

# Curriculum Vitae

**Name:** Dr. Loizos Papaloizou

**Address:** **Office:** Room RTB37  
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**Personal:** **Birthday:** 11/11/1978

**Education:** **Undergraduate work:**  
BSc in Civil Engineering (5-year program) / Aristotle  
University of Thessaloniki, Greece, June 2003.

**Graduate work:**

1. MSc in *Earthquake Resistant Design of Structures* /  
Aristotle University of Thessaloniki, Greece,  
November 2004
2. PhD in Civil Engineering / University of Cyprus,  
June, 2009

**Postgraduate work:**

Full-time postdoctoral research fellow at the University  
of Cyprus 05/2011 - 11/ 2014

### **Positions Held:**

- 10/2017 – now: University of Nicosia. Civil and environmental engineering program.
- 11/2014 – 06/2017: Part-time teaching faculty – University of Nicosia
- 03/2015 – 10/2017: Structural Engineer, J+A Philippou, Architects – Engineers
- 05/2011 – 11/2014: Postdoctoral Researcher (Full time) – University of Cyprus
- 01/2012 – 06/2012: Part-time teaching faculty – Cyprus University of Technology
- 01/2011 – 06/2011: Visiting Lecturer – Cyprus University of Technology
- 01/2010 – 12/2010: Part-time teaching faculty – Cyprus University of Technology
- 01/2008 – 06/2009: Teaching Assistant (Part-time) – University of Cyprus
- 12/2005 – 12/2007: Post-graduate researcher (Full time) – University of Cyprus
- 12/2004 – 12/2005: Structural Engineer, J+A Philippou, Architects – Engineers

### **Areas of Concentration/ Research Interests:**

- Computational Methods in Structural Dynamics
- Numerical methods in Engineering
- Computer-aided Structural Engineering
- Discrete Element Method
- Structural Analysis of Ancient Monuments
- Structural impact problems and impact modeling
- Modern programming methods in Engineering
- Earthquake Engineering
- Computational dynamics
- Finite Element Analysis

## **Research & Publications**

### **Chapters in Books (3):**

- [1] P. G. Asteris, V. Sarhosis, A. Mohebkah, V. Plevris, **L. Papaloizou**, P. Komodromos, J.V. Lemos (2016), Chapter 2: Numerical Modeling of Historic Masonry Structures (pages 27-68). *Civil and Environmental Engineering: Concepts, Methodologies, Tools, and Applications 1st Edition* ISBN: 978-1466696198, Information Resources Management Association (Editor)
- [2] P. G. Asteris, V. Sarhosis, A. Mohebkah, V. Plevris, **L. Papaloizou**, P. Komodromos, J.V. Lemos (2015), Chapter 7: Numerical Modeling of Historic Masonry Structures. *Handbook of Research on Seismic Assessment and Rehabilitation of Historic Structures*, Panagiotis G. Asteris) and Vagelis Plevris (Editors)

- [3] **L. Papaloizou** and P. Komodromos, (2010), Seismic Behaviour of Ancient Multidrum Structures, Papadrakakis *et al. (ed)*, *Computational methods in earthquake engineering*. Publisher:Spring, Series: *Computational Methods in Applied Sciences*, Vol. 21, 12/2010 ISBN: 978-94-007-0052-9

