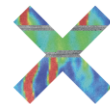


SMAR 2024



Conference programme

**7th International Conference
on Smart Monitoring,**



**Assessment and Rehabilitation
of civil structures**



**Salerno, Italy
4-6 September 2024**



UNIVERSITÀ DEGLI STUDI DI SALERNO



Conference venue



The conference will be held between 4 and 6 September 2024
at the main Campus of the University of Salerno in Fisciano (SA)



Address: University of Salerno, Fisciano Campus
Building E1 (Edificio E1)
via Giovanni Paolo II, 132, 84084 Fisciano (SA) - Italy

7th International Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures

SMAR 2024, the 7th international conference on *Smart Monitoring, Assessment and Rehabilitation of Civil Structure*, is co-organised by the Structural Engineering Laboratory of Empa, the Swiss Federal Laboratories for Materials Science and Technology, and the Department of Civil Engineering of the University of Salerno, Italy.

A total of 324 abstracts were accepted for presentation in SMAR 2024 and were collected in a **Book of abstracts**, a customary document for SMAR Conferences. However, 280 of them were further developed into full papers and are going to be collected in the **Conference Proceedings**, which, for the first time, are going to be published by Elsevier in a dedicated issue of **Procedia Structural Integrity** (Online ISSN: 2452-3216), an open access journal publishing under a CC-BY-NC-ND license full papers presented in scientific conferences.

The present programme collects the agenda related to presentations scheduled during SMAR 2024. It aims to guide the conference attendee and any research or practitioner interested in SMAR 2024 to have a quick access to the conference contents, which can be eventually studied in further details by reading the related full papers that will be made available in the conference proceedings.

SMAR 2024 Co-Chairs

Enzo **Martinelli**

University of Salerno, Italy

Moslem **Shahverdi**

Empa, Switzerland

Masoud **Motavalli**

Empa, Switzerland

Alper **Ilki**

ITU, Turkey

Salerno (Italy), September 2024

Committees

International Scientific Committee

www.smar2024.org/international-scientific-committee/

Organizing Committee

www.smar2024.org/local-organizing-committee/

Conference Secretariat

www.smar2024.org/conference-secretariat/

General topics

Durability Issues as related to Harsh Environments
Performance and Damage Assessment
Practical Applications and Case Studies
Shape Memory Alloys in Civil Structures
Structural Health Monitoring
Structural Strengthening and Repair

Mini-Symposia

- MS01** Multifunctional materials for sustainable constructions: integrated thermal, structural and sensing systems
- MS02** R&D of Iron-based Shape Memory alloys and their engineering application technology in China
- MS03** Digital Manufacturing in Construction
- MS04** Intelligent digitalization in structural health monitoring and lifetime maintenance of complex structures
- MS05** Smart FRP and steel structures
- MS06** Innovative Methods in Strengthening of Concrete Bridges using FRP
- MS07** Bio-based composites for rehabilitation and retrofitting of buildings and structures
- MS08** Advances in the investigation of the bond mechanism of externally bonded composites and FRP bars
- MS09** Advances in Fiber Optical Sensing Solutions for Infrastructure, Geotechnics and Earth Sciences
- MS10** Economic assessment and Life-Cycle performance in building and civil engineering works
- MS11** Seismic-Fire combined assessment and optimization of interventions for buildings and infrastructures
- MS12** Innovative solutions for fatigue strengthening of existing structures
- MS13** Natural fibres for eco-compatible solutions in seismic and energy upgrading of masonry structures
- MS14** Advancements in Risk and Reliability Assessment of Existing Structures
- MS15** Shape Memory Alloys (SMAs) for Engineering Applications
- MS16** Systems and methods for transport infrastructure surveillance and monitoring
- MS17** Advancements in Object Digitization and Analysis: A Mini-Symposium on Innovative Tools and Methods

Conference Chairs



Prof. Enzo **Martinelli**
University of Salerno, Italy



Prof. Moslem **Shahverdi**
Empa, Switzerland

Honorary Chairs



Prof. Masoud **Motavalli**
Empa, Switzerland



Prof. Alper **Ilki**
ITU, Turkey

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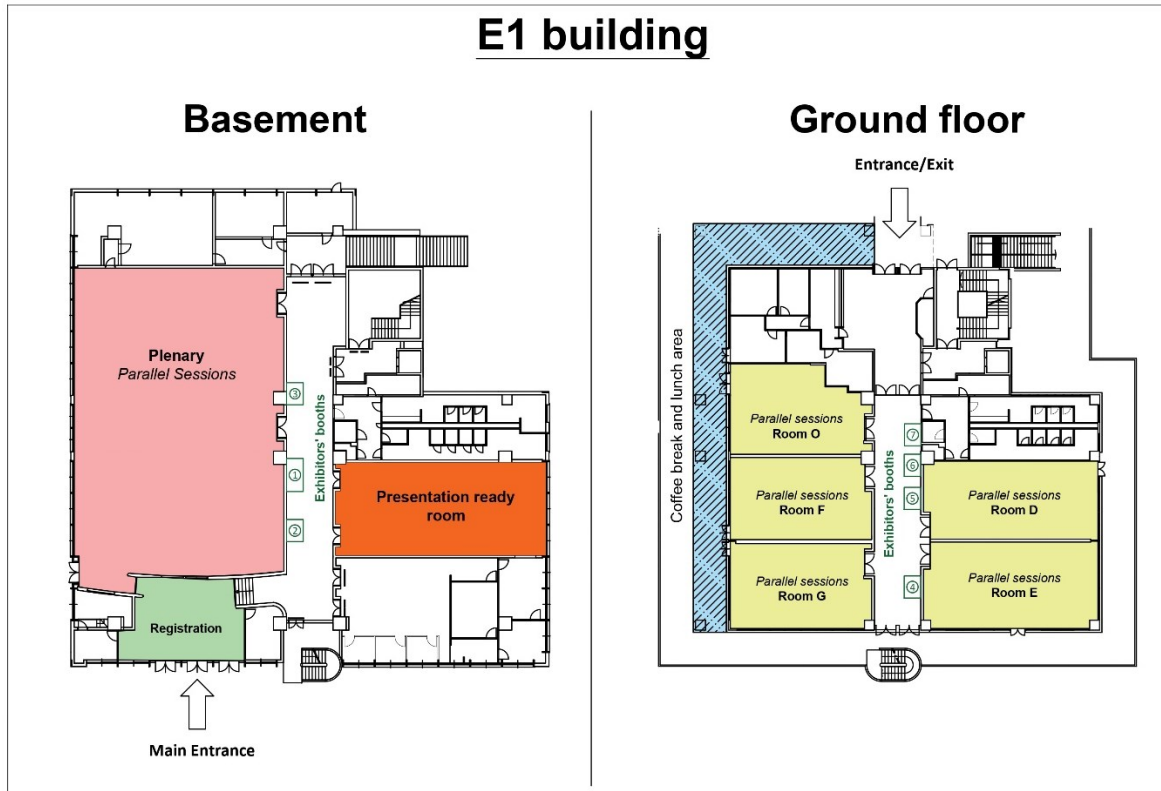


Exhibitors



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| 2) ASDEA Hardware srl; | 3) SIKA Corporation (SMAR 2024 Gold Sponsor); | 4) G.N.R. s.r.l.; |
| 5) Hexagon - Leica Geosystems SpA | 6) Dewesoft d.o.o.; | 7) Nerve sensors - SHM System Sp. z o.o. Sp. Kom. |
| | 6) Know CE SpA; | |



Conference agenda

8.00 Departure of shuttle buses from Salerno

8.30 Registration

9.45 **Opening session**

Welcome address by the Rector of the University of Salerno

Welcome address by the Director of Empa

Welcome address by the Head of the Dept. of Civil Engineering (UniSA)

Welcome address by the Conference Chairs

10.30 Coffee break

11.00 **Keynote Lectures**

Chairs: Prof. Masoud Motavalli, Prof. Alper Ilki

KL1: Dr. Maria Gabriella **Castellano**, FIP MEC srl (Italy)

KL2: Prof. Konrad **Bergmeister**, University of Natural Resources & Life Sciences,
Vienna (Austria)

12.30 Lunch break

SMAR ExCom Meeting

14.00 **Parallel sessions (#1)**

1-P Structural health monitoring/1

1-D Structural strengthening and repair/1

1-E Mini-Symposium 12

1-F Mini-Symposium 04/1

1-G Mini-Symposium 06

1-O Performance and damage assessment/1

16.00 Coffee break

16.30 **Parallel sessions (#2)**

2-P Structural health monitoring/2

2-D Structural strengthening and repair/2

2-E Mini-Symposium 15/1

2-F Mini-Symposium 05

2-G Mini-Symposium 03

2-O Mini-Symposium 13/1

18.00 Departure of shuttle buses to Salerno

19.30 Welcome reception

8.00 Departure of shuttle buses from Salerno

9.00 Keynote Lectures

Chairs: Prof. Enzo Martinelli, Prof. Moslem Shahverdi
KL3: Prof. Shirley **Dyke**, Purdue University (USA)
KL4: Prof. Urs **Meier**, Empa/ETHZ (Switzerland)
Presentation by Gold Sponsor SIKA Corporation

10.30 Coffee break

11.00 Parallel sessions (#3)

3-P Structural health monitoring/3
3-D Mini-Symposium 07
3-E Mini-Symposium 04/2
3-F Mini-Symposium 08/1
3-G Mini-Symposium 09/1
3-O Performance and damage assessment/2

13.00 Lunch break

14.30 Parallel sessions (#4)

4-P Structural health monitoring/4
4-D Structural strengthening and repair/3
4-E Mini-Symposium 15/2
4-F Mini-Symposium 11
4-G Mini-Symposium 09/2
4-O Mini-Symposium 13/2

16.00 Coffee break

16.30 Parallel sessions (#5)

5-P Structural health monitoring/5
5-D Structural strengthening and repair/4
5-E Shape memory alloys in civil structures/1
5-F Mini-Symposium 17/1
5-G Mini-Symposium 02
5-O Mini-Symposium 14

