ΒΙΟΓΡΑΦΙΚΟ ΣΗΜΕΙΩΜΑ

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Οικογενειακή Κατάσταση: Έγγαμος με δύο παιδιά

Σπουδές: 1981-Διπλωματούχος Μηχανολόγος Μηχανικός Πανεπιστημίου Πατρών, 1987- Διδάκτωρ του Τμήματος Μηχανολόγων Μηχανικών Πανεπιστημίου Πατρών.

Ακαδημαϊκές θέσεις: 1982-1988: Επιστημονικός Συνεργάτης του Τμήματος Μηχανολόγων Μηχανικών Μηχανολόγων Πανεπιστημίου Πατρών. 1988-1993: Λέκτορας του Τμήματος Μηχανολόγων Μηχανικών Πανεπιστημίου Πατρών. 1993-1998: Επίκουρος Καθηγητής του Τμήματος Μηχανολόγων Μηχανικών Μηχανολόγων Πανεπιστημίου Πατρών. 1998-2004: Αναπληρωτής Καθηγητής του Τμήματος Μηχανολόγων Μηχανικών Μηχανολόγων Πανεπιστημίου Πατρών. 2004-σήμερα : Καθηγητής του Τμήματος Μηχανολόγων Μηχανικών Μηχανολόγων Πανεπιστημίου Πατρών.

Ερευνητικές Δραστηριότητες
Α. Υπολογιστική Μηχανική: Αριθμητική ανάλυση με τη μέθοδο των συνοριακών στοιχείων και τη μέθοδο συνοριακών στοιχείων διπλής αμοιβαιότητας. Αριθμητική ανάλυση με τη μέθοδο των τοπικών ολοκληρωτικών εξισώσεων χωρίς διακριτοποίηση. Υβριδικές μέθοδοι.

Β. Εφαρμοσμένη Μηχανική: Αναλυτική και αριθμητική επίλυση ευθέων και αντιστρόφων προβλημάτων σκέδασης και διάδοσης ακουστικών, ηλεκτρομαγνητικών, ελαστικών, θερμοελαστικών και βαθμοελαστικών κυμάτων. Μελέτη φαινομένων κυματικής διάδοσης σε σύνθετα, μη-ομογενή υλικά και βιοϋλικά. Τεχνικές ομογενοποίησης, τεχνικές μη καταστροφικού ελέγχου (ακουστική εκπομπή, υπέρηχοι, ακουστο-υπέρηχοι). Μηχανικές ταλαντώσεις, απομόνωση ταλαντώσεων. Θεωρίες ελαστικότητας ανώτερων βαθμίδων.

Κριτής σε διεθνή επιστημονικά περιοδικά

- International Journal of Solids and Structures,
- Journal of the Acoustical Society of America
- Archive of Applied Mechanics
- European Journal of Mechanics - A/Solids
- ASME Journal of Applied Mechanics
- Acta Mechanica
- Engineering Fracture Mechanics
- CMES: Computer Modeling in Engineering & Sciences,
- CMC: Computers Materials & Continua, Computers & Structures.
- International Journal for Numerical Methods in Engineering
- Computational Mechanics
- Computer Methods in Applied Mechanics and Engineering
- Computers & Structures
- Engineering Analysis with Boundary Elements
- Soil Dynamics and Earthquake Engineering
- Quarterly of Applied Mathematics
- SIAM-Applied Mathematics
- Advanced Composite Letters
- Journal of Dynamics Systems
- Measurements and Control
- Journal of Biomedical Optics
- Applied Optics
- The Acoustical Society of America
- Journal of Sound and Vibration
- Ultrasonics
- International Journal of Aerospace Engineering

Μέλος Επιστημονικών & Οργανωτικών Επιτροπών Συνεδρίων:

- COMP'88: Phase Interaction in Composite Materials, Patras, Greece, August 1988
- COMP'90: Advanced Composites in Engineering Technologies, Patras, August 1990
- COMP'95:High Technology Composites in Modern Applications, Corfu, September 1995
- 1st National Conference of Composites, Xanthi, Greece, July 1997
- 2nd International Conference on Non Destructive Inspection and Testing, Athens, 1999
- 4th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Engineering, Perdika, Greece, September 1999.
- 5th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Technology, Corfu, October 2001
- 6th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Engineering, Tsepelovo, Greece, September 2003.