**Journal Articles (9):**

- [1] **L Papaloizou**, P Komodromos, P Polycarpou, G D. Hatzigeorgiou and D E. Beskos (2016), Two-dimensional numerical investigation of the effects of multiple sequential earthquake excitations on ancient multidrum columns. *Earthquakes and Structures*, Vol. 10, No. 3 (2016) 495-521.
- [2] E. Mavronicola, P. Polycarpou, **L. Papaloizou** and P. Komodromos (2015), “Computer-aided investigation of special issues of the response of seismically isolated buildings”, *International Journal of Computational Methods and Experimental Measurements*, Vol. 3, No. 1, pp. 21–32.
- [3] P. C. Polycarpou, L. Papaloizou, P. Komodromos and Dimos C. Charmpis (2015) “Effect of the seismic excitation angle on the dynamic response of adjacent buildings during pounding”, *Earthquakes and Structures*, Vol. 8, No. 5, pp. 1127-1146.
- [4] P. Polycarpou, **L. Papaloizou** and P. Komodromos (2014), An efficient methodology for simulating earthquake-induced 3D pounding of buildings", *Earthquake Engineering and Structural Dynamics*, Vol. 43, pp. 985-1003. DOI: 10.1002/eqe.2383.
- [5] Polycarpou A. C., Dimitriou A., Bletsas A., Polycarpou P. C., **Papaloizou L.**, Gregoriou G. and Sahalos J. N, (2012) “On the Design, Installation, and Evaluation of a Radio-Frequency Identification System for Healthcare Applications”, *IEEE Antennas and Propagation Magazine*, Volume 54, Issue 4, 2012, Article number6309198, Pages 255-271.
- [6] **L. Papaloizou** and P. Komodromos, (2011), Investigating the seismic response of ancient multi-drum colonnades with two rows of columns using an object-oriented designed software, *Journal of Advances in Engineering Software*, Volume 44, Issue 1, February 2012, Pages 136-149.
- [7] **L. Papaloizou** and P. Komodromos, (2009), Planar investigation of the seismic response of ancient columns and colonnades with epistyles using a custom-

made software, *Journal of Soil Dynamics and Earthquake Engineering*, Vol. 29 (11-12), pp. 1437-1454.

- [8] P. Komodromos, **L. Papaloizou** and P. Polycarpou, (2007), Simulation of the Response of Ancient Columns under Harmonic and Earthquake Excitations, *Journal of Engineering Structures*, Volume 30, Issue 8, pp. 2154-2164.
- [9] P. Komodromos, P. Polycarpou, **L. Papaloizou** and M.C. Phocas, (2007), Response of Seismically Isolated Buildings Considering Poundings, *Journal of Earthquake Engineering and Structural Dynamics*, Vol. 36, pp. 1605-1622.

#### **Conference Proceedings (25):**

- [1] P. Polycarpou, P. Komodromos, **L. Papaloizou**, D. Charmpis (2014), " Investigation of the effects of the angle of seismic incidence on the dynamic response of buildings during pounding ", Proceedings of the 12th International Conference on Computational Structures (CST2014), Naples, Italy 2-5 September 2014.
- [2] **L. Papaloizou**, P. Komodromos, P. Polycarpou (2014), "The effect of friction type seismic isolation on ancient multi-drum columns", Proceedings of the 12th International Conference on Computational Structures (CST2014), Naples, Italy 2-5 September 2014.
- [3] P. Polycarpou, P. Komodromos, **L. Papaloizou**, D. Charmpis (2013), "Numerical investigation of the effects of earthquake-induced pounding of seismically isolated buildings in 3D", Proceedings of the 14th International Conference on Civil, Structural and Environmental Engineering Computing (CC2013), 3-6 September, Cagliari, Sardinia, Italy.
- [4] **L. Papaloizou** and P. Komodromos (2013), The effect of multiple earthquake excitations in sequence on ancient multi-drum structures, Proceedings of COMPDYN 2013 - 4th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Kos Island, Greece, 12–14 June 2013.

