

Marios Mavros, Ph.D., P.E.

CONTACT INFORMATION	1 University Avenue, 2109 Aglantzia, Cyprus	Phone +357 22892268 E-mail: mavros.marios@ucy.ac.cy
RESEARCH INTERESTS	Marios is Assistant Professor in the Department of Civil and Environmental Engineering at the University of Cyprus. His research focuses on finite element modeling, earthquake engineering, and reinforced masonry and concrete structures. He is actively developing and applying numerical models to improve their seismic performance and to explore the effect of material aging. The ultimate goal of his research is to contribute to the advancement of knowledge in these areas and to enhance the resilience of our built environment against natural disasters.	
EDUCATION	University of California, San Diego, California, USA <i>Ph.D. in Structural Engineering</i> 12/2015 <ul style="list-style-type: none">• Dissertation: "Experimental and Numerical Investigation of the Seismic Performance of Reinforced Masonry Structures," advisor: Prof. Benson Shing University of California, San Diego, California, USA <i>M.Sc. in Structural Engineering</i> 3/2012 <ul style="list-style-type: none">• G.P.A.: 3.98/4.00 National Technical University of Athens (NTUA), Athens, GREECE <i>Diploma in Civil Engineering</i> 9/2010 <ul style="list-style-type: none">• Thesis: "Investigation of effective length in members of diagonal braces," advisor: Prof. Charis Gantes• G.P.A.: 9.48/10.00 (Ranked 1st)	
ACADEMIC EXPERIENCE	University of Cyprus, Department of Civil and Environmental Engineering, Nicosia, Cyprus <i>Lecturer</i> 1/2020 - 7/2024 <i>Assistant Professor</i> 8/2024 - Present <ul style="list-style-type: none">• CEE 341 - Design of Reinforced Concrete Structures• CEE 400 - Earthquake Engineering• CEE 540 - Behavior and Design of Reinforced Concrete Structures• CEE 545 - Nonlinear Analysis of Structures University of California, San Diego, Department of Structural Engineering, California, USA <i>Graduate Student Researcher</i> 9/2010 - 9/2015 <ul style="list-style-type: none">• Nonlinear dynamic finite element analysis of reinforced masonry structures.• Constitutive modeling and element formulation for finite element analysis.• Full-scale shake-table testing of two multistory reinforced masonry structures.	

Teaching Assistant

1/2013 - 12/2014

- SE 211 - Advanced RC/PC
- SE 221 - Earthquake Engineering
- SE 201A - Advanced Structural Analysis

PROFESSIONAL
EXPERIENCE

Simpson Gumpertz & Heger, Waltham, Massachusetts, USA

Project Consultant

9/2015 -8/2019

Main tasks:

- Nonlinear finite element analysis.
- Structural evaluation.
- Product development.
- Risk analysis.
- Optimization.

JOURNAL
PUBLICATIONS

- J1. Ahmadi, Farhad; **Mavros, Marios**; Shing, Benson; Klingner, Richard; and McLean, David (2013). "Displacement-based Seismic Design for Reinforced Masonry Shear-wall Structures, Part 1: Background and Trial Application." *Journal of Earthquake Spectra*, DOI: 10.1193/120212EQS345M.
- J2. Ahmadi, Farhad; **Mavros, Marios**; Shing, Benson; Klingner, Richard; and McLean, David (2013). "Displacement-based Seismic Design for Reinforced Masonry Shear-wall Structures, Part 2: Validation with Shake-table Tests." *Journal of Earthquake Spectra*, DOI:10.1193/120212EQS344M.
- J3. Stavridis, Andreas; Ahmadi, Farhad; **Mavros, Marios**; Shing, Benson; Klingner, Richard; and McLean, David; (2015). "Shake-table Tests of a Full-scale Three-story Reinforced Masonry Shear Wall Structure." *ASCE Journal of Structural Engineering*, DOI: 10.1061/(ASCE)ST.1943-541X.0001527.
- J4. **Mavros, Marios**; Ahmadi, Farhad; Shing, Benson; Klingner, Richard; McLean, David; and Stavridis, Andreas; (2015). "Shake-table Tests of a Full-scale Two-story Shear-dominated Reinforced Masonry Wall Structure." *ASCE Journal of Structural Engineering*, DOI: 10.1061/(ASCE)ST.1943-541X.0001528.
- J5. Kottari, Alexandra; **Mavros, Marios**; Murcia-Delso, Juan; and Shing, Benson; (2017). "Interface model for bond-slip and dowel-action behavior" *ACI Structural Journal*, DOI: 114. 10.14359/51689870.
- J6. **Mavros, Marios**; Panagiotou, Marios; Koutromanos, Ioannis; Alvarez, Rodolfo; Restrepo, Jose I. (2022). "Seismic Analysis of a Modern 14-story RC Core Wall Building System Using the BTM-shell Methodology." *Earthquake Engineering and Structural Dynamics*, DOI: 10.1002/eqe.3627.
- J7. **Mavros, Marios**; Panagiotou, Marios; Koutromanos, Ioannis; Restrepo, Jose I. (2023). "Nonlinear Dynamic Seismic Analysis of a Modern Concrete Core Wall Building in Los Angeles Using the BTM-shell Methodology." *Earthquake Engineering and Structural Dynamics*, DOI: 10.1002/eqe.3956
- J8. **Mavros, Marios**; Murcia-Delso, Juan; Panagiotou, Marios; Koutromanos, Ioannis. (2023). "Seismic Analysis of Reinforced Concrete Flanged Walls under Multiaxial Loading using

