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EDUCATION

- **Ph.D.** Department of Engineering Science and Mechanics,
Virginia Polytechnic Institute and State University (Virginia Tech),
Blacksburg, VA (December 1995).
Dissertation Title: *“Three-Dimensional Layerwise Modeling of Layered Media with Boundary Integral Equations”*,
Advisor: Prof. J. N. Reddy.
Coursework emphasis on Continuum Mechanics, Dynamics, Mechanics of Composite Materials, Energy (Variational) Methods, Finite Element Method.
Cumulative average 4.0/4.0.
- **M.Sc.** Department of Civil Engineering,
West Virginia University,
Morgantown, WV (May 1988).
Master Thesis: *“Hybrid BEM-FEM Dynamic Analysis of Flexible Strip-Foundations”*,
Advisor: Assoc. Prof. C. C. Spyrakos.
Coursework emphasis on Theoretical and Applied Mechanics, Computational Methods, Mechanics of Soils, Soil Structure Interaction.
Cumulative average 3.91/4.0.
- **Diploma** School of Civil Engineering, Department of Structural Engineering,
National Technical University of Athens, Athens, Greece (July 1985).
Diploma Thesis: *“Static and Dynamic Analysis of Composite Shear Walls by the Boundary Element Method”*,
Advisor: Prof. J. T. Katsikadelis.
Coursework emphasis on Structural Engineering (Steel and Concrete Structures), Structural Mechanics and Dynamics.
Cumulative average 7.9/10.0 (rank 8/195).

TEACHING EXPERIENCE

- ☐ May 2006 – present Assistant Professor (tenured position since April 2010),
Department of Civil & Infrastructure Engineering,
Technological Educational Institute of Athens.

Courses:

- *Applied Structural Analysis* (5 hours per week, 8 semesters)
- *Theory of Structures* (3 hours per week, 1 semester)
- *Soil Mechanics* (3 hours per week, 2 semesters)
- *Finite Element Method* (3 hours per week, 1 semester)
- *Mechanics - Statics* (7 hours per week, 6 semesters)
- *Strength of Materials* (4 hours per week, 1 semester)
- Computer Applications in Structural Analysis (3 hours per week, 6 semesters)
- *Computer Programming - Fortran* (4 hours per week, 2 semesters)
- *Structural Analysis I* (4 hours per week, 2 semesters)
- *Structural Analysis II* (6 hours per week, 2 semesters)

Theses: supervision of more than 20 undergraduate theses in the area of structural and infrastructure engineering.

- ☐ Sept. 2002 – June 2005 Adjunct Assistant Professor,
Department of Civil & Infrastructure Engineering,
Technological Educational Institute of Athens.

Courses:

- *Applied Structural Analysis* (5 hours per week, 7 semesters)
- *Theory of Structures* (3 hours per week, 2 semesters)
- *Soil Mechanics* (4 hours per week, 5 semesters)
- *Mechanics - Statics* (4 hours per week, 2 semesters)
- *Computer Programming - Fortran* (4 hours per week, 2 semesters)
- *Strength of Materials* (4 hours per week, 2 semesters)

- ☐ Sept. 2001 – present Adjunct Professor,
Engineer Officers' Technical School, Hellenic Army.

Courses:

- Structural Analysis II - Statically Indeterminate Structures (5 hours per week, 10 semesters)
- Structural Analysis III - Matrix Structural Analysis (5 hours per week, 9 semesters)
- Structural Analysis V - Introduction to the Theory of Plates (2 hours per week, 3 semesters)

Theses: supervision of 10 degree theses in the area of computational structural mechanics (finite element method) and structural analysis.

- Sept. 2001 – June 2006 Adjunct Professor, Hellenic Army Academy.
- Courses:
- Engineering Mechanics - Statics and Strength of Materials (4 hours per week, 8 semesters)
 - Engineering Mechanics - Dynamics of Rigid Bodies (4 hours per week, 3 semesters)

- Jan. 1995 – July 1998 Visiting Assistant Professor (Jan. 1996),
Department of Mechanical Engineering,
Texas A&M University, College Station, TX.