- [5] **L. Papaloizou** and P. Komodromos (2012), The effect of earthquakes' vertical components on ancient multi-drum structures, Proceedings of the 15th World Conference on Earthquake Engineering, Lisbon, Portugal.
- [6] **L. Papaloizou** and P. Komodromos (2011), The dynamic analysis of multi-drum ancient structures under earthquake excitations, 2nd INQUA-IGCP-567 International Workshop on Active Tectonics, Earthquake Geology, Archaeology and Engineering, Corinth, Greece.
- [7] **L. Papaloizou** and P. Komodromos (2010), The use of discrete element methods on the dynamic analysis of multi-drum ancient structures, The Fifth International Conference on Discrete Element Methods, London, United Kingdom.
- [8] A.C. Polycarpou, G. Gregoriou, P. Polycarpou, **L. Papaloizou**, A. Bletsas, A. Dimitriou and I.N. Sahalos (2010) "A UHF Radio Frequency Identification (RFID) System for Healthcare: Design and Implementation", International ICST Conference on Wireless Mobile Communication and Healthcare - MobiHealth 2010, 18-20 October, Ayia Napa, Cyprus.
- [9] A.C. Polycarpou, G. Gregoriou, A. Dimitriou, A. Bletsas, I.N. Sahalos, **L. Papaloizou** and P. Polycarpou (2010), Design and Implementation of a Radio Frequency Identification (RFID) System for Healthcare Applications, *12<sup>th</sup> Mediterranean Conference on Medical and Biological Engineering and Computing*, Chalkidiki, Greece.
- [10] **L. Papaloizou** and P. Komodromos (2009), Investigating the seismic response of ancient multi-drum colonnades with two rows of columns using an object-oriented designed software, *First International Conference on Soft Computing Technology in Civil, Structural and Environmental Engineering*, Madeira, Portugal.
- [11] **L. Papaloizou** and P. Komodromos (2009), Parameters influencing the dynamic response of rigid block assemblies in numerical simulations, *Proceedings of the 2<sup>nd</sup> International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, Rhodes Island, Greece.
- [12] **L. Papaloizou**, P. Polycarpou, P. Komodromos (2008), Seismic response of ancient columns and colonnades, *Proceedings of the 3<sup>rd</sup> Pan-Hellenic*

*Conference of Earthquake Engineering and Technical Seismology*, Athens, Greece [in Greek].

- [13] E. Mavronicola, P. Polycarpou, **L. Papaloizou**, M.C. Phocas, P. Komodromos (2008), Investigation of the suitability of linearized models for the simulation of seismic isolation systems, *Proceedings of the 3<sup>rd</sup> Pan-Hellenic Conference of Earthquake Engineering and Technical Seismology*, Athens, Greece [in Greek].
- [14] P. Polycarpou, **L. Papaloizou**, E. Mavronicola, P. Komodromos (2008), Consequences of poundings of seismically isolated buildings, *Proceedings of the 3<sup>rd</sup> Pan-Hellenic Conference of Earthquake Engineering and Technical Seismology*, Athens, Greece [in Greek].
- [15] **L. Papaloizou**, P. Polycarpou, P. Komodromos (2008), Numerical analysis of ancient multi-drum columns with epistyles under dynamic loadings, *Proceedings of the 14<sup>th</sup> World Conference on Earthquake Engineering*, Beijing, China.
- [16] E. Mavronicola, P. Polycarpou, **L. Papaloizou**, M.C. Phocas, P. Komodromos (2008), On the linearization of the seismic behavior of seismic isolation systems, *Proceedings of the 14<sup>th</sup> World Conference on Earthquake Engineering*, Beijing, China.
- [17] P. Polycarpou, **L. Papaloizou**, E. Mavronicola, P. Komodromos (2008), Numerical simulation of seismically isolated buildings considering poundings with adjacent structures, *Proceedings of the 14<sup>th</sup> World Conference on Earthquake Engineering*, Beijing, China.
- [18] **L. Papaloizou**, P. Polycarpou and P. Komodromos (2008), Effect of harmonic excitation frequency on the dynamic response of ancient multi-drum columns with epistyles, *Proceedings of the 10<sup>th</sup> Panamerican Congress of Applied Mechanics*, Cancun, Mexico.
- [19] P. Polycarpou, **L. Papaloizou**, E. Mavronicola, P. Komodromos, M.C. Phocas (2008), Earthquake induced poundings of seismically isolated buildings: The effect of the vertical location of impacts, *Proceedings of the 10<sup>th</sup> Panamerican Congress of Applied Mechanics*, Cancun, Mexico.
- [20] P. Komodromos, **L. Papaloizou**, P. Polycarpou and E. Mavronicola (2007), Modern Object-Oriented Design of Structural Engineering Software,

*Proceedings of the 11<sup>th</sup> International Conference on Civil, Structural and Environmental Engineering Computing*, St. Julians, Malta.