the BTM-shell Method.” *Bulletin of Earthquake Engineering* , [Submitted].

CONFERENCE
PUBLICATIONS

- C1. Stavridis, Andreas; **Mavros, Marios**; Ahmadi, Farhad; Shing, Benson; Klingner, Richard; and McLean, David. ”Shake-Table testing of a 3-story, full-scale reinforced masonry wall system.” In: *15th International Brick and Block Masonry Conference*, June 03-06, 2012.
- C2. **Mavros, Marios**; Ahmadi, Farhad; Shing, Benson; Klingner, Richard; and McLean, David. ”Seismic Performance of a Two-Story Reinforced Masonry Building Designed with a Displacement-Based Method.” In: *10th National Conference on Earthquake Engineering*, July 21-25, 2014.
- C3. **Mavros, Marios**; Koutromanos, Ioannis and Shing, Benson. ”Nonlinear finite element analysis of reinforced masonry structures subjected to earthquake forces.” In: *12th North American Masonry Conference*, May 17-20, 2015.
- C4. Kottari, Alexandra; **Mavros, Marios**; Murcia-Delso, Juan; and Shing, Benson. ”Interface model for bond-slip and dowel-action behavior.” In: *Engineering Mechanics Institute 2017*, June 4-7, 2017.
- C5. **Mavros, Marios**; Panagiotou, Marios; Koutromanos, Ioannis; Alvarez, Rodolfo; Restrepo, Jose I. ”Seismic Analysis of a Modern 14-story RC Core Wall Building System Using the BTM-shell Methodology.” In: *Engineering Mechanics Institute 2021*, May 25–28, 2021.
- C6. Panagiotou, Marios; Koutromanos, Ioannis; **Mavros, Marios**; Deng, Xianjue; Alvarez, Rodolfo; Restrepo, Jose I.; Murcia-Delso, Juan; Acero, Gabriel. ”Nonlinear Beam-Truss Model (BTM) for Seismic Performance Evaluation of Reinforced Concrete Wall Buildings.” In: *SEAOC Convention 2021*, September 22–25, 2021.
- C7. **Mavros, Marios**; Panagiotou, Marios; Koutromanos, Ioannis; Alvarez, Rodolfo; Restrepo, Jose I. ”Computational Fully Nonlinear Seismic Performance Investigation of a Modern 14-story Core Wall Building in Los Angeles.” In: *12th National Conference on Earthquake Engineering 2022*, June 22 – July 1, 2022.
- C8. Koutromanos, Ioannis; **Mavros, Marios**; Panagiotou, Marios; Restrepo, Jose I; Alvarez, Rodolfo. ”Computational performance assessment and failure analysis of reinforced concrete wall buildings under seismic loads.” In: *Numerical Modeling Strategies for Sustainable Concrete Structures 2022*, July 4 – July 6, 2022.
- C9. **Mavros, Marios**; Panagiotou, Marios; Koutromanos, Ioannis; Restrepo, Jose I; Alvarez, Rodolfo. ”Fully Nonlinear Performance-based Seismic Analysis of a Modern RC Core Wall Building in Los Angeles Using the BTM-shell Methodology.” In: *3rd European Conference on Earthquake Engineering & Seismology*, September 4 – September 9, 2022.
- C10. Panagiotou, Marios; **Mavros, Marios**; Koutromanos, Ioannis; Alvarez, Rodolfo; Restrepo, Jose I.; Acero, Gabriel; Tunick, Daniel; Kirkpatrick, Drew; Wilkerson, Ryan; Hata, Owen; Gemmil, Michael. ”Evaluation of Standard Nonlinear Seismic Analysis for a Modern Concrete Core Wall Building in Los Angeles.” In: *SEAOC Convention 2022*, August 31 – September 3, 2022.

C11. Mavros, Marios; Hadjipantelis, Nicolas; Ioannou, Ioannis; Kontovourkis, Odysseas. "3D Printed Steel Reinforcement for Strengthening Historic Unreinforced Masonry Structures." In: *WCEE 2024*, June 30 – July 5, 2024.