Courses:

- Engineering Mechanics - Statics
- Dynamics
- Conservation Principles in Mechanics
- Energy (Variational) Methods (graduate course)
- Finite Element Method (graduate course)

Based on very high teaching evaluations I was ranked in the top 1% of the College of Engineering of Texas A&M University and I was placed in the first position among the 65 faculty members of the Mechanical Engineering Department (*Teaching Award for Outstanding Contribution to the Undergraduate Program*, Texas A&M University, October 1996).

- Oct. 1989 – July 1990 Research Associate (on secondment from the Greek Navy),
Department of Structural Engineering,
School of Civil Engineering,
National Technical University of Athens.

Courses:

- Structural Dynamics
- Matrix Methods in Structural Analysis

- Oct. 1989 – Apr. 1990 Instructor (on secondment from the Greek Navy),
Engineer Officers' Technical School, Hellenic Army.

Course:

- Structural Analysis II - Statically Indeterminate Structures

- Sept. 1986 – May 1988 Teaching Assistant,
Department of Civil Engineering,
West Virginia University.

Courses:

- Structural Analysis I (Statically Determinate Structures)
- Structural Analysis II (Statically Indeterminate Structures)

RESEARCH BACKGROUND

- Sept. 2002 – present Assistant Professor,
Department of Civil & Infrastructure Engineering,
Technological Educational Institute of Athens.

Research Areas:

- ◆ Development of hybrid boundary element and finite element methods for the analysis of laminated or very thick structures. Implementation of a layer-wise Analog Equation modeling in the numerical scheme produces a meshless approach for the analysis of thick plates having arbitrary shape. Publications: [1], [13], [15].
- ◆ Inclusion of infill masonry walls in the numerical analysis of reinforced concrete structural systems. Dynamic analysis of buildings in order to determine its response under earthquakes, study the effect of the masonry infill, of the open ground floor (pilotis) and soft-storeys. The infilled frames along with the shear walls are considered to be two-dimensional plane elastic substructures and they are modeled using the boundary element method along with subregioning techniques. Special contact conditions between the masonry infill and the surrounding reinforced concrete frame may be accounted for by introducing appropriate interface conditions for the cases of separation, tensionless bond, friction and slip. Publications: [12], [14].
- ◆ Solution to the problem of lubricated flow of oil droplets in capillary tubes using the analog equation method along with the boundary element method. The developed methodology produces a meshless numerical model.
This work has been funded by the Technological Educational Institute of Athens for a two-year period and it is conducted in collaboration with Prof. M. Valavanides of the Civil & Infrastructure Engineering Department of TEI-A.
- ◆ Participation in four proposals for research funding (2009-2010), which are still under evaluation. Principal investigator for one of the projects being titled: *“Hydroelastic response of large floating structures and arbitrarily shaped bodies in an environment of varying 3D bathymetry” (Archimedes III Act)* and member of the main research team for the other three projects (in the framework of *Archimedes III and Thales Acts*).

- Sept. 1998 – Aug. 2002 Research Associate,
Institute of Structural Analysis & Aseismic Research,
School of Civil Engineering,
National Technical University of Athens, Greece.

Research Areas:

Three-dimensional stress analysis of layered plates using boundary-only techniques. Analysis of shear walls under three-dimensional state of stress, changes of total stiffness and seismic analysis of buildings whose pilotis has been reinforced with in-fill walls. Numerical methods in applied mechanics, the boundary element method and the analog equation method which yields a boundary-only

method. Methodologies for the numerical evaluation of the fundamental solutions for layered structures. Collaboration with Professor J.T. Katsikadelis. Publications: [2], [13], [14].

- Jan. 1995 – July 1998 Visiting Assistant Professor,
Department of Mechanical Engineering,
Texas A&M University, College Station, TX.

Research Areas:

Theoretical elasticity, three-dimensional stress analysis of laminated composite plates, numerical methods in applied mechanics, the boundary element method, the finite element method, methodologies for deriving fundamental solutions for composite laminates. Research work done in collaboration with Professor J.N. Reddy. Publications: [2], [3].

Doctor of Philosophy Research

- Aug. 1990 – Dec. 1995 Graduate Research Assistant,
Department of Engineering Science and Mechanics,
Virginia Tech (Aug. 1990 – Aug. 1993).