- [21] **L. Papaloizou**, P. Polycarpou and P. Komodromos (2007), Ancient columns and colonnades under harmonic and earthquake excitations, *Proceedings of the 1<sup>st</sup> International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, Crete, Greece.
- [22] **L. Papaloizou**, P. Polycarpou and P. Komodromos (2007), Investigation of the response of ancient columns and colonnades under earthquake excitations, *Proceedings of the 8<sup>th</sup> Hellenic Society for Theoretical and Applied Mechanics International Congress on Mechanics*, Patra, Greece.
- [23] P. Polycarpou, **L. Papaloizou** and P. Komodromos and M. C. Phocas (2007), Modeling of Structural Impact of Seismically Isolated Buildings, *Proceedings of the 6<sup>th</sup> International Conference on Earthquake Resistant Engineering Structures*, Bologna, Italy.
- [24] P. Polycarpou, **L. Papaloizou** and P. Komodromos and M. C. Phocas (2007), Effects of earthquake induced poundings on the response of seismically isolated buildings, *Proceedings of the 1<sup>st</sup> International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, Crete, Greece.
- [25] E. Mitsopoulou, **L. Papaloizou** (2006), Evaluation of the response of a stone-masonry building using inelastic analysis procedure, *Proceedings of the 2<sup>nd</sup> International Conference on Nonsmooth/Nonconvex Mechanics with Applications in Engineering*, Thessaloniki, Greece.

#### **Bulletins or Reports (2):**

- [1] **L. Papaloizou**, P. Polycarpou, and P. Komodromos (2007) "Response of ancient multi-drum columns under earthquake excitations", *Workshop of the Network of Interstate Collaboration Between Greece and Cyprus addressing the Earthquake Consequences on the Built Environment*, Thessaloniki, Greece, [In Greek].
- [2] P. Polycarpou, **L. Papaloizou** and P. Komodromos (2007) "Seismic isolation of buildings - Investigation of the consequences of potential poundings during strong earthquakes", *Workshop organized by the Network of Interstate Collaboration Between Greece and Cyprus addressing the Earthquake Consequences on the Built Environment*, Thessaloniki, Greece, [In Greek].

**Extended abstracts in refereed conference proceeding (3):**

- [1] **L. Papaloizou**, P. Polycarpou and P. Komodromos (2006), Seismic response and behavior of ancient columns”, *Proceedings of the 1<sup>st</sup> European Conference on Earthquake Engineering and Seismology*, Geneva, Switzerland.
- [2] P. **Polycarpou**, **L. Papaloizou** and P. Komodromos (2006), Consequences of Earthquake-Induced Poundings of Seismically Isolated Buildings, *Proceedings of the 1<sup>st</sup> European Conference on Earthquake Engineering and Seismology*, Geneva, Switzerland.
- [3] P. Komodromos, **L. Papaloizou**, P. Polycarpou and M. C. Phocas (2006), Utilization of Object-oriented technologies and design patterns in the development of software for structural dynamics, *Proceedings of the 1<sup>st</sup> European Conference on Earthquake Engineering and Seismology*, Geneva, Switzerland.



**Doctoral Dissertation:**

*“Investigation of the response and behaviour of ancient columns and colonnades under seismic excitations using the discrete element method”.*

***Abstract:***

Strong earthquakes are common causes of destruction of ancient monuments, such as classical columns and colonnades. Ancient columns of great archaeological significance can be found in high seismicity areas in the Eastern Mediterranean. Understanding of the behaviour and response of these historic structures during strong earthquakes is useful for the assessment of conservation and rehabilitation proposals for such structures. The seismic behaviour of ancient columns and colonnades involves complicated rocking and sliding phenomena that very rarely appear in modern structures. Analytical study of such multi-block structures under strong earthquake excitations is extremely complicated if not impossible. Computational methods can be used to simulate the dynamic behaviour and seismic response of these structures.