18.00 Departure of shuttle buses to Salerno

20.00 Conference Dinner

8.00 Departure of shuttle buses from Salerno

9.00 Keynote Lectures

Chairs: Prof. Masoud Motavalli, Prof. Enzo Martinelli

KL5: Prof. Fae **Azhari**, University of Toronto (Canada)

KL6: Prof. Carlo **Pellegrino**, University of Padua (Italy)

10.30 Coffee break

11.00 Parallel sessions (#6)

6-P Structural health monitoring/6

6-D Mini-Symposium 16

6-E Shape memory alloys in civil structures/2

6-F Mini-Symposium 08/2

6-G Mini-Symposium 10

6-O Practical applications and case studies/1

13.00 Lunch break

14.15 Parallel sessions (#7)

7-P Structural health monitoring/7

7-D Structural strengthening and repair/5

7-E Mini-Symposium 01

7-F Mini-Symposium 17/2

7-G Durability issues as related to harsh environments

7-O Practical applications and case studies/2

16.30 Coffee break

17:00 Closing session

Mirko Ros Medal – Best Paper Awards

Announcement of SMAR 2026 Call for Proposals

Farewell address of the conference Chairs

18.00 Departure of shuttle buses to Salerno

Keynote Lectures

Dr. Maria Gabriella **Castellano**
FIP MEC srl, Italy

Day 1, September 4th 11:00 – Plenary Room



Seismic retrofit of buildings in Italy through seismic isolation or energy dissipation



Prof. Konrad **Bergmeister**
BOKU University Vienna, Austria

Day 1, September 4th 11:45 – Plenary Room

AI-enhanced Digital Inspection of Bridges

Prof. Shirley **Dyke**
Purdue University, USA

Day 2, September 5th 09:00 – Plenary Room



AI-aided structural engineering inspection and decision-making



Prof. Urs **Meier**
Empa/ETHZ, Switzerland

Day 2, September 4th 09:45 – Plenary Room

Advancements in Carbon Fiber Reinforced Polymer Tendons for Structural Rehabilitation

Prof. Fae **Azhari**
University of Toronto, Canada

Day 3, September 6th 09:00 – Plenary Room



Transcending discrete sensing



Prof. Carlo **Pellegrino**
University of Padua, Italy

Day 3, September 6th 09:45 – Plenary Room

Management of road bridge networks in Italy by means of integrated SHM systems



Parallel sessions

Parallel sessions at a glance

| Day Parallel sessions | September 4 th | | September 5 th | | | September 6 th | |
|-----------------------------|---------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|--|---|--|
| | #1 14:00 – 16:00 | #2 16:30 – 18:00 | #3 11:00-13:00 | #4 14:30 – 16:00 | #5 16.30 – 18:00 | #6 11:00 – 13:00 | #7 14:15 – 16:30 |
| <i>Plenary</i> | Structural health monitoring/1 | Structural health monitoring/2 | Structural health monitoring/3 | Structural health monitoring/4 | Structural health monitoring/5 | Structural health monitoring/6 | Structural health monitoring/7 |
| <i>Room D</i> | Structural strengthening and repair/1 | Structural strengthening and repair/2 | Mini-Symposium 07 | Structural strengthening and repair/3 | Structural strengthening and repair/4 | Mini-Symposium 16 | Structural strengthening and repair/5 |
| <i>Room E</i> | Mini-Symposium 12 | Mini-Symposium 15/1 | Mini-Symposium 04/2 | Mini-Symposium 15/2 | Shape memory alloys in civil structures /1 | Shape memory alloys in civil structures/2 | Mini-Symposium 01 |
| <i>Room F</i> | Mini-Symposium 04/1 | Mini-Symposium 05 | Mini-Symposium 08/1 | Mini-Symposium 11 | Mini-Symposium 17/1 | Mini-Symposium 08/2 | Mini-Symposium 17/2 |
| <i>Room G</i> | Mini-Symposium 06 | Mini-Symposium 03 | Mini-Symposium 09/1 | Mini-Symposium 09/2 | Mini-Symposium 02 | Mini-Symposium 10 | Durability issues as related to harsh environments |
| <i>Room O</i> | Performance and damage assessment/1 | Mini-Symposium 13/1 | Performance and damage assessment /2 | Mini-Symposium 13/2 | Mini-Symposium 14 | Practical applications and case studies/1 | Practical applications and case studies/2 |

Day 1: September 4th - Parallel sessions (#1) – 14:00

Session 1-P Structural health monitoring/1

Chair(s): Luigi Petti, Ayaho Miyamoto Plenary

- 14:00** Measured Displacement Data Analysis and Modelling for Structural Health Monitoring
Mohammad Shamim Miah | Werner Lienhart
- 14:15** Advancing Smart Health Monitoring: A Review of Low-Cost Sensors for Structural Assessment
Mahyad Komary | S. Komarizadehasl | N. Tošić | J.A. Lozano-Galant | J. Turmo
- 14:30** Effective structural health monitoring (SHM) system for bridges: a case study
Vera Rillo | Alessandra De Angelis | Giuseppe Maddaloni
- 14:45** Reliability of closed-form damage quantification for material and measurement uncertainty
Sayandip Ganguly | Koushik Roy
- 15:00** Long-Term Indirect Monitoring System for Short and Medium Span Bridges
Ayaho Miyamoto
- 15:15** The A3 Highway Monitoring Model for Bridges Surveillance – Results and Considerations
Luigi Petti | Carmine Lupo | Constanza Maria De Gaetano
- 15:30** Satellite-derived Digital Surface Models for InSAR Deformation Measurements on Bridges
Helen Stewart | Daniel Cusson | Fernando Greene Gondi | Peter Oliver
- 15:45** Structural health monitoring of concrete constructions using BIM and non-destructive techniques
Yago Cruz | Manuel Cabaleiro | Jose Carlos Caamaño | Borja Conde | Hugo Lopez | Belen Riveiro

Session 1-D Structural strengthening and repair/1

Chair(s): Gianvittorio Rizzano, Atsushi Sato Room D

- 14:00** Seismic Retrofitting of a 7-storey Hospital Building
Rosario Montuori | Elide Natri | Vincenzo Piluso | Alessandro Pisapia
- 14:15** An integrated approach for seismic design and modelling of plywood-retrofitted timber floors
Michele Mirra
- 14:30** Design and modelling tools for timber-based seismic retrofitting: from research to practice
Michele Mirra | Andrea Gerardini
- 14:45** Seismic retrofitting of an existing hospital with external steel lattice
Maximilian Fehr | Michael Baur | Giovacchino Genesis
- 15:00** Seismic retrofit strategy for nonconforming existing steel buildings with CBFs
Sabatino Di Benedetto | Massimo Latour | Antonella Bianca Francavilla | Gianvittorio Rizzano | Roberto Tartaglia | Mario D'Aniello | Raffaele Landolfo | Atsushi Sato
- 15:15** Flexural Buckling Strength of Steel Angle with Reinforcement in Electric Transmission Towers
Atsushi Sato | Takahiro Kodani | Shunichi Takagi
- 15:30** Welding under service conditions –Monitoring, repair strategy and rehabilitation
Julian Unglaub | Jonas Hensel | Klaus Thiele
- 15:45** Sustainable system with non-intrusive anchors for the preservation of historic steel structures
Fernando Nunes | Manuel Cabaleiro | Borja Conde | Yago Cruz | Brais Barros | Cristina Gonzalez

Day 1: September 4th - Parallel sessions (#1)- 14:00

Session 1-E MS12: Innovative solutions for fatigue strengthening of existing structures

Chair(s): Pierluigi Colombi, Elyas Ghafoori Room E

- 14:00** Stress recovery behavior of a promising NiTiNb-SMA plate for bonded prestressed strengthening
Mao Ye | Tao Chen | Lingzhen Li | Elyas Ghafoori
- 14:15** Repair and strengthening of existing structures using FRP composites externally-bonded with toughened epoxy adhesives
Angelo Savio Calabrese, Massimiliano Bocciarelli, Tommaso D'Antino, Tommaso Papa | Pierluigi Colombi
- 14:30** Extension of service life: Novel approaches to repairing fatigue-damaged steel structures
Yvonne Ciupack | Javier Sacristan | Florian Sternsdorff | Antonino Montalbano | Fabien Choffat | Mathias Euler
- 14:45** Identifiability of the parameters contained in a cyclic cohesive zone model for CFRP-to-steel bonded joints
Tommaso Papa | Massimiliano Bocciarelli | Pierluigi Colombi | Angelo Savio Calabrese
- 15:00** The influence of CFRP fatigue behavior on CFRP-to-steel bonded joints systems
Tommaso Papa | Massimiliano Bocciarelli | Pierluigi Colombi | Angelo Savio Calabrese
- 15:15** Numerical analysis of SCF of CHS T-joints strengthened with prestressed CFRP
Yuan Xu | Qian-Qian Yu | Guo-Wen Xu
- 15:30** Numerical study on inelastic cyclic behavior of CFRP wrapped substandard RC columns
Nima Kian | Alper Ilki | Oguz C. Celik
- 15:45** Failure damage analysis of UHWMPE/PET foam sandwich structures under high-velocity impact
Bin Yang | Dongming Yang | Kunkun Fu

Session 1-F MS04/1: Intelligent digitalization in structural health monitoring and lifetime maintenance of complex structures

Chair(s): Yuri Petryna, Julian Unglaub Room F

- 14:00** Monitoring heavy vehicle braking events using smartphones to improve the braking force model
Matteo Breveglieri | Glauco Feltrin
- 14:15** Interaction between BIM and FE models in structural health monitoring
Iryna Rudenko | Yuri Petryna
- 14:30** Modifying the dead load safety factor of the Nibelungen Bridge based on 3D measurements
Cedric Eisermann | Steffen Marx | Chongjie Kang
- 14:45** A data-driven approach for linking models of large-scale bridges and monitoring data
Christoph Brenner | Klaus Thiele | Julian Unglaub
- 15:00** Advances of Digital Twins in Bridge Structures Maintenance
Chongjie Kang | Maria Walker | Steffen Marx
- 15:15** Vibration monitoring of structures with indirect load identification and Kalman update
Philipp Kähler | Yuri Petryna
- 15:30** System identification and monitoring of bridge structures
Maximilian Rohrer | Max Moeller | Armin Lenzen
- 15:45** BIM-oriented approach for the setting up of a Bridge Management ECO-System
Anna Sanseverino | Luigi Petti | José Antonio Lozano-Galant | Constanza Maria De Gaetano

