTIFICATION OF THE DYNAMIC BEHAVIOUR OF PILE-SOIL SYSTEM INSTALLED BY MEANS OF THREE DIFFERENT PILE-DRIVING TECHNIQUES
*Athanasios Tsetas, **Sergio S. Gomez**, Apostolos Tsouvalas, Kees van Beek, Faraz S. Tehrani, Evangelos Kementzetzidis, Federico Pisano, Ahmed Elkadi, Maxim Segeren, Timo Molenkamp, Andrei V. Metrikine*

20369 DYNAMIC RESPONSE OF PERIODIC ELEVATED STRUCTURES DUE TO RAILWAY TRAFFIC
***Pieter Reumers**, Geert Lombaert, Geert Degrande*

Thursday, November 26 **Room 3**
12:10-14:10

MS 1 - II: ADVANCES IN COMPUTATIONAL STRUCTURAL DYNAMICS
MS Organizers: B. Balachandran, D. Duhamel, D. Giagopoulos, S. Natsiavas

20489 ANALYTICAL-NUMERICAL MODELING OF FLEXIBLE PYLONS FOR STRUCTURAL HEALTH MONITORING
***George D. Manolis**, Georgios Dadoulis, Stylianos Pardalopoulos, Kosmas Dragos*

19587 REGULARIZATION METHOD TO INCLUDE MATERIAL SOFTENING IN FIBER BEAM-COLUMN ELEMENTS FOR SEISMIC PERFORMANCE ASSESSMENT OF STEEL FRAMES
***Sebastián Pozo**, Bryam Astudillo, Esteban Samaniego, Francisco Flores*

19696 INFLUENCE OF SLENDERNESS RATIO IN THE MODAL ANALYSIS BY ANALYTICAL FORMULATION
***Jonas Falcão**, Rodolfo Carvalho, Renan Ribeiro, Ledymar Moreno, José De Brito*

19813 A SPACE-TIME FORMULATION IN STRUCTURAL MECHANICS USING THE PROPER GENERALIZED DECOMPOSITION
***Franz Bamer**, Nima Shirafkan, Abdelbacet Oueslati, Géry De Saxcé, Bernd Markert*

MS 4 - I: DYNAMICS OF COMPOSITE MATERIALS
MS Organizers: G. Bonnet, C. Boutin, S. Lenci

19117 METAMATERIALS WITH FIBERS OF ELLIPTIC CROSS-SECTION
***Guy Bonnet**, Vincent Monchiet*

18916 ANALYTICAL SOLUTIONS FOR THE FLEXURAL NATURAL VIBRATION OF THE COMPOSITE GIRDERS WITH CORRUGATED STEEL WEBS
*Yunsheng Li, Chaoxing Liu, Qingnian Dai, **Yanling Zhang***

18614 ON THE WAVE DYNAMICS OF MICROSCALE BISTABLE TENSEGRITY STRUCTURES
***Andrea Micheletti**, Zacharias Vangelatos, Narinder Singh, Costas P Grigoropoulos, Fernando Fraternali*

18718 PIECEWISE CONSTRUCTION OF WAVE DISPERSION CURVES IN ELASTIC PERIODIC NETWORKS BY ASYMPTOTIC MULTI-SCALE APPROACH
***Antoine Rallu**, Claude Boutin, Stéphane Hans*

Thursday, November 26 **Room 4**
12:10-14:10

MS 2 - III: NON-LINEAR DYNAMICS
MS Organizers: J. Naprstek, G. Rega

19238 NUMERICAL STUDY OF DYNAMIC PROPERTIES OF A SELECTED MATERIAL LAYER OF BULLETPROOF SHIELDS
*Miroslaw Bocian, **Krzysztof Jamroziak**, Maciej Kulisiewicz, Joanna Pach, Dariusz Pyka*

19579 A NEW TIME INTEGRATION SCHEME IN MULTIBODY DYNAMICS INVOLVING FRICTIONAL IMPACT BASED ON A RETURN MAP TO NON-FLAT CONFIGURATION MANIFOLDS
*Elias Paraskevopoulos, **Panagiotis Passas**, Sotirios Natsiavas*

19584 COMPUTING BACKBONE CURVES FOR NONLINEAR OSCILLATORS WITH HIGHER ORDER POLYNOMIAL STIFFNESS TERMS
***Ayman Nasir**, Neil Sims, David Wagg*

19672 TOWARD A SYSTEMATIC CONSTRUCTION OF THE BASIS FOR NONLINEAR GEOMETRIC REDUCED ORDER MODELS
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20542 THE EFFECT OF BUILDING'S RESPONSE ON THE FRAGILITY OF FREESTANDING SYMMETRIC OR ASYMMETRIC CONTENTS
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20091 NONLINEAR VIBRATIONS OF AN ELASTIC PLATE ON A VISCOELASTIC FOUNDATION MODELLED BY THE FRACTIONAL DERIVATIVE STANDARD LINEAR SOLID MODEL
*Marina V. Shitikova, **Anastasiya I. Krusser***

20195 EMPIRICAL EXPRESSION PREDICTING SEISMIC DISPLACEMENT OF SANDY SLOPES IN GREECE IN TERMS OF SOIL PROFILE TYPE USING NON-LINEAR DYNAMIC STICK-SLIP ANALYSIS
***Loukas C. Katsenis**, Constantine A. Stamatopoulos, Vassilis P. Panoskaltsis*

20212 SUPPRESSION OF CLASSICAL FLUTTER OSCILLATIONS IN BLADED WHEEL USING INNER DAMPING EFFECT
***Ludek Pesek**, Pavel Snabl, Ch. S. Prasad*

