



Loc Vu-Quoc

Aerospace Engineering, Mechanics & Engineering Science
231 Aerospace Building, P.O. Box 116250
University of Florida
Gainesville, FL 32611
Tel: 352-392-6227
Fax: 352-392-7303
Email: vu-quoc@ufl.edu
URL: <http://www/aero.ufl.edu/~vql/>
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EDUCATION

Ph.D. **UNIVERSITY OF CALIFORNIA at BERKELEY**, May 1986
STRUCTURAL ENGINEERING and STRUCTURAL MECHANICS
(SESM). Dissertation: *Dynamics of Flexible Structures Performing
Large Overall Motions: A Geometrically-Nonlinear Approach.*

M.S. **UNIVERSITY OF CALIFORNIA at BERKELEY**, December 1985
ELECTRICAL ENGINEERING and COMPUTER SCIENCE (EECS)
Emphasis: Control Theory and Optimization Theory.

M.S. **ILLINOIS INSTITUTE OF TECHNOLOGY**, Chicago, August 1982
STRUCTURAL MECHANICS.
Thesis: *Automatic Node Resequencing with Constraints.*

Diplôme d'Ingénieur, **INSTITUT NATIONAL des SCIENCES APPLIQUEES**
(INSA) Lyon, France, June 1979. STRUCTURAL MECHANICS.
Thesis: *L'Interaction Sol-Structure par la Méthode des Eléments Finis.*

AWARDS & HONORS

- Florida Teaching Improvement Program Award, 1995-1996.¹
- NSF 1990 Presidential Young Investigator Award, Dynamic Systems and Control Program, Mechanical and Structural System Division.
- Faculty Outstanding Achievements and Performance Award, University of Florida, 1990.
- NSF 1989 Research Initiation Award, Dynamic Systems and Control Program.
- Doctoral Preliminary Examination, *With Distinction*, U.C. Berkeley, 1983.
- Diplôme d'Ingénieur, *Avec Les Félicitations du Jury* (Highest Honors), 1979.

¹ This state-wide award includes a base (9-month) salary increase of \$5,000 (plus fringe benefit). In the academic year 1995-1996, twenty two engineering faculty received the TIP Award; the Aerospace Engineering, Mechanics & Engineering Science department had one faculty receiving the TIP award.

RESEARCH CONTRACTS & GRANTS:²

- *Computer-Aided-Engineering of Advanced Multilayer Capacitors for Small Satellite Power Supply*: Funded by NASA Florida Space Grant Consortium, Space Assistantship Enhancement Program, \$4,000 used to supplement RA salary, 1 year: 1 May 1990 - 30 Apr 1991.
- *Development of Interactive Graphics Procedures to Assist On-Going Interdisciplinary Advanced Space-Related Research Programs*: Funded by NASA Florida Space Grant Consortium, Undergraduate Space Research Participation Program Program, \$4,000, 1 year: 1 May 1990 - 30 Apr 1991.
- *Dynamics and Stability of Multi-Flexible/Rigid Body Systems Using Geometrically-Exact Theories: Formulation and Computation*: \$79,830, funded by NSF Research Initiation Award, Dynamic Systems and Control Program (\$69,830) and University of Florida equipment matching funds (\$10,000), 2 years: 15 Aug 1989 - 31 Jul 1991.
- *Computer-Aided-Engineering of Advanced Multilayer Capacitors for Small Satellite Power Supply*: Funded by the Technological Research and Development Authority (TRDA), Interdisciplinary Initiation Grant; Co-PI: Dr. K.D.T. Ngo of EE Dept; \$49,998; 1 Aug 1990 - 31 Jul 1991. *Matching funds* of \$49,998, provided by *NSF PYI program*.
- *Multi-Flexible/Rigid Body Dynamics Using Geometrically-Exact Structural Theories: Theoretical Formulation and Computational Aspects*: Funded by NASA Florida Space Grant Consortium, Space Assistantship Enhancement Program, \$8,000, 2 years: 1 May 1990 - 30 Apr 1992.
- *Finite Element Analysis of Optical Fiber Switching Devices*: Funded by NASA Florida Space Grant Consortium, Undergraduate Space Research Participation Program Program, \$4,000, 1 year: 1 May 1991 - 30 Apr 1992.
- *Development of CLESM MODULEF for Finite Element Analyses of Engineering Systems*: Funded by NASA Florida Space Grant Consortium, Undergraduate Space Research Participation Program Program, \$4,000, 1 year: 1 May 1991 - 30 Apr 1992.
- *Nonlinear Parametric Resonance in Flexible Robot Arms*: Funded by NASA Florida Space Grant Consortium, Undergraduate Space Research Program (USRP), \$5,000, 1 year: 1993-1994.
- *Dynamics of deployment of space robots: Geometrically-exact formulation and computational aspects*: Funded by NASA Florida Space Grant Consortium, Space Research Assistantship Program (SRAP), \$9,360, 1 year: 1993-1994.
- *Analysis and simulation of multilayered structures*: Funded by NASA Florida Space Grant Consortium, Undergraduate Space Research Program (USRP), \$5,000, 1 year: 1994-1995.