Day 1: September 4th - Parallel sessions (#1) -14:00

Session 1-G MS06: Innovative Methods in Strengthening of Concrete Bridges using FRP

Chair(s): Riadh Al-Mahaidi, Giovanni Terrasi

Room G

- 14:00** Re-use of 25 year old CFRP pultrusions for bridge strengthening via post-tensioning cables
Giovanni Terrasi | Christian Affolter | Alex Stutz | Gregor Schwegler | André Guerotto | Andreas Winistörfer
- 14:15** Reusing aircraft CFRP fragments to strengthen concrete structures: bond behaviour assessment
Alba Codina | Norbert Blanco | Younes Jahani | Josep Costa | Alex Fernandez | Cristina Barris
- 14:30** Fly Ash Geopolymer Paste for NSM CFRP Application Under Elevated Temperatures: Material Development
Hamzeh Shdeifat | Robin Kalfat | Riadh Al-Mahaidi
- 14:45** A convolutional autoencoder for damage assessment of FRP strengthened RC beams
Ricardo Perera | Javier Montes | Marta Baena | Cristina Barris
- 15:00** Flexural strengthening of a bridge deck slab using near surface mounted CFRP rods
Tom Argyle | James Kilcran | Ross Wright | Fabio P. Figueiredo
- 15:15** Influence of Geogrid on the Flexural Behavior of Cracked Concrete Pavements
Abbas S. A. Al-Hedad | Muhammad Hadi
- 15:30** Effect of glass fibre on slag-fly ash based geopolymer concrete
Shehroze Ali | M. Neaz Sheikh | Muhammad Hadi
- 15:45** Comparative Assessment of FRP Composite Materials in Structural Applications under Low-Velocity Impact Loads: A Review
Haider Mraih | Javad Hashemi | Robin Kalfat | Riadh Al-Mahaidi | Guoxing Lu

Session 1-O Performance and damage assessment/1

Chair(s): Lorenzo Macorini, José Sena-Cruz

Room O

- 14:00** Performance assessment of overhead conductors subjected to combined thermal and wind loads
Rajapaksha Gedara Shiroshi Nimarika Jayathilake | Pathmanathan Rajeev | Emad Gad
- 14:15** Dynamic Validation and Assessment of an Historical Bell Tower
Elide Nastri | Annachiara D'Apice | Paolo Todisco
- 14:30** Structural Performance of Buildings affected by Mining Activities: A review
Jaime Gonzalez-Libreros | Maysam Jalilkhani | Chao Wang | Gabriel Sas
- 14:45** Durability of GFRP composites produced by pultrusion under thermal environments
Omid Hassanshahi | Marco Jorge | José Sena-Cruz | Luís Correia | Cláudio Leite | Tarikou Hasan | João Ramôa Correia | Mário Garrido | Susana Cabral-Fonseca
- 15:00** Evaluation of concrete frost resistance using concrete drilling powder
Sothyarak Rath | Ji Xi | Yuya Takahashi | Shunsei Tanaka | Yuya Sakai
- 15:15** 3D deep learning for segmentation of masonry tunnel spalling
Jack Smith | Chrysothemis Paraskevopoulou
- 15:30** Diaphragm effect of unreinforced historical masonry vaults
Corrado Chisari | Mattia Zizi | Gianfranco De Matteis
- 15:45** Statics of masonry walls with openings: a singular stress approach
Antonio Fortunato | Ada Amendola

Day 1: September 4th - Parallel sessions (#2) -16:30

Session 2-P Structural health monitoring/2

Chair(s): Carmelo Gentile, Fae Azhari

Plenary

- 16:30** Detection of internal defects in RC structures using GPR and ultrasonic methods
Andrey Lapshinov | Alexander Shuvalov | Evgeny Zerkal | Rinat Zheletdinov
- 16:45** Simulation of acoustic emission events in reinforced concrete structures for Structural Monitoring
Antonella Bianca Francavilla | Claudio Guarnaccia | Massimo Latour | Gianvittorio Rizzano
- 17:00** Acoustic Event Detection for Prestressing Wire Breakage Monitoring in Concrete Bridges
Sasan Farhadi | Mauro Corrado | Giulio Ventura
- 17:15** Experimental study on identification of rebar prestress based on acoustic elastic effect
Rui-Xin Jia | Jin-Xi Long | Yue Liu
- 17:30** AE-based Health Monitoring of Full-scale RC Beams Strengthened with FRCM Composites
Nikhil Holsamudrkar | Sauvik Banerjee
- 17:45** Self-Sensing Capacity of Calcium Aluminate Cement-Based Multi-Walled Carbon Nanotube and Nanocarbon Black Composites at Elevated Temperatures
Alamgir Khan | Hassan Bilal | Yingzi Yang | Zhichao Xu

Session 2-D Structural strengthening and repair/2

Chair(s): Yago Cruz, Cristina Barris

Room D

- 16:30** Characterization of Interlaminar Durability of Fiber Anchors Used with FRP Strengthening Systems
Mihammad Ishfaq | Jovan Tatar
- 16:45** Exploring the Influence of Strain Rate on BTRM Tensile Behaviour
Amrita Milling | Giuseppina Amato | Su Taylor | Pedro Moreira | Daniel Braga
- 17:00** Shear strengthening of RC beams with U-wrapped FRCM composites: assessment of current design guidelines
Veronica Bertolli | Lesley H. Sneed | Francesco Focacci | Tommaso D'Antino
- 17:15** Behaviour of Full Scale Shear Critical RC Beams Strengthened with Textile Reinforced Mortar
Asad-ur-Rehman Khan | Fawwad Masood
- 17:30** Available measurement methods to evaluate the fiber and matrix bond performance of FRCM composites
Davide Santinon | Jaime Gonzalez-Libreros | Paolo Zampieri | Georgia Thermou | Carlo Pellegrino | Gabriel Sas
- 17:45** Experimental investigation of C-FRCM confinement effect on concrete cylinders using micro-fibre reinforced mortar
Maher AL-Hawarneh | Moustafa Mansour | Ahmad Rteil

Day 1: September 4th - Parallel sessions (#2) -16:30

Session 2-E MS15/1: Shape Memory Alloys (SMAs) for Engineering Applications

Chair(s): Maryam Mohri, Saiid Saiidi

Room E

- 16:30** Strengthening of bridges with iron-based shape memory alloy bars embedded in UHPFRC
Ángela Lemos | Christoph Czaderski | Ivan Markovic | Julien Michels | Walter Kaufmann
- 16:45** Ni-Ti SMA bars in bridge engineering- research and new development
M. Saiid Saiidi
- 17:00** Self-centering capacity of RC columns reinforced by martensitic NiTi SMA bars in plastic hinge region
Eunsoo Choi | S.J.Park | B.T. Nhan | J.S. Byun | S.J. Lee | YS. Lee
- 17:15** Strengthening of an Existing RC Building with Superelastic SMAs
Maria Ntina
- 17:30** Study of activation parameters in Fe-SMA reinforced concrete structures using multiphysics modelling
Ali Saeedi | Alireza Tabrizikahou | Moslem Shahverdi
- 17:45** Practical Applications of Fe-SMA for Punching Shear Strengthening of RC Slabs
Ravina Sriram | Roland Bärtschi | Yunus Harmanci

Session 2-F MS05: Smart FRP and steel structures

Chair(s): Elyas Ghafoori, Lingzhen Li

Room F

- 16:30** A Graphical Solution to Bond Capacity
Lingzhen Li | Eleni Chatzi | Christoph Czaderski | Xiao-Lin Zhao | Elyas Ghafoori
- 16:45** An Attention-based Detection Method of Displacement Field on Steel Surface
Jie Wang | Tie-Shan Gao | Qian-Qian Yu
- 17:00** Fatigue durability of adhesively bonded joints between steel plates and patch plates
Hitoshi Nakamura | Kyosuke Takahashi | Visal Thay | Takahiro Matsui | Hisakazu Horii
- 17:15** Fatigue behaviour of CFRP strengthened ultra-high strength steel
Yining Zhang | Lili Hu
- 17:30** Adaptation of the pipeline supporting structure into a footbridge using FRP deck with SHM
Maciej Kulpa | Tomasz Siwowski
- 17:45** Bond Behavior of CFRP-Strengthened Steel Structures and Its Environmental Influence Factors: State-of-the-Art Review
Lu Ke | Youlin Li | Chuanxi Li | Zheng Chen | Kaibao Ma

Day 1: September 4th - Parallel sessions (#2) -16:30

Session 2-G MS03: Digital Manufacturing in Construction

Chair(s): Moslem Shahverdi, Saim Raza Room G

- 16:30** Energy absorption and dissipation in negative stiffness metallic architected materials
Ali Jafarabadi | Elyas Ghafoori
- 16:45** Digital Fabrication of Segmental Concrete Columns for Accelerated Bridge Construction
Saim Raza | Zafiris Triantafyllidis | Ana Anton | Benjamin Dillenburger | Moslem Shahverdi
- 17:00** Innovations to Improve 3D Concrete Printing of Portland Cement-Steel Slag Blended Mortars
Zohaib Hassan | Saim Raza | Behrouz Shafei | Mehrdad Mahoutian | Moslem Shahverdi
- 17:15** Numerical and experimental study on steel members retrofitted by directed energy deposition
H. Dahaghin | H. Moshavedi | N. Pichler | L. Li | M. Mohri | C. Diao | M. Motavalli | S. Zahrai | Elyas Ghafoori
- 17:30** Digital Fabrication of Ribbed Slabs With Post-Tensioned 3D Printed Concrete Formwork
Saim Raza | Mahsa Sakha | Behzad Manshadi | Haifeng Fan | Xiaomeng Wang | Moslem Shahverdi
- 17:45** Applications of digital twins in reinforced and prestressed concrete bridge infrastructure
Lucas Martins Barreto | José Américo Alves Salvador Filho

Session 2-O MS13/1: Natural fibres for eco-compatible solutions in seismic and energy upgrading of masonry structures