C12. **Mavros, Marios**; Murcia-Delso, Juan; Panagiotou, Marios; Koutromanos, Ioannis. "Seismic Analysis of RC U-Walls for a Blind Prediction Competition." In: *WCEE 2024*, June 30 – July 5, 2024.

INVITED
LECTURES

IL1. **Seismic Resilience Innovations: Exploring Numerical Modelling in RC Structures and Novel 3D Printed Reinforcement for Unreinforced Masonry Heritage Structures**, November 2023, Structural Engineers' Association Nepal Lecture Series - Towards Quality Structures, Nepal

GRANTS

Enhancing Structural Performance

- Start-up Grant funded by University of Cyprus 2020
Duration: 1/2022 - 12/2025 €50,000

Strengthening of Unreinforced Ashlar and Rubble Masonry Heritage Structures

- Proof of Concept funded by Research and Innovation Foundation 2023
Duration: 5/2023 - 1/2024 €40,000
- Internal Research Program funded by University of Cyprus 2023
Duration: 9/2023 - 9/2025 €60,000
- ONISILOS H2020-MSCA COFUND 2023
Duration: 11/2023 - 11/2025 €170,000

RESEARCH
SUPERVISION

University of Cyprus

- Modeling of the Varina-Enon bridge accounting for creep phenomena *M.Sc.* 2022
- Control algorithms for active tuned mass dampers 2023

ORGANIZED
STUDENT
COMPETITIONS

University of Cyprus, Department of Civil and Environmental Engineering, Nicosia, Cyprus
Founder and Organizer 1/2022 - Present

The competition aims to strengthen the skills of the students of the Civil and Environmental Engineering (CEE) department in areas related to their fields. Students are asked to solve a small-scale design and construction problem using knowledge they have acquired in their first 3 years of study in the CEE department in the areas of building materials, strength of materials, design and analysis of structures. For the competition prizes, funding is secured from industrial agencies each year.

HONORS AND
AWARDS

UCLouvain, 2022 Blind Prediction Competition: Flexural and Torsional Response of RC U-shaped Walls

- 1st place for predicting the cyclic response of a U-shaped RC wall subjected to bending and axial loads.

- 1st place for predicting the cyclic response of a U-shaped RC wall subjected to torsional and axial loads.

University of California, San Diego, Department of Structural Engineering

- Englekirk Fellowship, 2010 - 2011

Foundation of State Scholarships Greece

- Fellowship of State Scholarships Greece, granted to the top 3 undergraduate students of each school every year, 2005-2008
- Award of State Scholarships Greece, granted to the top undergraduate student of each school every year, 2005-2008

National Technical University of Athens

- Mathematics Award "Christos Papakyriakou", Mathematics Department of National Technical University of Athens, 2005 and 2006
- Mathematics Award "Nikolaou Kritikou", Mathematics Department of National Technical University of Athens, 2006

A.G. Leventis Foundation

- A.G. Leventis Foundation educational grant, 2010 - 2013

Other

- Representative of Cyprus in the International Physics Olympiad in Taiwan, Selected at regional and then national level, 2003
- Silver Medal, Pan Cyprian Mathematical Olympiad, 2002

REVIEWER FOR JOURNALS	• Earthquake Engineering and Structural Dynamics	2020 - <i>Present</i>
	• Bulletin of Earthquake Engineering	2020 - <i>Present</i>
	• Journal of Structural Engineering	2017 - <i>Present</i>

PROFESSIONAL MEMBERSHIPS AND LICENSES	• Cyprus Scientific and Technical Chamber (ETEK)	2021 - <i>Present</i>
	• Cyprus Association of Civil Engineers (CYACE)	2021 - <i>Present</i>
	• Professional Civil Engineer, California, License Number: 90497	2019 - <i>Present</i>

LEADERSHIP SKILLS	• Second Lieutenant of the Cyprus Army , leader and coordinating officer for small army unit (selected through exams), during compulsory military service, 2003-2005
	• Founder of the Hellenic Student Association at UC San Diego , Treasurer, 2013-2015
	• Member of organizing committee of the Educational Trip 2015 , www.edutrip.gr, 2015
	• Founder and Organizer of the Student Competition "Building the Future" , 2022 - Present

COMPUTER SKILLS	Programming Languages
	• Python, Matlab, Fortran
	Softwares
	• ABAQUS, FEMAP, ANSYS Workbench, FEAP, LS-DYNA
	• Mathematica, MathCad
	• Microsoft Office (Word, Excel, Power Point)
	• Autocad 2D (AutoCAD 2006 LEVEL I, Certificate No 2324487), Autocad 3D (AutoCAD 2007 LEVEL II, Certificate No 2356107), 3D Studio Max (Autodesk VIZ 2007 Level I, Certificate No 2375130)