² Ordered according to ending dates.

- *Development of electromagnetic finite element code for applications in high-energy physics*: Funded by the Stanford Linear Accelerator Center, May-August 1995, \$18,000.
- *Automatic mesh generation for electromagnetic finite element computation*: Funded by NASA Florida Space Grant Consortium, Undergraduate Space Research Program (USRP) and Academic Year Undergraduate Program (AYUP), \$9,500, 1 year: 1995-1996.
- *NSF 1990 Presidential Young Investigator Award*: Funded by the NSF, 5 years, \$25,000 annual basic funding, plus \$37,500 annual matching funds. Full matching funds were obtained with a total amount of \$332,500. Project ending date: 31 July 1997.
- *Robotics and Spacecraft Dynamics*: Funded by System Dynamics International, Inc., \$20,000 to provide a fellowship (\$15,000) to a doctoral student and to support research, AY 1989-1990. *Matching funds* of \$20,000 provided by *NSF PYI Program*, 1990-1997.
- *Digital Equipment Corp.'s Equipment Grant*: \$53,359 discount on the purchase of a cluster of six DEC 2100 workstations and peripherals worth about \$100,000, 1990. *Matching funds* of \$53,359 provided by *NSF PYI Program*, 1990-1997.
- *The Next Generation of Multilayer Capacitors for Integrated Circuits: Development of a Computer-Aided-Engineering System.*: Funded by Digital Equipment Corp., External Research PYI Program, \$45,750 of DEC equipment, 1 year: 18 Dec 1990 - 18 Dec 1991. *Matching funds* of \$45,750 provided by *NSF PYI Program*, 1990-1997.
- *Research Experiences for Undergraduates*: Funded by NSF, \$30,000 (6 grants at \$5,000 for 1 year each): 1993-1996.
- *Installation and development of finite element codes*: Funded by NASA Florida Space Grant Consortium, Academic Year Undergraduate Program (AYUP), \$6,000, 1 year: 1996-1997.
- *NSF Engineering Research Center for Particle Science and Technology*: Funded by NSF starting from Sep 1994 - Aug 1999; PI is one of the 28 participating faculty members. PI's budget:³ \$40,710 for 1994-1995, \$48,758 for 1995-1996, \$40,132 for 1996-1997, \$19,800 for 1997-1998, \$6,300 for 1998-1999.
- *Finite element analysis and unstructured grid generation*: Funded by NASA Florida Space Grant Consortium, Undergraduate Space Research Program (USRP), \$8,000, 1 year: 1996-1997; Academic Year Undergraduate Program (AYUP), \$6,000, 1 year: 1997-1998.
- *Laser-mode switch redesign*, Integrated Process and Product Design Program: Funded by Lockheed-Martin Corp. and NSF/SUCCEED, \$23,000, 1 year: 1997-1998.

³ These figures, which do not include overhead, include portions of money contributed toward the purchase of equipment for the group, and scholarships to support undergraduates.