- 7th International Workshop on Mathematical Methods on Scattering Theory and Biomedical Engineering, 16-18 September 2005, Nymfaio, Greece.
- 8th International Workshop on Mathematical Methods on Scattering Theory and Biomedical Engineering, 27-29 September 2007, Lefkada, Greece.
- Emerging Technologies in Non Destructive Testing, Thessaloniki, 2003
- ICCES'03: International Conference on Computational & Experimental Engineering & Sciences, Corfu, Greece, July 2003 (Co-organizer).
- ICCES'04: International Conference on Computational & Experimental Engineering & Sciences, Madeira, Portugal, July 2004.
- ICCES'08: International Conference on Computational & Experimental Engineering & Sciences, Honolulu, Hawaii, USA, March 2008.
- ICCES'09: International Conference on Computational & Experimental Engineering & Sciences, Phuket, Thailand, April 2009.
- ICCES'12: International Conference on Computational & Experimental Engineering & Sciences, Crete, Greece, May 2012.
- ICCES'13: International Conference on Computational & Experimental Engineering & Sciences, Seattle, USA May 24 - 28, 2013.
- ICCES'14: International Conference on Computational & Experimental Engineering & Sciences, Changwon, Korea, June 12 - 17, 2014.
- ICCES-MM'05: International Conference on Meshless Methods, Stara Lesna, Slovakia, June 2004.
- ICCES-MM'06: International Conference on Meshless Methods, Dubrovnik, Kroatia, June 2005.
- ICCES-MM'07: International Conference on Meshless Methods, Patras, Greece, June 2007 (Organizer).
- ICCES-MM'07: International Conference on Meshless Methods, Patras, Greece, June 2007 (Organizer).
- ICCES-MM'08: International Conference on Meshless Methods, Suzhou, China, October 2008.
- ICCES-MM'09: International Conference on Meshless Methods, Bistra Castle, Ljubljana, Slovenia, August 2009.
- 9th International Workshop on Mathematical Methods on Scattering Theory and Biomedical Engineering, 9-11 October 2009, Patras, Greece.
- ICCES-MM'10: International Conference on Meshless Methods, Busan, Korea, August 2010.
- ICCES-MM'11: International Conference on Meshless Methods, Zonguldak, Turkey, September 2011.

Τιμητικές Διακρίσεις-Βραβεία

- Regional Editor του Διεθνούς περιοδικού CMES: Computer Modeling in Engineering & Sciences.
- Βραβείο "Π.Σ. Θεοχάρη" 2007 της Ακαδημίας Αθηνών για την εργασία "Numerical determination of crack stresses and deformation fields in gradient elastic solids" με συνσυγγραφείς τους Γ. Καρλή, Σ. Τσινόπουλο και Δ. Μπέσκο.
- Βραβείο "S.N. Atluri" στο Συνέδριο ICCES08 στη Hawaii των Ηνωμένων Πολιτειών.

Επίβλεψη Διδακτορικών διατριβών που έχουν ολοκληρωθεί (Επιβλέπων Καθηγητής)