Chair(s): Antonio Formisano, Flavio Stochino Room O

- 16:30** Performance of Flax Textile-Reinforced Mortar Systems Subjected to Accelerated Ageing
Niki Trochoutsou | Mattia Baldassari | Alessia Monaco | Pietro Cornetti | Maurizio Guadagnini
- 16:45** A new biocomposite material mixing past and present to look toward the future
Pier Francesco Greco | Chiara Pepi | Massimiliano Giofrè | Loredana Latterini | Laura Tommasoli | Francesco Vinti | Roberto Petrucci
- 17:00** Use of nanocomposite coatings and chemical treatments to improve mechanical performance of bio-composite materials
Chiara Pepi | Maria Eleonora Pipistrelli | Massimiliano Giofrè | Loredana Latterini | Laura Tommasoli | Francesco Vinti
- 17:15** Hemp-FRCM for seismic retrofitting of masonry structures/Experimental investigations on lime mortars reinforced with hemp braids
Emilia Meglio | Antonio Formisano
- 17:30** Natural Fiber Textile Reinforced Mortar (NFTRM) for Integrated Masonry Upgrading
Arnas Majumder | Flavio Stochino | Andrea Frattolillo | Monica Valdes | Enzo Martinelli
- 17:45** Investigating the volume stability Performance of paste with Phragmites Australis (PA) Fibers
Rawan Ramadan | Adel Elkordi | Elhem Ghorbel | Hassan Ghanem | Jamal Khatib

Day 2: September 5th - Parallel sessions (#3) – 11:00

Session 3-P Structural health monitoring/3

Chair(s): Andrey Lapshinov, Matteo Breveglieri

Plenary

- 11:00** Structural monitoring, FEM updating and performance assessment of a wind turbine
Serdar Soyöz | Serap Hanbay | Burak Bağırgan
- 11:15** X-ray diffraction application for tensile evaluation of Post Tensioned Cables
Luigi Pisani | Alessandro Torboli
- 11:30** Research on the Application of Intelligent Steel Strands in Prestressed Concrete Beams
Yue Liu | Ming-Yang Xi | Shi Bai
- 11:45** Operation modal analysis on prestressed concrete beams with shear or flexural cracks
Emanuele Gandelli | Giulia Rossini | Stefano Giuseppe Mantelli | Matteo Lamberti | Luca Facconi | Fausto Minelli
- 12:00** Assessment of the structural integrity of glulam using modal analysis and finite element updating
Ramon Sancibrian | Ignacio Lombillo | Rebeca Sanchez | Alfonso Lozano
- 12:15** Structural Response of Containment Structure of NPP to Internal Pressure and Thermal Gradients
Federico Pinto | Marcelo A. Ceballos | Carlos F. Estrada | Antonio M. Prato | Carlos A. Prato
- 12:30** Deep Learning-Based Prediction Model of Temperature-Induced Deflection of a Multi-Span Continuous Box Girder Bridges: Case Study
Lim Boon Xuan | Jing Gao | Yanbin Gao
- 12:45** Vibration-based novelty detection using autoencoders: application to KW51 bridge
Marco Pirro | Carmelo Gentile

Session 3-D MS07: Bio-based composites for rehabilitation and retrofitting of buildings and structures

Chair(s): Eddie Koenders, Marco Pepe

Room D

- 11:00** Earth-based materials reinforced with flax fibers: an experimental investigation
Agostino Walter Bruno | Mahdi M. K. Zanjani | Alberto Lagazzo | Salvatore Polverino | Domenico Gallipoli | Antonio Caggiano
- 11:15** Tensile behavior of Textile Reinforced Mortars made with either Jute or Flax fabrics
Bruno Paolillo | Marco Pepe | Giuseppe Ferrara | Rosario Lombardi | Enzo Martinelli
- 11:30** Sisal fiber reinforced mortar for 3D printing applications in construction
Hugo Varela | Matheus Pimentel Tinoco | Oscar Aurelio Mendoza Reales | Romildo Dias Toledo Filho | Gonzalo Barluenga
- 11:45** Bio-based self-modulating thermal and moisture buffer mortars for Architectural applications
Irene Palomar | Gonzalo Barluenga | Javier Puentes | Hugo Varela
- 12:00** Jute Fiber Composite Mortars: Sustainable Solutions for Thermo-Mechanical Retrofitting in Construction
Arnas Majumder | Flavio Stochino | Monica Valdes | Andrea Frattolillo | Enzo Martinelli
- 12:15** Shear strengthening of existing concrete beams using Fiber Reinforced Concrete
Paula Folino | Sebastián Etienot | Marianela Ripani | Hernán Xargay
- 12:30** "Bamboo bio-concretes: a literature review of 8 years of laboratory researches at NUMATS/UFRJ"
Nathália Silva | Thais Siqueira | Yassin Da Gloria | Romildo Dias Toledo Filho
- 12:45** Experiments on concrete test beams with recycled aggregates and natural fibers
Francisco Játiva | Juan Martin Tamayo | Tommy Silva | Oscar Granja | Raul Cabrera | Xavier Arce | Luis Guadalupe | Mauricio Guillen | Eddie Koenders | Eva Lantsoght

Day 2: September 5th - Parallel sessions (#3)- 11:00

Session 3-E MS04/2: Intelligent digitalization in structural health monitoring and lifetime maintenance of complex structures

Chair(s): Yuri Petryna, Chongjie Kang

Room E

- 11:00** Distributed fiber optic sensing for early-age monitoring of concrete structures
Bertram Richter | Dennis Messerer | Max Herbers | Kerstin Speck | Jakob Laukner | Christian Gläser | Frank Jesse | Steffen Marx
- 11:15** Damages Detection combining Modal Analysis and Acoustic Emission in Concrete Structures
Paul Winkler | Lukas Lippold | Volkmar Zabel | Carsten Könke
- 11:30** Detection of strain and crack development in RC under tensile fatigue loading using 2D FOS
Henrik Becks | Josef Hegger | Martin Classen
- 11:45** Influence of the re-anchoring behaviour on the detection of internal tendon rupture by fibre-optic measurements
Aeneas Paul | David Sanio | Peter Mark
- 12:00** Satellite monitoring of reinforced concrete buildings in areas affected by slow-moving landslides
Annalisa Mele | Chiara Di Muro | Mohammad Amin Khalili | Andrea Miano | Massimo Ramondini | Domenico Calcaterra | Andrea Prota | Diego Di Martire
- 12:15** Simulation workflow for fault detection and localization in sandwich structures
Hendrik Holzmann | Moritz Hülsebrock | Annalena Kühn | Heiko Atzrodt | Jörg Lange
- 12:30** Development of a Low-Cost IoT-based Sensor for Early-Stage Concrete Monitoring
Mahyad Komary | Petar Bajić | Nikola Tošić | Albert De la Fuente | José Turmo
- 12:45** Experiments on mechanical and physical properties of self-sensing concrete
Claudia Cirillo | Luciano Feo | Annavirginia Lambiase | Giuseppe Lovisi | Rosa Penna | Maria Sarno

Session 3-F MS08/1: Advances in the investigation of the bond mechanism of externally bonded composites and FRP bars

Chair(s): Tommaso D'Antino, Francesco Focacci

Room F

- 11:00** Experimental slip determination of upper GFRP-reinforcement in double span beam tests
Tom Molkens | Mona El-Hallak
- 11:15** Investigations on the ageing of GFRP rebar-concrete bond under sustained load
Noémie Delaplanque | Sylvain Chataigner | Marc Quiertant | Karim Benzarti | Arnaud Rolland | Xavier Bourbon | Xavier Chapeleau | Ludwig Battais | Laurent Gaillet
- 11:30** Experimental and theoretical study on flexural behaviour of hybrid bonded CFRP RC beams
Alba Codina | Cristina Barris | Marta Baena | Tommaso D'Antino | Lluís Torres
- 11:45** Shear stress transfer at the SRG-concrete interface: influence of the number of layers
Salvatore Verre | Fabrizio Comodini | Riccardo Panico | Alessio Cascardi | Francesco Focacci
- 12:00** Interfacial behaviour of CFRP-to-concrete joints with mechanical fastening
Mehdi Aghabagloo | Laura Carreras | Cristina Barris | Alba Codina | Marta Baena
- 12:15** Machine learning for analysing concrete cover separation in externally bonded FRP RC beams
Manish Prasad | Cristina Barris | Mehdi Aghabagloo | Beatriz López | Ricardo Perera | Marta Baena Muñoz
- 12:30** Complementary Use of CFRP U-Wraps as Supplemental Shear Reinforcement and Anchorage in Reinforced Concrete Beams Strengthened with Flexural Externally Bonded CFRP Sheets
Muhammad Ishfaq | Ravi Kaniitkar | Kent A. Harries | Jovan Tatar
- 12:45** Analytical study of FRP debonding in a real-scale concrete strengthened beam
Francesco Focacci | Tommaso D'Antino | Christian Carloni

Day 2: September 5th - Parallel sessions (#3) -11:00

Session 3-G MS09/1: Advances in Fiber Optical Sensing Solutions for Infrastructure, Geotechnics and Earth Sciences

Chair(s): Carlo Rabaiotti, Massimo Facchini Room G

- 11:00** Distributed Optical Fiber-Based Monitoring of Passive Anchors for Soil Stabilization
Lorenzo Brezzi | Nicola Fabbian | Luca Schenato | Alessandro Scala | Simonetta Cola
- 11:15** Optical fiber sensing for monitoring chloride ion concentration and pH in concrete structures
Jian-Neng Wang | Pei-Hsuan Wu
- 11:30** Monitoring of fracture processes in reinforced concrete beams with DFOS: feasibility study
Ivan Markovic | Stefan Thoma | Mauro Demont
- 11:45** DFOS-based inclinometers: challenges and potentialities in monitoring slow landslides
Emilia Damiano | Martina de Cristofaro | Erika Moliterno | Lucio Olivares
- 12:00** Distributed fiber-optic temperature monitoring in boreholes of a seasonal geothermal energy storage
Michael Iten | Matthias Bühler | Frank Fischli | Falko Bethmann | Andre El-Alf
- 12:15** Levee monitoring: DFOS Applications for understanding Levee Seepage
Nicola Fabbian | Lorenzo Brezzi | Paolo Simonini | Fabio De Polo | Luca Schenato | Lang Xu | Simonetta Cola
- 12:30** Performance of low-cost fibre optic cables as leak detection sensors for water pipelines in unsaturated soil
Esve Jacobsz
- 12:45** DFOS monitoring system of the longest Polish footbridge made of FRP composites
Maciej Kulpa | Tomasz Siwowski