- *Model reduction techniques for MEMS simulations*: Funded by NASA Florida Space Grant Consortium, Florida Space Research Program (\$14,500), and by CFDR (\$10,800), 1 year: 1998-1999.
- *Finite element analysis of contact/impact problems*: Funded by NASA Florida Space Grant Consortium, Undergraduate Space Research Program (USRP), \$8,000, 1 year: 1998-1999.
- *Javelin missile seeker-harness optimization*, Integrated Process and Product Design Program: Funded by Lockheed-Martin Corp. and NSF/SUCCEED, \$23,000, 1 year: 1998-1999.
- *Development of a C++ finite element code*: Funded by NASA Florida Space Grant Consortium, Undergraduate Space Research Program (USRP), \$8,000, Summer 1999; Academic Year Undergraduate Program (AYUP), \$6,000, 1 year: 1999-2000; USRP, \$6,265 Summer 2000; Academic Year Undergraduate Program (AYUP), \$6,000, 1 year: 2000-2001.
- *Development of model reduction capability for MEMS simulation code*: Funded by the Defense Advanced Research Projects Agency (DARPA)/CFDR, \$100,000, 2 years: 1998-2000.
- *Smart radar structure: Embedding sensors in composite*, Integrated Process and Product Design Program: Funded by Lockheed-Martin Corp. and NSF/SUCCEED, \$23,000, 1 year: 1999-2000.
- *Modeling and experimentation of power magnetic components at temperature limits*: PIs: K.D.T. Ngo and L. Vu-Quoc, funded by NSF, \$299,935, 2 years, 1 Sep 99 - 31 Aug 2001. REU supplements: \$10,000 for year 2000, \$12,000 for year 2001.
- *Finite-element analysis with object-oriented codes*: Funded by NASA Florida Space Grant Consortium, Academic Year Undergraduate Program (AYUP), \$6,000, 1 year: 2000-2001.
- *Advanced cruise-missile powerpack for flight termination*, Integrated Process and Product Design Program: Funded by Lockheed-Martin Corp. and NSF/SUCCEED, \$23,000, 1 year: 2000-2001.

FELLOWSHIP/SCHOLARSHIP AWARDS

- Travel fellowship, US National Committee on Theoretical and Applied Mechanics, to attend the International Congress in Theoretical and Applied Mechanics (ICTAM), Kyoto, Japan, Aug 1996.
- The William and Helena Popert Fellowship, Spring 1986.
- EECS/SESM full Tuition Scholarship, U.C. Berkeley, Fall 1985.⁴

⁴ At U.C. Berkeley, tuition scholarships are awarded on a competitive basis, and are not automatically given in addition to RA/TAs awards.

- University of California Regents Fellowship, 1984-85.
- International House Scholarship, U.C. Berkeley, Spring 1984.
- SESM full Tuition Scholarship, U.C. Berkeley, 1983-84.⁴
- University of California Regents Fellowship, 1982-83.
- Bourse d'Enseignements Supérieurs, Ministry of Education, France, 1976-79.
- Full Tuition Scholarship plus stipends and travel expenses as one of the two selected exchange students from INSA, France, to IIT, Chicago, 1977-78.

PUBLICATIONS

A. Archival Journals

Papers organized by topics

- **Finite-element node renumbering**

1. Vu-Quoc, L., and O'Leary, J.R., "Automatic node resequencing with constraints," *Computers & Structures*, Vol.18, No.1, pp.55-69, 1984.⁵

- **Vehicle dynamics**

2. Vu-Quoc, L., and Olsson, M., "Formulation of a basic building-block model for interaction of high-speed vehicles on flexible structures," *ASME Journal of Applied Mechanics*, Vol.56, No.2, pp.451-458, 1989.
3. Vu-Quoc, L., and Olsson, M., "A computational procedure for interaction of high-speed vehicles on flexible structures without assuming known vehicle nominal motion," *Computer Methods in Applied Mechanics and Engineering*, Vol.76, pp.207-244, 1989.
4. Vu-Quoc, L., and Olsson, M., "New predictor/corrector algorithms with improved energy balance for a recent formulation of dynamic vehicle/structure interaction," *International Journal for Numerical Methods in Engineering*, Vol.32, pp.223-253, 1991.
5. Vu-Quoc, L., and Olsson, M., "High-speed vehicle models based on a new concept of vehicle/structure interaction component. Part I: Formulation," *ASME Journal of Dynamic Systems, Measurement, and Control*, Vol. 115, No. 1, pp.140-147, March 1993.
6. Vu-Quoc, L., and Olsson, M., "High-speed vehicle models based on a new concept of vehicle/structure interaction component. Part II: Algorithmic treatment and results for multispans guideways," *ASME Journal of Dynamic Systems, Measurement, and Control*, Vol. 115, No. 1, pp.148-155, March 1993.

⁵ Also appeared in the Proceedings of the *7th Structural Mechanics in Reactor Technology (SMIRT)* conference, Chicago, 1982.