14:10-15:10
Mid-day Break

TECHNICAL SESSIONS

Thursday, November 26 **Room 1**
15:10-17:10

MS 33: NUMERICAL SIMULATIONS FOR EARTHQUAKE-RESILIENT SYSTEMS
MS Organizer: D. Forcellini

18395 A DEVELOPED ANALYTICAL NON-LINEAR MODEL OF ELASTOMERIC BEARINGS VERIFIED WITH NUMERICAL FINDINGS
Konstantinos N. Kalfas, ***Davide Forcellini***

18547 EXPERIMENTAL, THEORETICAL, AND NUMERICAL SIMULATION APPROACHES TO ASSESS THE COMPRESSIVE BEHAVIOR OF ELASTOMERIC BEARINGS
Manuel Guzmán Sánchez, ***Davide Forcellini****, Ricardo Moreno Sánchez, Diego Giraldo-Vásquez*

20181 SEISMIC ASSESSMENT OF SCHOOL BUILDINGS IN REINFORCED CONCRETE AND MASONRY
Oreste S. Bursi, Nicola Tondini, ***Alessio Bonelli****, Emiliano Debiasi*

18578 THE ROLE OF NON-LINEARITY IN THE SEISMIC ASSESSMENT OF A BASE ISOLATED BENCHMARK BUILDING WITH SOIL STRUCTURE INTERACTION EFFECTS
Andrea Canini

19515 THREE DIMENSIONAL FINITE ELEMENT BEHAVIORAL ASSESSMENT OF REINFORCED CONCRETE ELEMENTS
Maria Kardala*, Konstantinos Spiliopoulos*

20612 NUMERICAL SIMULATIONS OF ELASTOMERIC BEARINGS BRACED WITH STEEL CABLES UNDER CYCLIC DISPLACEMENT
Hossain Talebi, Mohammad Reza Adibramezani, ***Nooshin Ghorbani Amirabad***

19445 NUMERICAL SIMULATIONS OF UNBURIED HP/HT SUBSEA PIPELINES SUBJECTED TO SEISMIC SCENARIOS
Daniele Mina, ***Davide Forcellini****, Hassan Karampour*

Thursday, November 26 **Room 2**
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MS 22 - III: DYNAMIC SOIL-STRUCTURE INTERACTION AND WAVE PROPAGATION
MS Organizers: D. Clouteau, A. Metrikine, G. Müller, J-F. Semblat

20500 DEVELOPMENT OF A METAMATERIAL PERIODIC FOUNDATION FOR SEISMIC PROTECTION
Ahmad Saoud*, Ahmad Omar, Diogo Queiros-Conde*

21495 GENERATION OF ARTIFICIAL ACCELEROGRAMS CONSISTENT WITH EARTHQUAKE-INDUCED GROUND MOTIONS
Federica Genovese*, Giuseppe Muscolino, Giovanni Biondi, Ernesto Cascone*

MS 3: DYNAMIC BUCKLING
MS Organizers: P.B. Gonçalves, F. Pellicano, C. E. N. Mazzilli

18873 PARAMETRIC INSTABILITY OF PULTRUDED FIBER-REINFORCED POLYMER COLUMNS UNDER AXIAL HARMONIC FORCING
Julio C. Coaquira, Daniel C.T. Cardoso, ***Paulo B. Gonçalves****, Diego Orlando*

18879 EFFECTS OF INITIAL GEOMETRICAL IMPERFECTIONS ON DYNAMIC STABILITY OF CIRCULAR CYLINDRICAL PANELS
Frederico Silva*, Wanclaine Vaz, Paulo Gonçalves*

19891 APPLICATION OF A TWO-PARAMETER MULTIPLE SHOOTING METHOD FOR FLUTTER INSTABILITY ANALYSIS OF NON-PRISMATIC MULTI-SEGMENT COLUMNS
Ryszard Hołubowski

Thursday, November 26 **Room 3**
15:10-17:10

MS 4 - II: DYNAMICS OF COMPOSITE MATERIALS
MS Organizers: G. Bonnet, C. Boutin, S. Lenci

19404 ACOUSTIC WAVES IN HOMOGENIZED FLUID-SATURATED DEFORMING PERIODIC SCAFFOLDS UNDER PERMANENT FLOW
Eduard Rohan*, Robert Cimrman, Salah Naili*

19171 A TWO MODE NON-UNIFORM APPROXIMATION FOR AN ELASTIC ASYMMETRIC SANDWICH
Mohammed Alkinidri*, Julius Kaplunov, Ludmila Prikazchikova*

19310 MODELING OF CFRP STRUCTURES USING MODEL UPDATING TECHNIQUES AND EXPERIMENTAL MEASUREMENTS
Ilias Zacharakis*, Dimitrios Giagopoulos, Ioannis Zyganitidis, Alexandros Arailopoulos, Olga Markogiannaki*

19771 HOMOGENIZED MODEL OF UNCONVENTIONAL DYNAMIC BEHAVIOUR OF PERIODIC PLATES AND EXPERIMENTAL COMPARISONS
Pascal Fossat*, Claude Boutin, Mohamed Ichchou*

20082 THE EFFECTS OF HONEYCOMB CELL SIZE ON DYNAMIC RESPONSE OF SANDWICH COMPOSITE STRUCTURE UNDER THERMAL ENVIRONMENT
Enes Erkan Kisa*, Bilsay Sümer, İlker Murat Koç, Mehmet Alaittin Arpacı*

Thursday, November 26 16:10-17:10	Room 4

ROUND TABLE MS 2: NON-LINEAR DYNAMICS

Moderator: Giuseppe Rega
Panel: Gaetan Kerschen, Andrei Metrikine, David Wagg

Agenda: New Frontiers in Nonlinear Dynamics

17:10-17:20
Break

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