Session 3-O Performance and damage assessment/2

Chair(s): Gabriel Sas, Joan Ramon Casas Room O

- 11:00** Accuracy of Ground Penetrating Radar (GPR) in locating post-tensioned cables
Isabella Mazzatura | Silvia Caprili | Walter Salvatore | Joan Ramon Casas
- 11:15** Wave-based fault detection in concrete by the Full Waveform Inversion considering noise
Ina Reichert | Tom Lahmer
- 11:30** Unraveling factors affecting the reversibility of martensitic phase transformation in FeNiCoAlTi
Anja Weidner | Robert Lehnert | Philipp Krooß | Thomas Niendorf
- 11:45** The effect of controlled fiber alignment of carbon fibers on the electrical properties of carbon fiber-cement composite under cyclic flexural loading
Shaofeng Qin | Ning Liu | Jishen Qiu
- 12:00** Alternative ULS Assessment Methodology for Existing Freyssinet Concrete Hinges in UK Highway Structures
Chris Hendy | Tom Argyle | Joe Niblett
- 12:15** Long-term Corrosion Monitoring for Evaluating the Performance of Repair Measures
Fritz Binder | Stefan L. Burtcher
- 12:30** NDT Technologies for Post Tensioned Concrete: National Highways' 'Structures Moonshot'
Chris Mundell | Chris Hendy | Shams Ghazy | Tom Argyle | Colin George
- 12:45** Nondestructive test for visualization of water movement in concrete using neutron imaging
Maki Mizuta | T. Takanashi | Y. Otake | A. Ueno | I. Kurashige | H. Ueda | Y. Kubo

Day 2: September 5th - Parallel sessions (#4) -14:30

Session 4-P Structural health monitoring/4

Chair(s): Luigi Pisani, Gian Piero Lignola

Plenary

- 14:30** Machine-learning-driven automatic application of the stochastic subspace identification method
Marco Martino Rosso | Angelo Aloisio | Giuseppe Carlo Marano | Giuseppe Quaranta
- 14:45** Exploiting time-frequency analysis for damage detection using Generative Adversarial Networks
Harrish Joseph | Biagio Carboni | Giuseppe Quaranta | Walter Lacarbonara
- 15:00** Vision-Based Structural Beams for Real-Time Structural Health Monitoring
Tahreer Fayyad | Su Taylor
- 15:15** Tension estimation of bridge stay cables using vision-based methods
Cevdet Enes Çukacı | Serdar Soyöz
- 15:30** Vibration-based fault Detection of a Hydraulic Pump Using a Convolutional Neural Network
Sharafiz Bin Abdul Rahim | Tan Wan Ying
- 15:45** Damage Classification Using CNN-Based Model for Multi-Part Strengthening System
Nikhil Holsamudrkar | Sauvik Banerjee

Session 4-D Structural strengthening and repair/3

Chair(s): John Myers, Michele Mirra

Room D

- 14:30** GA-based economic and environmental optimization procedure for seismic upgrading of RC frames
Francesco Nigro | Enzo Martinell
- 14:45** Structural assessment and numerical analysis of existing reinforced concrete frame structure
Josip Galić | Hrvoje Vukić | Davor Andrić | Ivana Jurić
- 15:00** Seismic strengthening of existing structures by External steel Exoskeletons
Alessandro Prota | Roberto Tartaglia | Raffaele Landolfo
- 15:15** Dissipative exoskeletons for seismic rehabilitation of RC buildings
Massimiliano Ferraioli | Osvaldo Pecorari | Salvatore Mottola | Angela Diana
- 15:30** Comparative analysis of seismic performance enhancement in irregular RC buildings using friction and fluid viscous dampers
Magdalini Titirla | Walid Larbi
- 15:45** Influence of torsional effects in seismic retrofit of RC buildings
Massimiliano Ferraioli | Osvaldo Pecorari | Davide Farace | Gennaro Di Lauro

Day 2: September 5th - Parallel sessions (#4) -14:30

Session 4-E MS15/2: Shape Memory Alloys (SMAs) for Engineering Applications

Chair(s): Antoni Cladera, Christoph Czaderski Room E

- 14:30** Contact Pressure Evolution in Heat-Treated Iron-Based Shape Memory Joints
Ali Jafarabadi | Christoph Czaderski | Maryam Mohri | Christian Leinenbach | Elyas Ghafoori | Eleni Chatzi | Masoud Motavalli
- 14:45** Durability of RC Beams with NSM Fe-SMA after Eight-Year Exposure and Sustained Loading
Yunus Harmanci | Christoph Czaderski | Moslem Shahverdi
- 15:00** Experimental study on recovery stress behavior of memory-steel patches bonded on cracked steel plates
Sizhe Wang | Qingtian Su | Xu Jiang | Masoud Motavalli | Elyas Ghafoori
- 15:15** Development and Characterization of Thin Iron-Based Shape Memory Alloy Prestressing Wire
Zafiris Triantafyllidis | Meet Jaydeepkumar Oza | Julien Michels | Mateusz Wyrzykowski | Moslem Shahverdi
- 15:30** Computational Modeling of Concrete Composites with Short Shape Memory Alloys Fibers
Alireza Tabrizikahou | Mieczysław Kuczma | Moslem Shahverdi
- 15:45** Self-Centering of RC Columns with Prestressed Fe-SMA Reinforcement
Mohammad Esmaelian | Saim Raza | Mohammad Shekarchi | Masoud Motavalli | Moslem Shahverdi

Session 4-F MS11: Seismic-Fire combined assessment and optimization of interventions for buildings and infrastructures

Chair(s): Emidio Nigro, Donatella de Silva Room F

- 14:30** Post-earthquake fire performance of a steel frame
Patrick Covi | Nicola Tondini
- 14:45** Fire-induced Structural Failure Analysis of an Industrial Warehouse Roof Truss System
Flavio Stochino | Fausto Mistretta | Marco Zucca | Mario Lucio Puppio | Nicola Schirru | Marta Saccone | Mauro Sassu
- 15:00** Acoustic Emission monitoring of OPC mortars at elevated temperatures in fracture tests
Hernan Xargay | Alejandra Vesga-Ramirez | M. Ripani | M. P. Gómez | P. Folino
- 15:15** Fire behavior of Automated Rack Supported Warehouses
Margherita Autiero | Donatella de Silva | Emidio Nigro
- 15:30** Fragility curves derivation under fire actions for different types of bridges
Donatella de Silva | Andrea Miano | Gabriella De Rosa | Francesco Di Meglio | Emidio Nigro
- 15:45** Modelling of fire behavior of RC girders strengthened by external prestressing
Piero Colajanni | Michele Fabio Granata | Lidia La Mendola | Mario Stabile

Day 2: September 5th - Parallel sessions (#4) -14:30

Session 4-G MS09/2: Advances in Fiber Optical Sensing Solutions for Infrastructure, Geotechnics and Earth Sciences

Chair(s): Carlo Rabaiotti, Luca Schenato Room G

- 14:30** Diagnostics of post-tensioned bridge girders using distributed fiber optic sensors
Bartosz Piątek | Tomasz Howiacki | Maciej Kulpa | Tomasz Siwowski
- 14:45** Distributed Fiber Optic Smart Geosynthetics for Geotechnical Applications in Transportation
Massimo Facchini | Nils Nöther | Léon Neff
- 15:00** A ground-breaking distributed fiber-optic pressure sensor for geohydraulic applications
Alessio Höttges | Carlo Rabaiotti | Massimo Facchini
- 15:15** Unveiling the persistence of Rayleigh signature in Challenging Distributed Measurements
Luca Schenato | M. Cappelletti | D. Orsuti | A. Galtarossa | M. Santagiustina | S. Cola | L. Palmieri
- 15:30** Implementation of an enhanced fiber optic sensing network for structural integrity monitoring at the Brenner Base Tunnel
Christoph M. Monsberger | Fabian Buchmayer | Madeleine Winkler | Tobias Cordes
- 15:45** Distributed Fibre Optic Sensors (DFOS) in Measurements of Rail Strain and Displacements
Lukasz Bednarski | Tomasz Howiacki | Rafał Sieńko | Katarzyna Zuziak

Session 4-O MS13/2: Natural fibres for eco-compatible solutions in seismic and energy upgrading of masonry structures

Chair(s): Antonio Formisano, Romildo D. Toledo Filho Room O

- 14:30** Influence of PLA impregnation on the performances of vegetable fibers for lime-based composites
Rosario Lombardi | Luciano Di Maio | Marco Pepe | Bruno Paolillo | Enzo Martinelli
- 14:45** FRCM System with natural fibers mesh
Giorgio Giacomini | Marco Bressan
- 15:00** Masonry structures retrofitting by geopolymer plaster reinforced with natural fibers
Salvatore Benfratello | Luigi Palizzolo | Carmelo Sanfilippo | Antonino Valenza
- 15:15** Strengthening Existing Structures with Post-tensioned Natural Fibre Ropes
Ali Alraie | Saverio Spadea | Vasant Matsagar
- 15:30** Experimental study on thermal matrix composite for seismic-energy upgrade of masonry building
Valerio Alecci | Mario De Stefano | Francesco Focacci | Stefano Galassi | Dora Pugliese | Gianfranco Stipo
- 15:45** Structural performance of self-healing concrete by bacillus bacteria with addition of rice husk ash
Samuel Amaya | Alexander Solarte | Bregy Choque