- **Electrical engineering**

7. Vu-Quoc, L., and Srinivas, V., “A new methodology to obtain accurate phenomenological models for ferroelectrics, with application to BaTiO₃,” *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol.1, No.2, pp.196–212, Apr 1994. Erratum, Vol.1, No.4, p.757, Aug 1994.
8. Srinivas, V., and Vu-Quoc, L., “Accurate phenomenological models for all four phases of BaTiO₃ via semi-infinite optimization,” *Ferroelectrics*, Vol.163, No.1–4, pp.29–57, Jan 1995.
9. Vu-Quoc, L., and Srinivas, V., “Accurate phenomenological models that agree with experiments for ferroelectric-ferroelastic crystals: A semi-infinite optimization formulation,” *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, Vol.43, No.1, pp. 176–190, Jan 1996. Paper dedicated to Professor Elijah (Lucien) Polak of U.C. Berkeley.
10. Hsu, J.T., and Vu-Quoc, L., “A rational formulation of thermal circuit models for electro-thermal simulation—Part I: Finite element method,” *IEEE Transactions on Circuits and Systems*, Vol.43, No.9, pp.721–732, Sep 1996.
11. Hsu, J.T., and Vu-Quoc, L., “A rational formulation of thermal circuit models for electro-thermal simulation—Part II: Model reduction techniques,” *IEEE Transactions on Circuits and Systems*, Vol.43, No.9, pp.733–744, Sep 1996.
12. P. Nakmahachalasint, K.D.T. Ngo, L. Vu-Quoc, “A domain-wall model of static hysteresis for power ferrites,” *IEEE Transaction on Power Electronics*, provisionally accepted, under revision for full acceptance, 2001.

- **Conserving integration algorithms**

13. Vu-Quoc, L., and Li, S., “Invariant-conserving finite difference algorithms for the nonlinear Klein-Gordon equation,” *Computer Methods in Applied Mechanics and Engineering*, Vol.107, pp.341–391, 1993.
14. Li, S., and Vu-Quoc, L., “Finite-difference-calculus invariant structure of a class of algorithms for the nonlinear Klein-Gordon equation,” *SIAM Journal on Numerical Analysis*, Vol.32, No.6, pp. 1839–1875, Dec 1995. Paper dedicated to Professor Karl S. Pister on the occasion of his 70th birthday.

- **Structural dynamics, structural mechanics**

15. Simo, J.C., and Vu-Quoc, L., “Three-dimensional finite-strain rod model. Part II: Computational aspects,” *Computer Methods in Applied Mechanics and Engineering*, Vol.58, No.1, pp.79–116, 1986.
16. Simo, J.C., and Vu-Quoc, L., “On the dynamics of flexible beams under large overall motions—The plane case: Part I,” *ASME Journal of Applied Mechanics*, Vol.53, pp.849–854, Dec 1986.

