

Curriculum Vitae

Petros P. Marathias

Ph.D. Civil Engineer

Tenured Lecturer of Structural Engineering

Division of Structural Engineering – Department of Civil Engineering

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PERSONAL INFORMATION

- Born in Athens, Greece, on 27 March 1959
- Citizen of Greece
- Married with two children

EDUCATION

- High school, Amaliada 1976
- Diploma in Civil Engineering, Department of Civil Engineering, University of Patras, Greece, 1981
- Ph.D. in Structural Engineering, Department of Civil Engineering, University of Patras, Greece, 1993

ACADEMIC POSITIONS

- Scientific Associate, Department of Civil Engineering, University of Patras, Greece, (1981-1993)
- Tenured Lecturer in the Department of Civil Engineering , University of Patras, 1993 - present.

AREAS OF SPECIALIZATION

Earthquake resistant design of special technical projects. Design of reinforced concrete and steel bridges. Earth retaining systems, deep excavations. Seismic protection of structures. Design of bearings. Prefabrication of reinforced concrete buildings. Prestressed concrete. Tensile structures by cable nets and membranes. Special steel docking systems for maintenance repair and inspections of aircrafts. Software development for the non-linear analysis and design of reinforced concrete and steel seismically isolated structures. Seismic protection of monumental structures. Retrofitting and rehabilitation of structures.

RESEARCH FIELDS

- Seismic Isolation Technology: Research collaborator, for over 35 years, of Prof. Dr. Eng. Aristarchos Ikonou, pioneer in the field of seismic isolation and inventor of Alexisison Earthquake Guarding System.
- Software Development: Developer of "Archimedes", a specialized, structural modeling, analysis and design software used over the years in the designing of complex earthquake resistant large scale structures.

COURSES TAUGHT

As teaching assistant of Prof. A. Ikonou (1981 to 1993) in the Department of Civil Engineering , University of Patras

- Structural Analysis I,
- Structural Analysis II,
- Structural Analysis III,
- Structural Analysis IV,
- Earthquake Engineering,
- Theory of Plates and Shells and Finite element method

As tenured Lecturer in the Department of Civil Engineering , University of Patras (1993-2002)

- Analysis of framed structures
- Matrix analysis of framed structures

(2002-2013)

- Advanced Structural Analysis I
- Advanced Structural Analysis II
- Theory of Plates and Shells

(2013-2014)

- Advanced Structural Analysis I
- Structural stability,
- Theory of Plates and Shells

(2014-2015)

- Special Topics in Structural Analysis
- Theory of Plates and Shells

(2015-present)

- Special Topics in Structural Analysis
- Theory of Plates and Shells
- Dynamics-Vibrations

FOREIGN LANGUAGES

- English

PROFESSIONAL EXPERIENCE

Consulting structural engineer in several design and construction companies for the design of special structures made of reinforced, prestressed and prefabricated concrete and steel.

Some of these structures are:

- Justice Palace of Athens, Court of Appeal, Athens, Greece
- Buildings of Chemical Engineering, Biology and Mathematics of University of Patras, Greece
- Konstantopouleion nursing home for the elderly, Greece
- Three concrete bridges in Kriaritsi of Chalkidiki, Greece
- 10-storey with 7 underground floors parking station in Ippokratous street, Athens, Greece
- 11-storey with 6 underground floors parking station in Alkiviadou street, Athens, Greece
- Commercial and office building with 3 underground floors in Amaroussion, Athens, Greece
- House Complex (26 residential buildings) in Fragopoulou street, Kato Kiffisia, Athens, Greece
- Cylindrical watertank in Vassilaki of Ilia
- Composite structures of reinforced concrete and stone for a country residence in Kranidi of Argolida, Greece
- Pedestrian steel bridge, Hellenic Petroleum S.A.
- Design and construction of steel docking system for the maintenance and repair of the aircraft A320, B737 Classic and B737 NG
- Composite warehouse of reinforced concrete and steel, Patras
- A number of precast prestressed concrete industrial buildings
- Preliminary study of the upgrade of the seismic isolation system of Piraeus Tower building.
- Strength capacity assessment for the installation of special heavy equipment at the Athens Tower building.

DOCTORAL DISSERTATION

Title of Thesis: “Seismic response of structures with many frictional interfaces founded on rigid or flexible base.”

