

CURRICULUM VITAE

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EDUCATION

- Dec 2011 – Now** PhD Candidate at Mechanical and Aeronautics Department, University of Patras.
Thesis topic: “*Solution of large scale elastic problems with the Boundary Element method*”.
Supervisor: prof. D. Polyzos
- Sept 2004 – Dec 2011** Diploma in Mechanical and Aeronautics Department, University Patras: grade 7 and 35/100.
- Jun 2004** High school graduation, “7th senior high school”, Kallithea, Greece: grade 18 and 2/10.

WORK EXPERIENCE

- July-August 2007** Internship at INFOCAD SA company in the construction of plastic molds.

SCHOLARSHIPS

- Program IKYDA-DAAD 2013: Program that funds exchanges offered to academics and research teams working in Universities or Research Institutions in order to carry out a scientific project by visits to the partners in Germany.

JOURNAL PUBLICATIONS

- **T. Gortsas**, S.V. Tsinopoulos, D. Polyzos, “An Advanced ACA/BEM for Solving 2D Large-Scale Elastic Problems with Multi-Connected Domains”, CMES: Computer Modeling in Engineering & Sciences, Vol. 107, No. 4, pp. 321-343, 2015.
- **T. Gortsas**, S.V. Tsinopoulos, D. Polyzos, “RVE for unidirectional fiber-composite plates in bending”, submitted for publication.
- **T. Gortsas**, S.V. Tsinopoulos, D. Polyzos, “Size effects in unidirectional fiber-composites: an ACA/BEM simulation”, submitted for publication.
- Vassiliki T. Potsika, Konstantinos N. Grivas, **Theodoros Gortsas**, Gianluca Iori, Vasilios C. Protopappas, Kay Raum, Demosthenes Polyzos and Dimitrios I. Fotiadis, “Computational study of the effect of cortical porosity on ultrasound wave propagation in healthy and osteoporotic long bones”, Materials, 2016 (*under review*).

CONFERENCE PUBLICATIONS

- **T. Gortsas**, S.V. Tsinopoulos, D. Polyzos, “Size effects in unidirectional fiber-composite plates in bending”, 11th HSTAM International Congress on Mechanics, Athens, Greece, 27 – 30 May, 2016.
- Vassiliki T. Potsika, Konstantinos N. Grivas, **Theodoros Gortsas**, Vasilios C. Protopappas, Kay Raum, Demosthenes Polyzos and Dimitrios I. Fotiadis, “Finite-Difference Time-Domain modeling of ultrasound wave propagation in intact and osteoporotic long bones”, 11th HSTAM International Congress on Mechanics, Athens, Greece, 27 – 30 May, 2016.
- Vassiliki Potsika, Vasilios Protopappas, Dimitrios Fotiadis, **Theodoros Gortsas**, Konstantinos Grivas, Demosthenes Polyzos, Kay Raum, “In-silico evaluation of cortical porosity by tangential axial transmission”, 6th European Symposium on Ultrasonic Characterization of Bone, 2015.
- Vassiliki Potsika, Konstantinos Grivas, **Theodoros Gortsas**, Vasilios C. Protopappas, Demosthenes Polyzos, Kay Raum, Dimitrios I. Fotiadis, “Ultrasound propagation in cortical bone: axial transmission and backscattering simulations”, 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2015.
- **Theodoros Gortsas**, Konstantinos Grivas, Demosthenes Polyzos, Vassiliki Potsika, Vasilios Protopappas, Dimitrios Fotiadis, Kay Raum, “The effect of cortical bone porosity on ultrasonic backscattering parameters”, 6th European Symposium on Ultrasonic Characterization of Bone, 2015.

- **T. Gortsas**, S.V. Tsinopoulos, D. Polyzos, “Simulation of plane strain fiber composite plates in bending, through a BEM/ACA/HM formulation”, 8th GRACM International Congress on Computational Mechanics, Volos, 12-15 July 2015.
- **T. Gortsas**, S.V. Tsinopoulos, D.Polyzos, “An advanced ACA/BEM for solving large-scale elastic problems”, International Conference on Computational & Experimental Engineering and Sciences, Rheno, July 20-24, 2015.
- **T. Gortsas**, I. Diakides, S.V. Tsinopoulos, Determination of Mode I Stress intensity factor for a crack propagating in a micro-cracked plate, International Conference on Computational & Experimental Engineering and Sciences, Rheno, July 20-24, 2015.
- **T. Gortsas**, S.V. Tsinopoulos, I. Diakides, D. Polyzos, “An ACA/BEM for solving wave propagation problems in non-homogeneous materials”, proceedings of the 6th Conference on Emerging Technologies in Non-Destructive Testing(ETNDT6), Brussels, 27-29 May, 2015.
- V. T. Potsika, **T. Gortsas**, K. N. Grivas, I. F. Spiridon, V. C. Protopappas, M. G. Vavva, K. Raum, D. K. Polyzos, D. I. Fotiadis, “Computational modeling of guided ultrasound wave propagation in healthy and osteoporotic bones’, ELEMBIO 2014.
- **T. Gortsas**, S.V. Tsinopoulos, E.J. Sellountos, D.Polyzos: “Numerical solution of 2d steady-state thermoelastic problems through a new and simple meshless Local Boundary Integral Equation (LBIE) method in combination with the Boundary Element Method (BEM)”, International Conference on Boundary Element and Meshless Techniques, 16-18 July 2013, Paris, France.

SCIENTIFIC PROJECTS

- Oct 2012 – Oct 2015** **ARCHIMEDES III**, “*Crack propagation predictions for real structures subjected to thermo-mechanical loading via the boundary element method (Crack-Pro-Therm-BEM)*”.

LANGUAGES

- English** □ Proficiency in English, Cambridge University (grade C).
- German** □ Zertifikat Deutsch (ZD) Goethe Institut.

COMPUTER SKILLS

Programming:

- C/C++
- Matlab
- Python
- Fortran 77/90

Design:

- Abaqus
- AutoCAD

SCIENTIFIC INTERESTS

- Computational Mechanics (Boundary Elements, Meshless Methods and Finite Elements applied in Elasticity, Acoustics, Fluid-Structure Interaction and Electromagnetics).
- Applied Mechanics (Continuum Mechanics, Wave Propagation, Mechanical Vibrations)
- Bioengineering, Biomedical Technology
- **Software Development**



ISOBEM (Integrated Software on Boundary Element Methods): A Boundary Element Method, object oriented code written in C++ for solving acoustic, elastic, gradient elastic and fluid structure interaction problems, in two and three dimensions as well as acoustic, electromagnetic and elastic wave scattering and radiation problems, by using hierarchical matrices, fast multipole methods, and other advanced computational techniques. More information about the ISOBEM software can be found in www.bemsands.com.

Developed and maintained in collaboration with: Prof. Demosthenes Polyzos, Prof. Dimitri Beskos, Assistant Prof. Stephanos Tsinopoulos, Dr. Euripides Sellountos and Dr. Gerasimos Karlis.

REFERENCES

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