17. Simo, J.C., and Vu-Quoc, L., "On the dynamics of flexible beams under large overall motions—The plane case: Part II," *ASME Journal of Applied Mechanics*, Vol.53, pp.855–863, Dec 1986.
18. Simo, J.C., and Vu-Quoc, L., "The role of nonlinear theories in transient dynamics analysis of flexible structures," *Journal of Sound and Vibration*, Vol.119, No.3, pp.487–508, 1987.
19. Vu-Quoc, L., and Simo, J.C., "On the dynamics of Earth-orbiting flexible satellites with multibody components," *AIAA Journal of Guidance, Control, and Dynamics*, Vol.10, No.6, pp.549–558, paper G87-088, Nov-Dec 1987.
20. Simo, J.C., and Vu-Quoc, L., "On the dynamics in space of rods undergoing large motions—A geometrically exact approach," *Computer Methods in Applied Mechanics and Engineering*, Vol.66, pp.125–161, 1988.
21. Vu-Quoc, L., and Mora, J.A., "A class of simple and efficient degenerated shell elements—Analysis of global spurious-mode filtering," *Computer Methods in Applied Mechanics and Engineering*, Vol.74, pp.117–175, 1989.
22. Vu-Quoc, L., "A perturbation method for dynamic analysis of under-integrated shell elements," *Computer Methods in Applied Mechanics and Engineering*, Vol.79, pp.129–172, 1990.
23. Simo, J.C., and Vu-Quoc, L., "A geometrically-exact beam model incorporating shear and torsion warping deformation," *International Journal of Solids and Structures*, Vol.27, No.3, pp.371–393, 1991.
24. Vu-Quoc, L., and Hoff, C., "On a highly robust spurious-mode filtering method for uniformly reduced-integrated shell elements," *International Journal for Numerical Methods in Engineering*, Vol.34, pp.209–220, 1992.
25. Vu-Quoc, L., and Leger, P., "Efficient evaluation of flexibility matrices of tapered I-beams accounting for shear deformation," *International Journal for Numerical Methods in Engineering*, Vol. 33, pp. 553-566, 1992.
26. Vu-Quoc, L., Ebcioğlu, I.K., and Deng, H., "On geometrically-exact theory of multilayer structures," invited paper, *Bulletin of the Technical University of Istanbul*, special issue "Suhubi and Continuum Mechanics," commemorating the 60th birthday of Prof. E. Suhubi, Vol.47, No.3, pp. 227–282, 1994.
27. Vu-Quoc, L., and Li, S., "Dynamics of sliding geometrically-exact beams: Large angle maneuver and parametric resonance," *Computer Methods in Applied Mechanics and Engineering*, Vol.120, No.1–2, pp.65–118, Jan 1995. Paper dedicated to the memory of Professor Juan Carlos Simo of Stanford University.
28. Vu-Quoc, L., and Deng, H., "Galerkin projection for geometrically-exact sandwich beams allowing for ply drop-off," *ASME Journal of Applied Mechanics*, Vol.62, pp.479–488, June 1995. Paper dedicated to the memory of Professor Juan Carlos Simo of Stanford University.
29. Vu-Quoc, L., and Ebcioğlu, I.K., "Dynamic formulation for geometrically-exact sandwich beams and 1-D plates," *ASME Journal of Applied Mechanics*, Vol.62,

- pp.756–763, Sep 1995. Paper dedicated to Professor Robert L. Taylor of U.C. Berkeley on the occasion of his 60th birthday.
30. Deng, H., and Vu-Quoc, L., “On the algebra of two-point tensors and their applications,” *Zeitschrift für Angewandte Mathematik und Mechanik* (ZAMM, Journal of Applied Mathematics and Mechanics), Vol.76, No.9, pp.540–541, 1996.
 31. Vu-Quoc, L., and Ebcioğlu, I.K., “General multilayer geometrically-exact beams / 1-D plates with piecewise linear section deformation,” *Zeitschrift für Angewandte Mathematik und Mechanik* (ZAMM, Journal of Applied Mathematics and Mechanics), Vol.76, No.7, pp. 391–409, 1996.
 32. Vu-Quoc, L., Deng, H., and Ebcioğlu, I.K., “Multilayer beams: A geometrically-exact formulation,” *Journal of Nonlinear Science*, Vol.6, No.3, pp.239–270, 1996. Paper dedicated to the memory of Professor Juan Carlos Simo of Stanford University.
 33. Vu-Quoc, L., and Deng, H., “Dynamics of geometrically-exact sandwich beams: Computational aspects,” *Computer Methods in Applied Mechanics and Engineering*, Vol.146, pp.135–172, 1997.
 34. Vu-Quoc, L., Ebcioğlu, I.K., and Deng, H., “Dynamic formulation for geometrically-exact sandwich shells,” *International Journal of Solids and Structures*, Vol.34, No.20, pp.2517–2548, 1997.
 35. Deng, H., and Vu-Quoc, L., “Dynamics of geometrically-exact sandwich structures,” *International Journal of Mechanical Sciences*, Vol.40, No.5, pp.421–441, 1998.
 36. Vu-Quoc, L., and Ebcioğlu, I.K., “General multilayer geometrically-exact beams and one-dimensional plates with deformable layer thickness,” *Zeitschrift für Angewandte Mathematik und Mechanik* (ZAMM), Vol.80, No.2, pp.113-135, 2000.
 37. Vu-Quoc, L., and Ebcioğlu, I.K., “Multilayer shells: Geometrically-exact formulation of equations of motion,” *International Journal of Solids and Structures*, Vol.37, No.45, pp.6705-6737, Nov 2000.
 38. Vu-Quoc, L., Deng, H., and Tan, X.G., “Geometrically-exact sandwich shells: The static case,” *Computer Methods in Applied Mechanics and Engineering*, Vol.189, No.1, pp.167-203, 2000.
 39. Vu-Quoc, L., Deng, H., and Tan, X.G., “Geometrically-exact sandwich shells: The dynamic case,” *Computer Methods in Applied Mechanics and Engineering*, Vol.190, No.22-23, pp.2825-2873, 2001.
 40. Vu-Quoc, L., and Ebcioğlu, I.K., “Equilibrium derivation of the equations of motion for geometrically-exact multilayer shells,” submitted to the *ASME Journal of Applied Mechanics*, 2000.