Day 2: September 5th - Parallel sessions (#5) -16:30

Session 5-P Structural health monitoring/5

- Chair(s): Serdar Soyöz, Piotr Omenzetter Plenary Room
- 16:30** Application of Digital Image Correlation to Field Monitoring of Masonry Arch Bridges
Stanyslav Grosman | Qili Fang | Lorenzo Macorini | Bassam Izzuddin
- 16:45** Preliminary ranges of critical vertical settlements of Italian masonry building stock for SHM applications
Stefano Belliazzi | Francesco Fabbrocino | Gian Piero Lignola
- 17:00** A sustainable monitoring approach to manage archaeological complex sites – The example of Pompeii
Luigi Petti | Gabriel Zuchtriegel | Carmine Lupo | Vincenzo Calvanese | Constanza Maria De Gaetano
- 17:15** An Innovative Monitoring Strategy of Ancient Temples made of Rigid-Block Structures
Luigi Petti | Carmine Lupo | Tiziana D'Angelo | Paolo Dallochio | Duilio Guizzetti
- 17:30** Monitoring of historical monuments: 5 years dynamic monitoring of the Milan Cathedral
Carmelo Gentile | Ana Avramova
- 17:45** Best practices for SHM in conservation: the case study of a Saint John, NB cathedral
Alex Carpenter | Tom Morrison | Fae Azhari

Session 5-D Structural strengthening and repair/4

- Chair(s): Marco Bressan, Massimo Latour Room D
- 16:30** 3D-printing technology for integrating the monitoring and rehabilitation of civil structures
Valentina Tomei | Ernesto Grande | Michele Arturo Caponero | Maura Imbimbo
- 16:45** Static strength in adhesive joints with different patch plate end subjected to bending force
Visal Thay | Yuta Kanazawa | Shuichi Fujikura | Hitoshi Nakamura | Hisakazu Horii
- 17:00** Open issues on the use of composite bars as prestressed reinforcement of concrete members
Alessandro Cagnoni | Pierluigi Colombi | Marco Andrea Pisani | Tommaso D'Antino
- 17:15** How much code-based shear models affect seismic assessment of pre-code RC buildings?
Maria Teresa De Risi | Santa Anna Scala | Gerardo Mario Verderame
- 17:30** Preliminary results of three-point bending tests of concrete notched beams with different content of PVA fibers
Veronica Bertolli | Tommaso D'Antino | Christian Carloni
- 17:45** Simulation of Two-way Slabs Strengthened in Punching with CFRP Strips
Shamsoon Fareed | Asad-ur-Rehman Khan | Laiba Ayub

Day 2: September 5th - Parallel sessions (#5) -16:30

Session 5-E Shape Memory Alloys in civil structures/1

Chair(s): Philipp Krooß, Christoph Czaderski Room E

- 16:30** Slenderness effect on failure modes in RC beam strengthening with unbonded Fe-SMA strips
Julien Michels | Fabienne Mamié | Christoph Czaderski | Bernhard Schranz
- 16:45** Innovative hybrid CFRP composite and Fe-SMA bonded systems for structural glass flexural strengthening
Jorge Rocha | Eduardo Pereira | José Sena-Cruz
- 17:00** Potential of Fe-Mn-Al-Ni shape memory alloys for prestressing applications in civil engineering
André Bauer | Malte Vollmer | Thomas Niendorf
- 17:15** Effects of semi-cyclic loading on the recovery stresses of iron-based shape-memory alloy bars
Antoni Mir | Sandra del Río-Bonnin | Carlos Ribas | Joaquín G. Ruiz-Pinilla | Galo Ortiz | Eva Oller | Antoni Cladera
- 17:30** Complementary in situ characterization of Fe-Mn-Al-Ni-Ti shape memory alloys
Moritz Müller | Robert Lehnert | Philipp Krooß | Thomas Niendorf | Horst Biermann | Anja Weidner
- 17:45** Activation strategies for Fe-SMA bonded to glass substrates
Zhikang Deng | Lingzhen Li | Vlad-Alexandru Silvestru | Elyas Ghafoori | Andreas Taras

Session 5-F MS17/1: Advancements in Object Digitization and Analysis: A Mini-Symposium on Innovative Tools and Methods

Chair(s): Nicola Nisticò, Lukasz Scislo Room F

- 16:30** Innovative tools and methods for digitizing both visible and non-visible attributes of cultural heritage items. Part I: needed tools and strategies
Nicola Nisticò
- 16:45** Innovative tools and methods for digitizing both visible and non-visible attributes of cultural heritage items. Part II: a multi scale approach
Nicola Nisticò
- 17:00** Enhancing Heritage Building Preservation with MCDM and HBIM: A Research Proposal
Laura Fernandez Resta | Annette Boegle | Daniel Mondino
- 17:15** IoT and Digital Twin: a new perspective for Cultural Heritage predictive maintenance
Liliana Cecere | Francesco Colace | Angelo Lorusso | Barbara Messina | Allan Tucker | Domenico Santaniello
- 17:30** Digital models for the knowledge, protection and enhancement of historic bridges. Definition of an operational protocol
Leonardo Paris | Maria Laura Rossi
- 17:45** Monitoring of the polychrome of the historic vaulting in the main presbytery of St. Mary's Basilica in Krakow using advanced 3D techniques
Izabela Drygala | Lukasz Scislo | Katerina Genikomsou

Day 2: September 5th - Parallel sessions (#5) -16:30

Session 5-G MS02: R&D of Iron-based Shape Memory alloys and their engineering application technology in China

Chair(s): Zhiqiang Dong, Jianghao Ji

Room G

- 16:30** Experimental investigation on load carrying capacity of UHPC shell reinforced with iron-based shape memory alloys (Fe-SMA)
Yifan Zhao | Xiaolin Zhao | Zhiqiang Dong
- 16:45** Improving the fire performance of concrete beams with iron-based shape memory alloys
Yichuan Zheng | Hong Zhu | Zhiqiang Dong | Gang Wu
- 17:00** Monitoring and Strengthening of PCCP utilizing distributed acoustic sensing and iron-based shape memory alloy
Jianghao Ji | Zhiqiang Dong | Hong Zhu
- 17:15** Compression performance of FRP externally wrapped Fe-SMA strips confined concrete columns under large load eccentricity
Tianhao Han | Zhiqiang Dong | Hong Zhu | Gang Wu
- 17:30** Study on the flexural behaviour of T-shaped RC beams strengthened with NSM Fe-SMA bars
Yu Sun | Xinliang Sun | Zhiqiang Dong | Hong Zhu
- 17:45** Study on the shear properties of I-shaped concrete beams reinforced with Fe-SMA rebar
Ziqing Liu | Zhiqiang Dong | Hong Zhu | Jianghao Ji | Longlong Hu

Session 5-O MS14: Advancements in Risk and Reliability Assessment of Existing Structures

Chair(s): Fadi Oudah, Vincenzo Piluso

Room O

- 16:30** Safety Concepts for Building Materials with Time Dependent Properties
André Weber
- 16:45** NLFEA damage assessment of RC framed buildings subjected to column settlements
Elena Michelini | Sławomir Dudziak | Simone Ravasini | Beatrice Belletti
- 17:00** Robustness versus redundancy of existing structures: critical review and application
Edward Steeves | Fadi Oudah
- 17:15** Random finite element reliability assessment of existing concrete structures – case studies and research direction
Fadi Oudah | Glen Norlander
- 17:30** Novel reliability evaluation of existing structures using digital image processing and random finite element simulation
Abdalla Alhashmi | Fadi Oudah
- 17:45** Multi-scale and multi-refinement framework for seismic risk assessment of urban areas
Michele Matteoni | Livio Pedone | Mattia Francioli | Francesco Petrini | Stefano Pampanin

Day 3: September 6th - Parallel sessions (#6) – 11:00

Session 6-P Structural health monitoring/6

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| Chair(s): Emmanuel Ferrier, Susan Taylor | Plenary |
| 11:00 Drive-by modal identification of high-speed railway bridge via CP response identification <i>Jiantao Li Xuanrui Pan</i> | |
| 11:15 FEA for improved implementation of IRT for monitoring of concrete bridges <i>Masoud Pedram Su Taylor Des Robinson Gerard Hamill</i> | |
| 11:30 Full-scale load test of a PRC bridge beam after 60 years of service life <i>Diego Gino Elena Miceli Luca Giordano Paolo Castaldo Giuseppe Mancini Massimiliano De Iuliis Michele Mori Maurizio Deiana Bernardo Magri</i> | |
| 11:45 Wavelet analysis to detect nonstationary and nonlinear behaviours in railway bridge <i>Claude Rospars Pierre Argoul Raphaël Carpine</i> | |
| 12:00 Hybrid vibration testing for bridge modal system identification <i>Ge-Wei Chen Xinghua Chen Piotr Omenzetter</i> | |
| 12:15 Multidisciplinary monitoring in continuous of the Cannavino bridge <i>Donato Fiore Stefania Candela Francesco Mittiga</i> | |
| 12:30 Virtual Sensing in Steel Bridges: Time Series Deep Learning for Stress Prediction <i>Bowen Meng Menghini Alessandro Leander John</i> | |
| 12:45 Modal identification of existing concrete half-joint bridges through free vibration tests <i>Dario De Domenico Matteo Mazzeo Davide Messina Roberta Santoro Giuseppe Quaranta Antonino Recupero</i> | |

Session 6-D MS16: Systems and methods for transport infrastructure surveillance and monitoring

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| Chair(s): Francesca da Porto, Antonio Bilotta | Room D |
| 11:00 Real-Time evaluation of bridge girder deflection under heavy vehicles <i>Giulio Marinello Daniele Coluccino Antonio Bilotta Domenico Asprone</i> | |
| 11:15 Structural health monitoring design for the A3 bridges in Naples <i>Antonio Bilotta Ivan Di Cristinzi Gaetano Cantisani Michele Musone Maria Rosaria Pecce</i> | |
| 11:30 Vibration-based Bayesian FE-model updating of a curved approaching span of the Indiano Bridge <i>Antonino Maria Marra Salvatore Giacomo Morano Bernardo Nicese Mario De Stefano</i> | |
| 11:45 Experimental correlations between crack opening and corrosion measurements in PC beams <i>Pascual Saura Gómez Julio Emilio Torres Martín Nuria Rebolledo Ramos Luana Araujo Servando Chinchón-Payá Javier Sánchez Montero Beatrice Belletti Simone Ravasini Alice Sirico</i> | |
| 12:00 Safety assessment of a CFRP retrofitted bridge <i>Marco di Prisco Lorenzo Radice Matteo Colombo</i> | |
| 12:15 Assessment of Environmental-induced Degradation on Reinforced Concrete Tie Rods in a 70-Year-Old Arch Bridge <i>Marco Carlo Rampini Nicoletta Russo Federica Lollini Tobia Zordan Marco di Prisco</i> | |
| 12:30 Integrating Structural Health Monitoring for Safety Assessment and Restoration Planning <i>Amedeo Caprino Filippo Lorenzoni Claudio Modena Francesca da Porto</i> | |
| 12:45 Large scale implementation of SHM and control rooms for the remote control of bridges <i>Gabriella Costantini Amedeo Caprino Luca Grande Francesca da Porto Giacomo Tedesco Nicola Molon</i> | |