- **Σπήλιος Καττής**, «Αριθμητική Επίλυση Προβλημάτων Απομόνωσης Κατασκευών από Επιφανειακά Ελαστικά Κύματα», Τμήμα Μηχανολόγων Μηχανικών & Αεροναυπηγών Πανεπιστημίου Πατρών, 1997.
- **Στέφανος Τσινόπουλος**, «Μέθοδος Συνοριακών Στοιχείων σε Προβλήματα Σκέδασης Ηλεκτρομαγνητικής Ακτινοβολίας», Τμήμα Μηχανολόγων Μηχανικών & Αεροναυπηγών Πανεπιστημίου Πατρών, 1999
- **Ιωάννης Αγναντιάρης**, «Επίλυση Προβλημάτων Αλληλεπίδρασης Ακουστικού-Ελαστικού μέσου με την Μέθοδο των Συνοριακών Στοιχείων», Τμήμα Μηχανολόγων Μηχανικών & Αεροναυπηγών Πανεπιστημίου Πατρών, 2000.
- **Ιωάννης Βέρμπης**, «Επίλυση Προβλημάτων Κυματικής Διάδοσης σε Σύνθετα Υλικά με την Μέθοδο των Συνοριακών Στοιχείων», Τμήμα Μηχανολόγων Μηχανικών & Αεροναυπηγών Πανεπιστημίου Πατρών, 2000.
- **Αικατερίνη Τσέπουρα**, «Αριθμητική Επίλυση Προβλημάτων Βαθμοελαστικότητας», Τμήμα Μηχανολόγων Μηχανικών & Αεροναυπηγών Πανεπιστημίου Πατρών, 2003.
- **Ευριπίδης Σελλούντος**, «Μέθοδος Τοπικών Ολοκληρωτικών Εξισώσεων χωρίς Διακριτοποίηση», Τμήμα Μηχανολόγων Μηχανικών & Αεροναυπηγών Πανεπιστημίου Πατρών, 2004.
- **Βασίλης Βαβουράκης**, «Χρήση Μεθόδων Συνοριακών Στοιχείων και Τοπικών Ολοκληρωτικών Εξισώσεων χωρίς Διακριτοποίηση για την Αριθμητική Επίλυση Προβλημάτων Κυματικής Διάδοσης σε Εφαρμογές Μη Καταστροφικού Ελέγχου» Τμήμα Μηχανολόγων Μηχανικών & Αεροναυπηγών Πανεπιστημίου Πατρών, 2006.
- **Γεράσιμος Καρλής**, «BEM Solutions for Linear Elastic and Fracture Mechanics Problems with Microstructural Effects», Τμήμα Μηχανολόγων Μηχανικών & Αεροναυπηγών Πανεπιστημίου Πατρών, 2009.
- **Αλέξης Παπαχαραλαμπόπουλος**, "A numerical study on the Wave propagation in materials with Microstructural effects: application in bones", Τμήμα Μηχανολόγων Μηχανικών & Αεροναυπηγών Πανεπιστημίου Πατρών, 2011.

- **Θεόδωρος Γκορτσάς, "**Αριθμητική επίλυση δυναμικών θερμοελαστικών προβλημάτων θραυστομηχανικής", σε εξέλιξη.
- **Κωνσταντίνος Γρίβας,** "Αριθμητική επίλυση προβλημάτων εμβιομηχανικής μεγάλης κλίμακας με μεθόδους μη διακριτοποίησης" ", σε εξέλιξη.
- **Ιωάννης Διακίδης,** "Αριθμητική επίλυση προβλημάτων μεγάλης κλίμακας με την Μέθοδο των Συνοριακών Στοιχείων" ", σε εξέλιξη.

Διδακτορική Διατριβή

D. Polyzos, "Elastic Wave Scattering in Composite Materials and Evaluation of their Dynamic Properties", Doctoral Thesis, University of Patras, March 1988.

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J1. G. Dassios, K. Kiriaki, D. Polyzos, "On the Scattering Amplitudes for Elastic Waves" (ZAMP), Journal of Applied Mathematics and Physics, Vol. 38, pp. 856-873, 1987.

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J5. T. Apostolopoulos, K. Kiriaki, D. Polyzos, "The Inverse scattering problem for a rigid ellipsoid in linear elasticity", Inverse problems, Vol.6, pp. 1-9, 1990.

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Propagation in Two-Dimensional Models of Healing Bone", Ultrasonics, Vol. 48 (6), pp.598-606, 2008.

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Ανάπτυξη Λογισμικού

Ανάπτυξη λογισμικού Μεθόδου Συνοριακών Στοιχείων ISoBEM (Integrated Software of Boundary Element Method) το οποίο επιλύει: Potential problems, Acoustics (sound propagation and radiation, scattering), Thermal problems, Electromagnetic problems (electric and magnetic field calculation, scattering by dielectric bodies and perfect conductors), Classical Elasticity (compressible and incompressible analysis, wave propagation and scattering, mechanical vibrations, fracture mechanics), Fluid-structure interaction, Strain gradient elasticity (microstructural effects), Computational fluid dynamics. ISoBEM performs 2D, Axisymmetric, 2.5D and 3D

analyses under static, harmonic and time domain conditions. The overall user experience is improved with an advanced and extremely powerful Graphical User Interface for pre and post processing. Parametric modeling is also possible through a python shell available in ISoBEM that supports a wide variety of scripting commands (www.bemsands.com).

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