Advisor: Aristarchos S. Ikononou

BOOKS

- Marathias Petros (2002), "Structural analysis of framed structures", Class Lecture Notes, Patras

PRESENTATIONS – PUBLICATIONS IN CONFERENCE PROCEEDINGS

- “Principles for evaluating seismic safety of existing reinforced concrete buildings, general comments on screening methods.”, A.S. Ikonou, P.P. Marathias and I.I. Yiaslas. The Ninth International Congress of the F.I.P., June 1982, Stockholm.
- “Ductility demand of one-story eccentric structures subjected to seismic motions”, I.I. Yiaslas, P.P. Marathias and A.S. Ikonou. The 1988 ASME Pressure Vessels and Piping Conference, Pittsburgh, Pennsylvania, June 1988.
- “Seismic response of flexible structures with many frictional interfaces”, P.P. Marathias, I.I. Yiaslas and A.S. Ikonou. The 11th International Conference on Structural Mechanics in Reactor Technology, August 1991, Tokyo, Japan.
- “Influence of foundation flexibility on the earthquake response of structures with many frictional interfaces.”, P.P. Marathias. The 10th European Conference on Earthquake Engineering, 28 August-2 September 1994, Vienna, Austria.
- “Seismic response of sliding flexible structures based on elastic foundations”, P.P. Marathias. Fourth International Conference on Structural studies of Historical Buildings, STREMA 95, May 1995, Crete, Greece.
- “Spread of plasticity analysis of R/C buildings, subjected to monotonic ‘seismic’ loading.”, P.P. Marathias, E. Visvikis, P. Mousouleas and V. Yannopoulos. The 13th World Conference on Earthquake Engineering, Vancouver, B.C. Canada, August 1-6, 2004, paper N. 2229.
- "Influence of rocking on the seismic response of high rise buildings resting on sliding bearings" A. Zervas, N. Skretas, A. Ikonou, P. Marathias, 16th European Conference on Earthquake Engineering, Thessaloniki, June 18-21, 2018.
- “The rationale behind a form: an integrated approach to morphogenesis of structures” A. Ikonou, F. Bednarek, G. P. Lazaridis, P. Marathias, IASS 2018 Boston Symposium: Structural innovation through interdisciplinary collaboration, Boston July 16-20, 2018.

JOURNAL PUBLICATIONS

- “Lack of design specifications, idealization and analysis in the national amendments of Greek Seismic Code. Comparison with modern seismic codes.”, P.P. Marathias, Bulletin of Greek Society of Civil Engineers, issue 172/1985, pg. 18-21.
- “National amendments of Greek Seismic Code”, A.S. Ikonou, P.P. Marathias, I.I. Yiaslas, Bulletin of Greek Society of Civil Engineers, issue 173/85, pg. 21-37.

PROFESSIONAL AND SCIENTIFIC MEMBERSHIP

- Technical Chamber of Greece 1981.
- Greek Society of Civil Engineers since 1981.
- Member of Technical Committee ELOT/EOE 9 (Eurocodes) of the Hellenic Prototyping Organization (ELOT).
- Member of working group of ELOT concerning the European Technical Committee CEN/TC 340 “ANTISEISMIC DEVICES”.

SEMINARS

- Speaker at a three-day scientific seminar of Greek Society of Civil Engineers issued: “Seismic Code – Application – Review”, May 1985, Patras

SUPERVISED MASTER THESES

- “Design of foundations rested on deformable foundation soil according to the criterion of equal settlement”, H. Akkari, 2002, Patras, Greece
- “Nonlinear calculation of stress distribution under eccentric stiff footings of arbitrary shape”, E. Visvikis, 2004, Patras, Greece
- “Ductility of reinforced concrete buildings”, A. Georgiou, 2005, Patras, Greece
- “Mesh generation of the 2D and 3D idealization of structures for the analysis according the finite element method”, F. Drakopoulos, 2007, Patras, Greece
- “Static analysis of structures rested on soil with foundation plates by the use of hybrid finite elements”, G. Souflis, 2007, Patras, Greece
- “Analysis of thin plates by the use of hybrid finite elements”, P. Paplas, 2008, Patras, Greece
- “Finding of equilibrium shape of tensile structures from cable nets and membranes”, Z. Tatani, 2014, Patras, Greece

- “Time history analysis of structures resting on flat sliding bearings”, A. Zervas, 2017, Patras, Greece
- “Non-linear dynamic analysis of seismically isolated structures”, N. Skretas, 2018, Patras, Greece
- “Substructuring techniques for the static and dynamic analysis of complex structures”, K. Prattou, 2019, Patras, Greece