Day 3: September 6th - Parallel sessions (#6)- 11:00

Session 6-E Shape memory alloys in civil structures/2

Chair(s): Antoni Cladera, Mohammad AlHamaydeh Room E

- 11:00** Experimental study on semi-cyclic loading effects on Fe-SMA reinforced concrete structures
Antoni Mir | Sandra del Río-Bonnín | Carlos Ribas | Joaquín G. Ruiz-Pinilla | Antoni Cladera
- 11:15** Mixed-Mode Cohesive Failure of CFRP to Steel and Fe-SMA to Steel bonded Joints
Niels Pichler | Lingzhen Li | Wandong Wang | Masoud Motavalli
- 11:30** Recent Trends in Novel Fe-based Shape Memory Alloys
Philipp Krooß | André Bauer | Viktor Remich | Thomas Niendorf
- 11:45** Susceptibility of a Fe-Mn-Al-Ni-Cr shape memory alloy to stress corrosion cracking
Johanna-Maria Frenck | Rebekka Müller | Thomas Niendorf
- 12:00** Modelling of Hybrid Steel-SMA Shear Walls with Local Stress and Reinforcement Considerations
Austin Martins-Robalino | Dan Palermo
- 12:15** Effect of thermomechanical training on recovery stress of Fe-based shape memory alloy
Maryam Mohri | Ali Jafarabadi | Christian Leinenbach
- 12:30** Enhancing the Structural Performance of RC Cantilevered Beams with Openings Using Iron-based Shape Memory Alloy (Fe-SMA) reinforcement
Mohamed Elkafrawy | Mohammad AlHamaydeh | Haya Zuaier | Doha El Maoued
- 12:45** RC beams externally strengthened by steel plates: Experimental database and preliminary analysis
Annalisa Napoli | Maria Rosaria Pecce | Enzo Martinelli

Session 6-F MS08/2: Advances in the investigation of the bond mechanism of externally bonded composites and FRP bars

Chair(s): Tommaso D'Antino, Francesco Focacci Room F

- 11:00** Bond behaviour of FRCM-masonry joints after high temperature exposure
Pietro Mazzuca | Luciano Ombres | Alfredo Micieli | Francesco Campolongo | Andrea Buccieri
- 11:15** Bond and tensile behavior of Textile Reinforced Mortars with traditional and alternative matrices
Kevin Escobar | Juan Murcia-Delso | Eva Oller
- 11:30** Numerical modeling of the bond behaviour of PBO FRCM-concrete joints at elevated temperature
Joao Pedro Firmo | Pietro Mazzuca | Alfredo Micieli | Luciano Ombres | Inês Cruz Rosa
- 11:45** Influence of glass-fiber epoxy coating on bond and tensile behavior of FRCM systems
Rebecca Grazzini | Giulia Misseri | Luisa Rovero
- 12:00** Bond behavior between metallic and non-metallic bars and sustainable concrete: preliminary study
Maria Antonietta Aiello | Denny Coffetti | Luigi Coppola | Maria Milena Della Vecchia | Marianovella Leone | Annalisa Napoli | Simone Rapelli | Roberto Realfonzo | Vincenzo Romanazzi
- 12:15** Experimental and numerical bond behavior of PBO FRCM tested using a pull-out set-up
Veronica Bertolli | Tommaso D'Antino
- 12:30** An investigation on the bond behavior of basalt fiber reinforced polymer (BFRP) rebars embedded in conventional concrete
Sadeq Annooz | Eric Williams | John J. Myers
- 12:45** Bond behavior of magnesium potassium phosphate cement (MKPC) coating for steel reinforcement in conventional concrete and related repair materials
Eric Williams | Sadeq Annooz | John J. Myers

Day 3: September 6th - Parallel sessions (#6) -11:00

Session 6-G MS10: Economic assessment and Life-Cycle performance in building and civil engineering works

Chair(s): Antonio Nesticò, Renato Passaro

Room G

- 11:00** Evaluation of technical, environmental and social performances and impacts of bio-based products for a more sustainable building sector
Patrizia Ghisellini | Ivana Quinto | Renato Passaro | Sergio Ulgiati
- 11:15** Cultural heritage and seismic disasters: Assessment methods and damage types / A Cost-Based programming model for reduction of seismic vulnerability in Neapolitan metropolitan area
Pierfrancesco De Paola | Mario Ferraro | Benedetto Manganelli | Francesco Tajani | Francesco Paolo Del Giudice
- 11:30** The irreversible depreciation of a building and the threshold for demolition
Benedetto Manganelli | Pierfrancesco De Paola | Francesco Paolo Del Giudice
- 11:45** Building upcycling vs. building reconstruction investment decisions: a life cycle methodology simulation / Building upcycling vs. building reconstruction investment decisions: a focus on the discount rate
Elena Fregonara | Diego Giuseppe Ferrando
- 12:00** Sustainable structural retrofitting for historic buildings: a long-term decision analysis approach
Raul Berto | Chiara Bedon | A. Mio | A. Mazelli | Paolo Rosato
- 12:15** Life Cycle Costing for Structural Analysis and Design
Gabriella Maselli | Francesco Ascione | Antonio Nesticò
- 12:30** Life Cycle Sustainability Assessment of Industrial Flooring
Federica Russo | Gabriella Maselli | Antonio Nesticò
- 12:45** Recovery of historic real estate: Life Cycle Costing and economic feasibility
Calabrò Francesco | Giovanna Emanuela Minniti | Antonio Fotia | Raffaele Pucinotti

Session 6-O Practical applications and case studies/1

Chair(s): André Weber, Issam Harik

Room O

- 11:00** Seismic vulnerability evaluations of a masonry tower by considering creep effects
Alba Hyseni | Alessio Cascardi | Francesco Micelli | Maria Antonietta Aiello
- 11:15** Implementation of the Non-destructive Testing for Damage Analysis in Structural Engineering
Szymon Grzesiak | Christoph de Sousa | Matthias Pahn
- 11:30** Assessing Asphalt Pavement Pre-Compaction with Paver Screed Frequency Measurements
Leandro Harries | David Kempf | Matthias Scheidig | Maximilian Schütz | Moritz Middendorf | Kazim Uzar | Xiaohui Su | Stefan Böhm | Jia Liu
- 11:45** Rebar detection: Comparison of stepped frequency continuous wave and pulsed GPR
Mercedes Solla | Alexandre Novo | Ahmed Elseicy | Francisco Javier Prego
- 12:00** Evaluation of Historic Truss Bridges
Abheetha Peiris | Issam Harik
- 12:15** The role of in situ dynamic tests on model updating of existing R.C. infilled structures
Alessandra De Angelis | Roberto Tartaglia | Vera Rillo | Leopoldo Berroa Cordero | Giuseppe Maddaloni
- 12:30** Case study: Câmara Municipal de Guimarães. HBIM modeling from non-destructive techniques
Yago Cruz | Gutier Nuñez | Manuel Cabaleiro | Helder S. Sousa | Borja Conde | Daniela Oreni
- 12:45** Stability-Based Optimum Design of Tuned Mass Damper using Chaos Game Optimization in Pole Placement Scheme
Amir Shamsaddinlou | Dario De Domenico | Sina Shirgir | Sara Majidi

Day 3: September 6th - Parallel sessions (#7) -14:15

Session 7-P Structural health monitoring/7

Chair(s): Dario De Domenico, João Conde Silva

Plenary

- 14:15** Smart monitoring of RC T beams strengthened by external bonded FRP
Andrea Armonico | Emmanuel Ferrier | Laurent Michel
- 14:30** Cointegration technique to account for environmental variability in a concrete dam
Marco Pirrò | Carmelo Gentile | Sérgio Pereira | Álvaro Cunha | Filipe Magalhães
- 14:45** Monitoring internal swelling reactions in concrete dams
João Conde Silva | Carlos Serra
- 15:00** Development of generic AI models to predict the movement of vehicles on bridges
Eshwar Kumar Ramasetti | Ralf Herrmann | Sebastian Degener | Matthias Baeßler
- 15:15** Vehicle Classification using BiLSTM for Predictive Maintenance and Digital Twins
Robby Weiser | Florian Begemann | Julian Unglaub | Klaus Thiele
- 15:30** Bus Network Based Fleet Monitoring Towards Net Zero Transport
Kun Feng | Su Taylor | David Hester | Myra Lydon | Juliana Early
- 15:45** Structural health monitoring of bridge under road traffic: data-driven approach
Claude Rospars | Gaëtan Patinier | Pierre Argoul | François-Baptiste Cartiaux
- 16:00** Structural Health Monitoring of Cable Stays in Power Distribution Networks
Pat Rajeev | Sahan Bandara | Saman Fernando | Emad Gad
- 16:15** Assessing the Evolution of Structural Health Monitoring through Smart Sensor Integration
Victor Henrique Procópio de Oliveira | Alan Reis | José Américo Alves Salvador Filho