- **Granular flow, contact mechanics**

41. LoCurto, G.J., Zhang, X., Zakirov, V., Bucklin, R.A., Vu-Quoc, L., Hanes, D.M., Walton, O.R., “Soybean impacts: Experiments and dynamic simulations,”

- Transactions of the American Society of Agricultural Engineers*, Vol.40, No.3, pp.789–794, 1997.⁶
42. Vemuri, B.C., Chen, L., Vu-Quoc, L., Zhang, X., and Walton, O., “Efficient collision detection algorithms and accurate contact mechanics for granular flow simulation,” *Graphical Models and Image Processing*, Vol.60, No.6, pp.403-422, Nov, 1998.
 43. Vu-Quoc, L., and Zhang, X., “An accurate and efficient tangential force-displacement model for elastic-frictional contact in particle-flow simulations,” *Mechanics of Materials*, Vol.31, No.4, pp.235-269, 1999. Erratum, Vol.31, No.11, pp.761-762, 1999.
 44. Vu-Quoc, L., and Zhang, X., “An elasto-plastic contact force-displacement model in the normal direction: Displacement-driven version,” *Proceedings of the Royal Society of London, Series A*, Vol.455, No.1991, pp.4013-4044, 1999.
 45. Zhang, X., and Vu-Quoc, L., “Simulation of chute flow of soybeans using an improved tangential force-displacement model,” *Mechanics of Materials*, Vol.32, No.2, pp.115-129, 2000.
 46. Vu-Quoc, L., Zhang, X., and Walton, O.R., “A 3-D discrete element method for dry granular flows of ellipsoidal particles,” invited paper to the special issue of the *Computer Methods in Applied Mechanics and Engineering on Dynamics of Contact and Impact Problems*, Vol.187, No.3-4, pp.483-528, 2000.
 47. Vu-Quoc, L., Zhang, X., and Lesburg, L., “A normal force-displacement model for contacting spheres, accounting for plastic deformation: Force-driven formulation,” *ASME Journal of Applied Mechanics*, Vol.67, No.2, pp.363-371, Jun 2000.
 48. Zhang, X., and Vu-Quoc, L., “A method to extract the mechanical properties of particles in collision based on a new elastoplastic normal force-displacement model,” *International Journal of Plasticity*, under revision for acceptance, 2000.
 49. Zhang, X., and Vu-Quoc, L., “Modeling coefficient of restitution as a function of impact velocity,” *International Journal of Impact Engineering*, under revision for acceptance, 2000.
 50. Vu-Quoc, L., Lesburg, L., Zhang, X., “Normal and tangential force-displacement relations for frictional elasto-plastic contact of spheres,” *International Journal of Solids and Structures*, to appear, 2001.

B. Book chapters

1. “On the dynamics of 3-D finite-strain rods,” with J.C. Simo, in *Finite Element Methods for Plate and Shell Structures. Vol.2: Formulations and Algorithms*, pp.1-30, ed. by T.J.R. Hughes & E. Hinton, Pineridge Press, 1986.

⁶ The names of the graduate students are listed first, followed by their respective advisors: G.J. LoCurto guided by Prof. R.A. Bucklin, X. Zhang guided by Prof. L. Vu-Quoc, V. Zakirov guided by Prof. D.M. Hanes.

2. “Multilayer beams: A geometrically-exact formulation,” with I.K. Ebcioğlu and H. Deng, in *Mechanics: From Theory to Computation. Essays in Honor of Juan Carlos Simo*, pp.139-170, ed. by J. Marsden and S. Wiggins, CalTech, Springer Verlag, 2000.
3. “Dynamic interaction of high-speed vehicles on multiple-span elevated guideways: Lumped-parameter vehicle models and new algorithmic treatment,” with M. Olsson, in *Mechatronics Systems Techniques and Applications. Vol.2: Transportation and Vehicular Systems*, pp.151-257, ed. by C. T. Leondes, UCLA, Gordon and Breach International Series in Engineering, Technology and Applied Science, 2000.