Research Associate,
Department of Engineering Science and Mechanics,
Virginia Tech (Aug. 1993 – Dec. 1994).

Visiting Assistant Professor,
Department of Mechanical Engineering,
Texas A&M University (Jan. 1995 – July 1998).

Research Areas:

Theoretical elasticity, micromechanics, analysis of layered media and laminated composite plates, numerical methods in applied mechanics.

Specific Topics:

Boundary Element and Finite Element Methods and their coupling, variational methods, micromechanical analysis of composite materials, nonlinear analysis of plane elastic bodies with inclusions, radial matrix cracking and interface failure for transverse loading of a hexagonal array fiber composite, application of BEM and penalty FEM models for viscous incompressible fluids, three-dimensional elasticity solutions for layered media, analysis of laminated composite structures using layerwise FEM modeling, Boundary Integral Equation models and the Boundary Element Method. Publications: [4], [5], [6], [16], [17], [18].

Research conducted during this period was supported by grants from the US Army Research Office and the US Air Force Office of Scientific Research and it was supervised by Professor J.N. Reddy (Principal Investigator). This research was not a part of any requirement towards the Ph.D. degree, but it was carried out as a part of the employment on the research projects.

Period of service in the Greek Navy

- Sept. 1988 – Sept. 1990 Research Associate (on secondment from the Greek Navy), Institute of Structural Analysis and Aseismic Research, School of Civil Engineering, National Technical University of Athens.

Research Areas:

Study of contact problems using the Boundary Element Method. Development of iterative boundary element techniques for the analysis of frictional contact problems with tensionless bonding arising in the analysis of composite two-dimensional structures, shear walls and in-filled frames. Publications: [7], [19].

Oct. 1988–Oct. 1989: served at the Office of the Secretary of Defense (Greek Pentagon, Athens) and also at the Division of Defense Industry and Technology of the Greek Ministry of Defense.

Research Assistant at the Department of Civil Engineering, West Virginia University (M.Sc. Research)

- Sept. 1986 – May 1988 *Research Areas:* Soil Structure Interaction problems, two-dimensional elastostatics and elastodynamics.
Specific Topics: Development of a hybrid BEM-FEM method in the frequency domain. Dynamic analysis of flexible-massive strip-foundations, subjected either to external loads or seismic waves. Emphasis on surface strip-foundations (M.Sc. Thesis). Publications: [8], [9], [20].
- Jan. 1987 – June 1987 Research on passively damped rhombic-type and double-lap joints. Parametric study for the establishment of design guidelines for favorable trade-offs between damping benefits and the associated stiffness and strength penalties in rhombic and double-lap joints. (Project Principal Investigator Professor J.C. Prucz, Department of Mechanical & Aerospace Engineering, West Virginia University). Publication: [10].
- Sept. 1986 – Dec. 1986 Participation in a project studying the behavior of teeth under various loading conditions and the interaction effects among the periodontal membrane of natural teeth and implants. Application of the Boundary Element Method. (Project Principal Investigator Professor P. Fotos, School of Dentistry, West Virginia University)
- Jan. 1986 – Aug. 1986 Graduate Research Assistant involved in an experimental research on open steel grid deck bridge systems. Static and dynamic tests were conducted on bridge specimens to study the effect of different problem parameters on the behavior

of open steel grid decks. Development of theoretical model, design equations and transverse load distribution factors for revision of the AASHTO code (*American Association of State Highway and Transportation Officials*). Principal Investigator of the project was Professor Hota V.S. GangaRao.

Institute of Structural Analysis & Aseismic Research, School of Civil Engineering,
National Technical University of Athens (Diploma Research)

- July 1985 – Dec. 1985 Research concerning the effect of in-fill walls in the stiffness of two-dimensional frames using an elasticity approach and the Boundary Element Method. Publication: [11].
- Sept. 1984 – July 1985 Diploma Thesis (Advisor: Prof. J. T. Katsikadelis). Analysis of plane elastic bodies with inclusions. Static analysis of composite shear walls by the Boundary Element Method. Study of the non-homogeneous elastic inclusion problem for the case of mismatching between the matrix material and the inclusions. Dynamic analysis of composite shear walls using a mixed BEM-FEM method. Publications: [21], [22].