Session 7-D Structural strengthening and repair/5

Chair(s): Alper Ilki, Elide Nastri

Room D

- 14:15** Experimental assessment of the flexural/shear strengthening effectiveness of new CFRP bars
Ali Ziaeinia | Joaquim A.O. Barros | Luís Correia | Salvador J.E. Dias | Filipe Dourado
- 14:30** Structural Rehabilitation using C-FRP: A Two-Decade Evaluation of Durability and Guidelines
Francesco Bencardino | Roberta Curto | Pietro Mazzuca
- 14:45** Effectiveness of FRP bar anchors for prestressed concrete members
Alessandro Cagnoni | Pierluigi Colombi | Marco Andrea Pisani | Tommaso D'Antino
- 15:00** Comparative Study of Design Models for Shear Strengthening of RC Beams with NSM FRP
Amir Mofidi | Sara Mirzabagheri | Mona Rajabifard | Kouros Nasrollahzadeh
- 15:15** Accuracy of fib Bulletin 90 formulations for the bending capacity of FRP-strengthened RC beams
Alba Codina | Veronica Bertolli | Cristina Barris | Tommaso D'Antino | Lluis Torres
- 15:30** Seismic Performance of Damaged RC Column Repaired with Structural Mortar
Sener Kolemenoglu | Omer Faruk Halici | Cem Demir | Cem Aydemir | Müberra Eser Aydemir | Alper Ilki
- 15:45** Numerical characterisation of FRP curved reinforcement produced by filament winding
Luigi Granata | Francesco Ascione | Saverio Spadea
- 16:00** New bonding agents for the NSM FRP strengthening system for concrete structures
Sareh Akbarpoor | Mohammadali Rezazadeh | Bahman Ghiassi | Keerthan Poologanathan
- 16:15** Use of equivalent interface samples during fracture mechanics investigations
Quentin Sourisseau | Emilie Lepretre | X. Chapeleau | S. Chataigner | S. Paboef | M. Deydier

Day 3: September 6th - Parallel sessions (#7) -14:15

Session 7-E MS01: Multifunctional materials for sustainable constructions: integrated thermal, structural and sensing systems

| Chair(s): Antonio Caggiano, Antonella D'Alessandro | Room E |
|---|--------|
| 14:15 Multifunctional prefabricated textile capillary tube panels for integrated renovation of buildings <i>Eun-Rim Baek Daniel A. Pohoryles Stylianos Kallioras Dionysios Bourmas</i> | |
| 14:30 Bond performance of a multifunctional strengthening system for concrete structures <i>Alin Josias Thattil L. Carreras M. Baena D.S.-Rodríguez M. Braga M. Aghabagloo</i> | |
| 14:45 Eco-friendly alternative to autoclaved aerated concrete with heat storage/release function <i>Barbara Klemczak Christina Strunz Michael Dünigfelder Grzegorz Cygan Eduardus Koenders</i> | |
| 15:00 Geopolymers as adhesive for sustainable NSM CFRP strengthening of RC structures <i>Reza M. Fioruz João A.P.P. Almeida Norma Gaibor Vitor M.C.F. Cunha Eduardo N.B. Pereira Joaquim A.O. Barros</i> | |
| 15:15 A novel structural and energy cementitious materials for nearly-zero energy buildings <i>Mahdi M. K. Zanjani Victor Fachinotti Paula Folino Antonio Caggiano</i> | |
| 15:30 The First Attempt at Utilizing Mineral-Impregnated Carbon Fibre Reinforcements as Load Sensors for Structural Health Monitoring <i>Wenkui Dong Marco Liebscher Jitong Zhao George Karalis Mu Xu Viktor Mechtcherine</i> | |
| 15:45 Multifunctional sensing mortar for masonry structures: first development and characterization <i>Antonella D'Alessandro Daniel A. Triana-Camacho Andrea Meoni Filippo Ubertini</i> | |
| 16:00 Dynamic and static thermal performance of foam concrete with phase change materials via Hot Box <i>Christina Strunz Benjamin Tourn Cornelia Stark</i> | |

Session 7-F MS17/2: Advancements in Object Digitization and Analysis: A Mini-Symposium on Innovative Tools and Methods

| Chair(s): Nicola Nisticò, Francesco Colace | Room F |
|---|--------|
| 14:15 3D vibration measurements with optical systems: selected methods for measurement enhancements <i>Lukasz Scislo Izabela Drygala</i> | |
| 14:30 A Deep Active Learning Framework for Crack Detection in Digital Images of Paintings <i>Nicolas Nadisic Yoann Arhant Niels Vyncke Sebastiaan Verplancke Srdan Lazendic Aleksandra Pižurica</i> | |
| 14:45 Optimized Supporting Structures for Small Artefacts: Generative Designed prototypes <i>Luca Belluomo Michele Bici Eleonora Storri Francesca Campana</i> | |
| 15:00 Manini Connect: IoT for integrated building monitoring <i>Manuel Boccolini Leonardo Casali Salvatore Romano Giuseppe Paci Arianna Peppoloni Bruno Del Lago</i> | |
| 15:15 The Helmallery multy-storey building: an example of metaverse museum for cultural heritage dissemination <i>Umberto Ceccarelli</i> | |
| 15:30 Metaverse and Museum: a Case Study <i>Liliana Cecere Francesco Colace Brij B. Gupta Angelo Lorusso Barbara Messina Carmine Valentino</i> | |
| 15:45 A workflow for rigorous tunnel deformation analysis of MLS data <i>Alessandro Di Benedetto Margherita Fiani</i> | |
| 16:00 Field monitoring, BIM representation and FEM analysis of preheater towers in cement plants <i>Paula Barboza Salvatore Barba Andrea di Filippo C. Ferreyra G. Etse E. Martinelli</i> | |
| 16:15 Application of 3D laser scanning technique in precise identification of falling-off hazards of external walls <i>Dongbo Zhang Zhuolin Wang Yongqun Zhang Xi Chen</i> | |

Day 3: September 6th - Parallel sessions (#7) -14:15

Session 7-G Durability issues as related to harsh environments

Chair(s): Antonio Cibelli, Parinaz Panjehbashi Aghdam

Room G

- 14:15** Theoretical effects of corrosion on lateral stress along reinforcement bars in concrete
Antonio Bossio | Gian Piero Lignola | Andrea Prota
- 14:30** Degree of composite action of steel beams with precast concrete hollow core slabs
Parinaz Panjehbashi Aghdam | Serge Parent | David W. Dinehart | Nathalie Roy
- 14:45** Live Load Design and Safety Concept for Building Materials with Time Dependent Properties
André Weber
- 15:00** Multiphysics-Lattice Discrete Particle Model: possible strategies for upscaling
Antonio Cibelli | Roman Wan-Wendner | Giovanni Di Luzio | Emidio Nigro
- 15:15** Development and validation of a creep frame adapted for ELS (End Load Split) test
Arij Fawaz | Emilie Lepretre | Xavier Chapeleau | Sylvain Chataigner
- 15:30** Durability of concrete assessed via different unsaturated and steady-flow methods
Laurena De Brabandere | Natalia Mariel Alderete | Nele De Belie
- 15:45** Experimental Response of Headed Stud Shear Connectors in Steel-UHPC Composite Slabs
Carmine Lima | Marco Pepe | Emidio Nigro | Enzo Martinelli
- 16:00** On the assessment of the in-place concrete quality: Rebound hammer and Pull-off tests reliability
Said Debbakh | Siham Chaïbeddra | Adel Benidir
- 16:15** Development for Corrosion Protection Method of Reinforcement in RC Structures by Electromagnetic Induction
Hideki Oshita

Session 7-O Practical applications and case studies/2

Chair(s): Annalisa Napoli, Petr Tej

Room O

- 14:15** Load-Bearing Capacity Assessment of Traffic Superstructures for Roads and Tramways
Matthias Scheidig | Kazim Uzar | David Kempf | Leandro Harries | Stefan Böhm | Jia Liu
- 14:30** Preliminary bridge damage assessment through machine learning
Francesco Pentassuglia | Athanasia K. Kazantzi | Asaad Faramarzi | Stergios-Aristoteles Mitoulis
- 14:45** Structural monitoring and rehabilitation of a gerber bridge
Piero Colajanni | Michele Fabio Granata | Lidia La Mendola | Elio Lo Giudice
- 15:00** Combined strain, vibration, and acoustic monitoring of the Jules Verne viaduct
F.-B. Cartiaux | J. Semiao | C. Rospars | D. D. Mandal | M. Bentahar | J.-J. Brioist
- 15:15** A framework for the assessment of road network resilience: application to different urban contexts
Andrea Miano | Marco Civera | Fabrizio Aloschi | Annalisa Mele | Valerio De Biagi | Bernardino Chiaia | Fulvio Parisi | Andrea Prota
- 15:30** The dynamic analysis of the Troja footbridge – the analysis of the possibility of the early warning before the collapse
Pavel Ryjáček | Vladimír Příbramský | Alexey Tretyakov | Tomáš Plachý
- 15:45** In-situ testing and modeling of a masonry bridge in Surrey (UK): Waverley Mill bridge
Nicoletta Bianchini | Zein Sabra | Kieren Green | Ross Wright
- 16:00** Possible Approaches to the Reconstruction of the Vyšehrad Bridge in Prague
Petr Tej | Alena Tejová | Oto Melter | Zuzana Auská
- 16:15** Global Perspectives on Recycled Concrete Aggregates (RCA): A Comprehensive Review of Worldwide Applications and Best Practices
Rahma Dhemaied | Ahmed Soliman | Abdurrahmaan Lotfy

Pre-Conference Tour

September 3rd

16.00 Gathering of participants
Salerno, Piazza della Libertà

**Technical visit of the new Salerno Maritime terminal
boat tour of the Amalfi Coast**

16.30 Technical visit
Salerno, Maritime terminal

17.30 Boat tour of the Amalfi Coast
Salerno-Positano-Salerno

20.30 Return to Salerno



Welcome reception

September 4th

Tennis Club Salerno – 19:30 h
Via Lungomare Clemente Tafuri – Salerno



Conference Dinner

September 5th



Grand Hotel Salerno – 20:00 h
Via Lungomare Clemente Tafuri, 1 – Salerno

Post-Conference Tour

September 7th

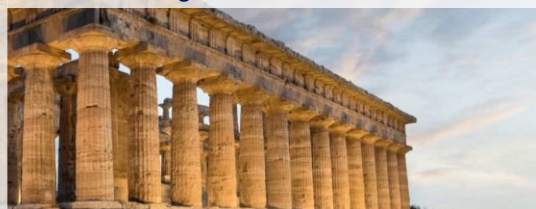
08:30 Departure
Salerno, Piazza della Concordia

Archaeological Park of Paestum and Velia

10:00 Presentation of research activities
Paestum, Museum

11:00 Archaeological tour and Technical visit
Paestum, Archaeological area

13:00 Brunch
Paestum, Museum gardens



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