The discrete element method (DEM) is utilized to investigate the response of ancient multi-drum columns and colonnades during harmonic and earthquake excitations by simulating the individual rock blocks as distinct rigid bodies. A specialized software application has been designed and developed, using modern object-oriented technologies and computer graphics to perform efficient seismic simulations of multi-block structures. The developed software is thoroughly validated by comparing the computed responses of various fundamental problems, such as sliding, rocking and free vibration dynamics of rigid bodies, with corresponding analytical solutions as well as results obtained from experiments that are available in the literature.

A large number of parametric simulations of multi-drum columns and colonnades, as well as colonnade systems with two rows of columns, one on top of the other, have been conducted in order to investigate and understand the influence of different characteristics of earthquake excitations as well as various mechanical and geometrical characteristics of these structures on their seismic response. Parametric studies have been performed by varying the excitation frequency and acceleration, as well as the frictional coefficient and the geometric characteristics of the simulated columns and colonnades in order to assess the influence of these parameters in their seismic response and behaviour.

### **Proposals for Funding Written:**

1. Investigation of the response of masonry arch bridges under seismic excitations using the discrete element method. Cyprus Research Promotion Foundation. 2008.
2. Seismic behavior of multidrum columns & colonnades – Assessment of seismic isolation as an antiseismic upgrading measure. Cyprus Research Promotion Foundation. 2008.
3. Investigation of the Effectiveness of Geothermal Ground Source Heat Pumps in Cyprus as a Renewable Energy Source. Cyprus Research Promotion Foundation. 2009.
4. Investigation for the production of ancient multi-drum columns and colonnades from strong earthquakes. Cyprus Research Promotion Foundation. 2009.ACCEPTED

### **Funding Obtained:**

*Investigation for the protection of ancient multi-drum columns and colonnades from strong earthquakes”, co-funded by the Republic of Cyprus through the Cyprus Research Promotion Foundation and the European Regional Development Fund*

Project Protocol Number: ANΘΠΩ/0609(BE)/23

Approved Funding: 99,940 EUR

Period of funding: 36 Months

Primary investigator: **Loizos Papaloizou**

Project Coordinator: Petros Komodromos

## Experience in Teaching

Undergraduate course taught at the University of Nicosia:

<u>Code</u>	<u>Course</u>	<u>Hours/week</u>	<u>Semester(s)</u>
CEE-280	Engineering Surveying	4	Spring2017 Spring 2016 Spring 2015
CEE-490	Special Topics in Environmental Engineering	3	Fall 2016 Fall 2017
CVVE-112	Technical Drawing and CAD	3	Summer 2016 Spring 2016 Spring 2015
CVVE-211	Probability and Statistics for Engineers	3	Fall 2017 Fall 2015 Fall 2014
CEE-455	Bridge Analysis and Design	3	Fall 2017

Undergraduate course taught at the Cyprus University of Technology:

<u>Code</u>	<u>Course</u>	<u>Hours/week</u>	<u>Semester(s)</u>
POM421	Prestressed Concrete	4	Fall 2010
POM323	Foundation Engineering	4	Fall 2010
POM325	Reinforced concrete design II	4	Spring 2010
POM444	Analysis of bridges and tunnels	4	Spring 2011 Spring 2012

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### Invited Lectures / Seminars given for The Cyprus Scientific and Technical Chamber (E TEK)

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Design of concrete structures - 14 hour Seminar	08/2012
EN1992(EC2):Eurocede 2 - 14 hour Seminar	12/2012
EN1992(EC2):Eurocede 2 - 14 hour Seminar	06/2013
Design of concrete structures - 14 hour Seminar	03/2014

**Thesis supervised/reviewed:**

Oct 2017: Supervisor of the BSc Thesis of Nikolarakis Emmanouil, “Energy efficiency and zero energy buildings. Energy calculations of a 2-storey residential building in Cyprus”, Civil and Environmental Engineering, University of Nicosia