C. Conference papers, extended abstracts, other presentations

1. “Automatic node resequencing with constraints,” with J.R. O’leary, paper, the 7th *Structural Mechanics in Reactor Technology* (SMIRT) Conference, Chicago, 1982.
2. “A novel approach to the dynamics of flexible robot arms,” with J.C. Simo, paper, *International Federation of Automatic Control* (IFAC) Conference, UCLA, June 1986.
3. “On the dynamics of flexible structures undergoing large overall motions: A geometrically nonlinear approach,” with J.C. Simo, abstract, *First World Congress on Computational Mechanics*, U. of Texas, Austin, 22-26 September 1986.
4. “On the dynamics of flexible beams under large overall motions—The plane case,” with J.C. Simo, papers 86-WA/APM-41 and 42, *ASME Winter Annual Meeting*, Anaheim, CA, 7-12 December 1986.
5. “Formulation of a basic building-block model for interaction of high-speed vehicles on flexible structures,” paper 89-APM-37, *3rd ASCE/ASME Mechanics Conference*, 9-12 July 1989, San Diego.
6. “Computational methods for high-speed vehicles on flexible guideways,” paper, invited contribution, Proceedings of the *Symposium on Dynamics and Control of Multi-body/Robotic Systems with Space Applications*, DSC-Vol.15, pp. 19-26, ASME Winter Annual Meeting, San Francisco, December 1989.
7. “Analysis of spurious modes and a global perturbation method for static and dynamic analyses using under-integrated shell elements,” extended abstract, WCCM II, 27-31 August 1990, Stuttgart, West Germany.
8. “Predictor/corrector algorithms for interaction of high-speed vehicles and flexible guideways,” with M.Olsson, extended abstract, presented at the WCCM II, 27-31 August 1990, Stuttgart, West Germany.
9. “On a highly robust spurious-mode filtering method for uniformly reduced-integrated shell elements,” with C. Hoff, extended abstract, *Second World Congress on Computational Mechanics*, (WCCM II), 27-31 August 1990, Stuttgart, West Germany.
10. “Recent developments in dynamic interaction of high-speed vehicles and flexible multi-span guideway,” paper, invited contribution, proceedings of the *Second Symposium*

- on *Transportation Systems*, AMD-Vol. 108, pp. 141-148, ASME Winter Annual Meeting, Dallas, November 1990. (Also report AeMES-TR-90-11.)
11. "Invariant-conserving finite difference algorithms for the nonlinear Klein-Gordon equation," paper, Symposium on *New Methods in Transient Analysis*, ASME Winter Annual Meeting, Nov 1992, Anaheim, CA, proceedings no. PVP-Vol.246/AMD-Vol.143, pp. 109-122.
 12. "Dynamic of Sliding Geometrically-Exact Beams: Large Angle Maneuvers and Non-linear Parametric Resonance," *Symposium on Mechanics of Flexible Media*, ASME Winter Annual Meeting, Anaheim, CA, Nov 1992. Report AeMES-TR-92-3-04, Nov 1992.
 13. "Dynamics of sliding geometrically-exact beams," *International Symposium on Non-linear Dynamics and Stochastic Mechanics*, University of Waterloo, Waterloo, Canada, 28 Aug – 1 Sep 1993.
 14. "Accurate phenomenological models that agree with experiments for ferroelectric-ferroelastic crystals: A semi-infinite optimization approach," with V. Srinivas and J. Cross, abstract, SIAM Conference on *Emerging Issues in Mathematics and Computation from the Materials Sciences*, Pittsburgh, 18-20 April 1994.
 15. "A rational formulation of thermal circuit models by finite element method and model reduction techniques for electro-thermal simulation," with J.T. Hsu, paper, in Proc. of the *IEEE 4th Workshop on Computers in Power Electronics*, 94THO705-4, pp. 67–72, Université du Québec à Trois Rivières, Canada, 7-10 August 1994.
 16. "Galerkin projection for geometrically-exact sandwich beams allowing for ply drop-off," with H. Deng, *ASME Joint Applied Mechanics and Materials Summer Meeting*, UCLA, Los Angeles, CA, 28-30 June 1995. Paper no. 95-APM-7, contribution of the ASME Applied Mechanics Division.
 17. "Dynamics of geometrically-exact sandwich beams/1-D plates: Computational aspects," with H. Deng, in Proc. of the *15th Biennial Conference on Vibration and Noise: Symposium on Nonlinear Vibrations*, 1995 ASME Design Engineering Technical Conferences, 17-21 Sept 1995, Boston, MA.
 18. "Modelling and simulation of dry soybean flow," with X. Zhang, O.R. Walton, Y. Cao, B. Vemuri, in Proc. of the *SES 32nd Annual Technical Meeting*, pp.641–642, 29 Oct–2 Nov 1995, New Orleans, LA.
 19. "Dynamics of highly deformable sandwich frame structures," with H. Deng, Proc. of the *11th Conference in Engineering Mechanics*, ed. by Y.K. Lin and T.C. Su, 19–22 May 1996, Fort Lauderdale, FL, pp. 1147–1150.
 20. "Discrete particle flow code for non-spherical particles, with efficient contact detection algorithms," with X. Zhang and O.R. Walton, Proc. of the *5th World Congress of Chemical Engineering*, Particle Technology Forum, Vol.V, pp.331–336, 14–18 July 1996, San Diego, CA.

