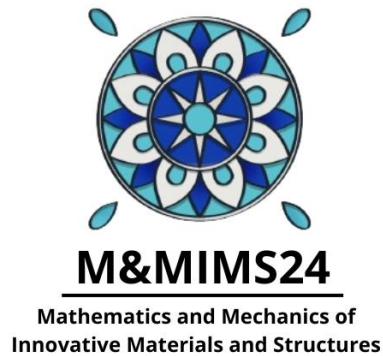


International Workshop
Mathematics and Mechanics of Innovative Materials and Structures
M&MIMS 2024 – Salerno, Italy – July 11- 13, 2024



Workshop Program

11th July, 2024

<u>9.00 – 9.30</u>	Workshop Check – in
<u>9.30 – 10.00</u>	Opening Remarks

10.00-11.30 Morning Session 1

<u>10.00-10.30</u>	Fernando Fraternali , University of Salerno ILAM Project, Innovative tensegrity lattices and architected metamaterials <i>Current state of the research and future perspectives</i>
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<u>10.30-11.00</u>	Antonella Petrillo , University of Naples Parthenope STABSOIL Project, STABILization of contaminated SOILs <i>Current state of the research and future perspectives</i>
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<u>11.00-11.30</u>	Ada Amendola , University of Salerno SUSTBUILD Project, Sustainable composite structures for energy-harvesting and carbon-storing buildings <i>Current state of the research and future perspectives</i>
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h 11.30 - 12.00 Coffee Break

12.00-13.00 Morning Session 2

12.00-12.30 **Nicholas Fantuzzi**, University of Bologna
Lagrange Multiplier Method and Schur decomposition for the solution of nonlocal strain gradient beams and plates using Lagrange shape functions
Authors: N. Fantuzzi^{1,2}, S. Qaderi^{1,2}, M. Bacciocchi³
¹*Department of Civil, Chemical, Environmental and Materials Engineering, University of Bologna, Ravenna (Italy)*
²*Department of Civil, Chemical, Environmental and Materials Engineering, University of Bologna, Bologna (Italy)*
³ *Department of Economics, Science, Engineering and Design, University of San Marino, San Marino*

12.30-13.00 **Marzia Sara Vaccaro**, University of Naples Federico II
Geometrically nonlinear problems of nonlocal gradient structures
Authors: Raffaele Barretta¹, Raimondo Luciano², Francesco Marotti de Sciarra¹, Daniele Ussorio¹, Marzia Sara Vaccaro¹
¹*Department of Structures for Engineering and Architecture, University of Naples Federico II, Naples (Italy)*
²*Department of Engineering, University of Naples Parthenope, Naples (Italy)*

h 13.00 - 14.30 Lunch Break

14.30-16.00 Afternoon Sessions 1

14.30-15.00 **Ada Amendola**, University of Salerno
NEXTBUILDING Project, Next-generation structures for natural disaster-proof buildings
Current state of the research and future perspectives

15:00-15:30 **Keynote Lecture by Professor Anthony Rosato**
Department of Mechanical Engineering, New Jersey Institute of Technology (USA)
Neural network modeling of monodisperse granular systems

15:30-16:00 **Keynote Lecture by Professor Julian Rimoli**
Department of Mechanical and Aerospace Engineering, University of California Irvine (USA)
Machine learning for constitutive modeling

16:00 – 16:30 Coffee Break

16.30-19.30 Afternoon Sessions 2

16.30-17.00 **Lorenzo Leonetti**, University of Calabria
A numerical investigation of multiscale failure phenomena in bioinspired composites by using a cohesive/volumetric homogenization technique

Authors: F. Greco¹, L. Leonetti¹, P. Lonetti¹, P. Nevone Blasi¹, A. Pascuzzo²

¹ *Department of Civil Engineering, University of Calabria, Rende (Italy)*

² *Department of Engineering, Digital University Pegaso, Napoli (Italy)*

17.00-17.30 **Fabrizio Greco**, University of Calabria
Instability and bifurcation failure of nonlinear microstructured solids with imperfect interfaces

Authors: D. Gaetano¹, F. Greco¹, R. Luciano², A. Pranno¹, G. Sgambitterra¹

¹ *Department of Civil Engineering, University of Calabria, Rende (Italy)*

² *Department of Engineering, Parthenope University, Napoli (Italy)*

17.30-17.50 **Valentina Adinolfi**, University of Salerno
Design and modeling of innovative seismic isolators

Authors: V. Adinolfi¹, G. Germano¹, G. Di Chiara^{1,2}, G. Benzoni¹, A. Amendola, F. Fraternali¹

¹ *Department of Civil Engineering, University of Salerno, Fisciano, (Italy)*

² *Department of Civil Engineering and Architecture, University of Catania, Catania (Italy)*

17.50-18.10 **Giuseppina Di Chiara**, University of Salerno
Design, experimental characterization and modeling of mechanically stabilized soils

Authors: G. Di Chiara^{1,2}, I. Farina³, F. Fraternali¹, A. Petrillo³

¹ *Department of Civil Engineering, University of Salerno, Fisciano (Italy)*

² *Department of Civil Engineering and Architecture, University of Catania, Catania (Italy)*

³ *Department of Engineering and INSTM Research Unit, University of Naples "Parthenope", Napoli (Italy)*

18.10-18.30 **Domenico Ammendolea**, University of Calabria
An efficient modeling approach based on the moving-mesh technique for reproducing crack growth in nano-enhanced composite structures

Authors: D. Ammendolea¹, L. Leonetti¹, P. Lonetti¹, A. Pascuzzo², G. Sansone¹

¹ *Department of Civil Engineering, University of Calabria, Rende (Italy)*

² *Department of Civil Engineering, Digital University Pegaso, Napoli (Italy)*

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- 18.30-18.50 **Matteo Viscoti**, University of Salento
Advanced numerical modeling of doubly-curved shells made of innovative smart materials based on higher order theories and differential quadrature method
Authors: Francesco Tornabene¹, Caterina Fai¹, Matteo Viscoti¹, Rossana Dimitri¹
¹ *Department of Innovation Engineering, University of Salento, Lecce (Italy)*
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- 18.50-19.10 **Rana Nazifi Charandabi**, University of Salerno
Tensegrity systems for next generation solar structures
Authors: R. Nazifi Charandabi¹, J. Rimoli², F. Fraternali³, A. Amendola³
¹ *Department of Information Engineering, Electrical Engineering and Applied Mathematics, University of Salerno, Fisciano (Italy)*
² *Department of Mechanical and Aerospace Engineering, University of California Irvine, Irvine 92697, California (USA)*
³ *Department of Civil Engineering, University of Salerno, Fisciano (Italy)*
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- 19.10-19.30 **Giuseppe Lovisi**, University of Salerno
Application of Surface Stress-Driven Model for Higher Vibration Modes of Functionally Graded Nanobeams
Authors: R. Penna¹, A. Lambiase¹, G. Lovisi¹, L. Feo¹
¹ *Department of Civil Engineering, University of Salerno, Fisciano (Italy)*
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h 20.00 Gala dinner

12th July, 2024

9.00-13.00, 15.00-18.00

Parallel sessions between the members of the units of the research projects ILAM, NEXTBUILDING, STABSOIL and SUSTBUILD

13th July, 2024

Social activities and meetings with the stakeholders