BOOK CHAPTERS

- [1] Kokkinos, F.T., “A layer-wise Analog Equation modelling of thick plates”, *Recent Developments in Boundary Element Methods*, ed. E.J. Sapountzakis, WITPress, Computational Mechanics Publications, Southampton, pp. 103–118, 2010.
- [2] Kokkinos, F.T., and Reddy, J.N., “A hybrid BE/FE Method for the Analysis of Laminated Structures”, Chapter 7 in *Discontinuous Materials and Structures (Advances in BEM Series)*, ed. M.B. Bush, WITPress, Computational Mechanics Publications, Southampton, pp. 205–258, 1999.

JOURNAL PUBLICATIONS

- [3] Kokkinos, F.T., and Reddy, J.N., “Layerwise Fundamental Solutions and Three-Dimensional Model for Layered Media”, *Applied Composite Materials*, Vol. 3, pp. 277–300, 1996.
- [4] Kokkinos, F.T., and Reddy, J.N., “A Layerwise Boundary Integral Equation Model for Layers and Layered Media”, *Journal of Elasticity*, Vol. 38, No. 3, pp. 221–259, 1995.
- [5] Kokkinos, F.T., and Reddy, J.N., “BEM and Penalty FEM models for Viscous Incompressible Fluids”, *Computers & Structures*, Vol. 56, No. 5, pp. 849–859, 1995.

- [6] Kokkinos, F.T., and Reddy, J.N., "Nonlinear Analysis of Plane Elastic bodies with Inclusions by a BEM-FEM Approach", *Communications in Numerical Methods in Engineering*, Vol. 10, pp. 511–521, 1994.
- [7] Katsikadelis, J.T., and Kokkinos, F.T., "Analysis of Composite Shear Walls with Interface Separation, Friction and Slip Using BEM", *International Journal of Solids & Structures*, Vol. 30, No. 13, pp. 1825–1848, 1993.
- [8] Kokkinos, F.T., and Spyrakos, C.C., "Dynamic Analysis of Flexible Strip-Foundations in the Frequency Domain", *Computers & Structures*, Vol. 39, No. 5, pp. 473–482, 1991.
- [9] Spyrakos, C.C., Patel, P.N., and Kokkinos, F.T., "Assessment of Computational Practices in Dynamic Soil-Structure Interaction", *Journal of Computing in Civil Engineering*, ASCE, Vol. 3, No. 2, pp. 143–157, 1989.
- [10] Prucz, J.C., Kokkinos, F.T., and Spyrakos, C.C., "Advanced Joining Concepts for Passive Vibration Control", *Journal of Aerospace Engineering*, ASCE, Vol. 1, No. 4, pp. 193–205, 1988.
- [11] Katsikadelis, J.T., and Kokkinos, F.T., "Static and Dynamic Analysis of Composite Shear Walls by the Boundary Element Method", *Acta Mechanica*, Vol. 68, pp. 231–250, 1987.

CONFERENCE PAPERS

- [12] Bakas, N.P., Babouskos, N.G., Kokkinos, F.T., & Katsikadelis, J.T., "Influence of infill walls in the dynamic response of buildings via a boundary element modelling", *10th International Conference on Boundary Element Techniques BETEQ 2009*, July 22-24, Athens, Greece, eds. E.J. Sapountzakis & M.H. Aliabadi, EC Ltd, United Kingdom, pp. 173–182, 2009.
- [13] Kokkinos, F.T., "Three-dimensional analysis of thick plates by a boundary-only hybrid method", *2nd International Conference "From Scientific Computing to Computational Engineering"*, 2nd IC-SCCE, Athens, Greece, July 5-8, 2006.
- [14] Kokkinos, F.T., and Katsikadelis, J.T., "A Boundary-only 3-D Analysis of Thick Infill Walls under Unilateral Interface Conditions", *International Conference on Nonsmooth / Nonconvex Mechanics with Applications in Engineering*, Aristotle University of Thessaloniki (A.U.Th.), Thessaloniki, Greece, July 5-6, 2002.
- [15] Kokkinos, F.T., and Katsikadelis, J.T., "A Boundary-only Method for 3D-Stress Analysis of Plates Based on the Analog Equation Concept", *4th GRACM Congress on Computational Mechanics*, GRACM 2002, Patras, Greece, June 27-29, 2002.
- [16] Kokkinos, F.T., and Reddy, J.N., "Layerwise Fundamental Solutions for Layered Media", *4th National Congress on Mechanics of the Hellenic Society for Theoretical and Applied Mechanics (member of IUTAM)*, Xanthi, Greece, June 26–29, 1995.

- [17] Kokkinos, F.T., and Reddy, J.N., "BEM and Penalty FEM models for Viscous Incompressible Fluids", *31st Annual Technical Meeting of the Society of Engineering Science*, Texas A&M University, College Station, Oct. 10–12, 1994.
- [18] Kokkinos, F.T., and Reddy, J.N., "Nonlinear Analysis of Composite Structures by the Finite Element and Boundary Element Methods", *3rd National Congress on Mechanics of the Hellenic Society for Theoretical and Applied Mechanics (HSTAM member of IUTAM)*, Athens, June 25-27, 1992.
- [19] Katsikadelis, J.T., and Kokkinos, F.T., "A Boundary Element Analysis of Composite Shear Walls with Interface Separation, Friction and Slip", *International Conference on Computational Engineering Science*, Patras, Greece, April 21-25, 1991.
- [20] Kokkinos, F.T., and Spyrakos, C.C., "Hybrid BEM-FEM Analysis of Flexible Strip-Foundations in the Frequency Domain", *2nd National Congress on Mechanics of the Hellenic Society for Theoretical and Applied Mechanics (HSTAM member of IUTAM)*, Athens, June 29-July 1, 1989.
- [21] Katsikadelis, J.T., and Kokkinos, F.T., "Static Analysis of Composite Shear Walls by the Boundary Element Method", *1st National Congress on Mechanics of the Hellenic Society for Theoretical and Applied Mechanics (HSTAM member of IUTAM)*, Athens, June 25-27, 1986.
- [22] Katsikadelis, J.T., and Kokkinos, F.T., "A Boundary Element Approach to the Dynamic Analysis of Composite Shear Walls", *1st National Congress on Mechanics of the Hellenic Society for Theoretical and Applied Mechanics (HSTAM member of IUTAM)*, Athens, June 25-27, 1986. (paper presentation by the second author)

OTHER PUBLICATIONS

- [23] Kokkinos, F.T., and Katsikadelis, J.T., "Three-Dimensional Analysis of Thick In-fill Walls under Unilateral Interface Conditions by a Pure Boundary Method", *Scientific Publications of the Hellenic Army Academy*, Vol. 2, pp. 249–271, 2003.

AWARDS & HONORS

- Inclusion in the *Who'sWho in Science and Engineering* (2000–2001, 5th edition).
- Teaching Award for *Outstanding Contribution to the Undergraduate Program*, Texas A&M University, October 1996.
- Elected member of *The Honor Society of $\Phi\Kappa\Phi$* for exceptional academic performance at the Engineering Science and Mechanics Department of Virginia Tech, April 1992.
- Instructional Scholarships from the Department of Engineering Science and Mechanics (Virginia Tech) for the academic years 1991–92 and 1992–93.

- Honorary Citizenship awarded by the City of Morgantown for exceptional academic performance, April 1988.
- Honorary scholarships from the State Scholarships Institute of the Hellenic Republic for the academic years 1984–85 and 1985–86.

PROFESSIONAL ASSOCIATIONS

- Hellenic Association of Computational Mechanics, GRACM (since 1998).
- American Society for Engineering Education, ASEE (since 1997).
- Member of the U.S. Association for Computational Mechanics, USACM (since 1995).
- Member of the International Society for Boundary Elements (since 1992).
- Member of the Honor Society of Phi Kappa Phi, ΦΚΦ (since 1992).
- Member of the Technical Chamber of Greece (since 1985).
- Registered Professional Engineer (Civil) in Greece (since 1985).