21. "Development of a granular flow code for chute flow of soybeans, plastic pellets, etc.," with X. Zhang, *19th International Congress on Theoretical and Applied Mechanics (ICTAM)*, Kyoto, Japan, 25-31 August 1996.
22. "Simplified tangential force-displacement models for a discrete element particle flow code," with Lesburg, L., Zhang, X., Walton, O.R., in *Powders and Grains 97*, ed. by R.P. Behringer and J.T. Jenkins, Proc. of the Third International Conference On Micromechanics of Granular Media, Duke University, Durham, NC, 18-22 May 1997, pp.307-310.
23. "Dynamics of geometrically-exact multilayer beams," with H. Deng, invited paper, 4th US National Congress on Computational Mechanics, San Francisco, 5-9 Aug 1997.
24. "Soybean friction properties," with G.J. LoCurto, V. Zakirov, R.A. Bucklin, D.M. Hanes, A.A. Texeira, O.R. Walton, X. Zhang, *ASAE Annual International Meeting*, Minneapolis, MN, 10-14 Aug 1997, ASAE paper no.97-4108.
25. "Geometrically-exact structural theory, computation, and applications," invited keynote lecture, *Japan-US-Vietnam workshop on Research and Education in Systems, Computation, and Control Engineering*, Hanoi Institute of Mathematics, Hanoi, Vietnam, 13-15 May 1998.
26. "A new contact force-displacement model that accounts for plastic deformation both normal and tangential directions for granular flow simulations," with L. Lesburg, X. Zhang, *13th US National Congress in Applied Mechanics*, Gainesville, FL, 21-26 Jun 1998.
27. "Geometrically-exact sandwich shells: Theory and computation," with H. Deng, X.G. Tan, *13th US National Congress in Applied Mechanics*, Gainesville, FL, 21-26 Jun 1998.
28. "Geometrically-exact sandwich shells: Theory and computation," *Mathematisches Forschungsinstitut Oberwolfach*, invited paper, Oberwolfach-Walke, Germany, 16-22 Aug 1998.
29. "Efficient and accurate elastoplastic force-displacement models for particles in collision," invited paper, 5th US National Congress on Computational Mechanics, Boulder, CO, 4-7 Aug 99.
30. "Toward bearingless / linkless adaptive rotor systems," US Army Vehicle Technology Directorate, NASA Langley, VA, 6 Mar 2000.
31. "Coordinate-transformation and model reduction for efficient simulation of coupled circuit-field problems," with Y. Zhai and K.D.T. Ngo, 32nd Power Electronic Specialists Conference, The University of British Columbia, Vancouver, Canada, 17-22 Jun 2001; 6th US National Congress on Computational Mechanics, Dearborn, MI, 1-4 Aug 2001.
32. "Substructuring analysis at undergraduate level: A new approach to teach FEM," 6th US National Congress on Computational Mechanics, Dearborn, MI, 1-4 Aug 2001.

D. Technical reports (which did not appear as papers).Abbreviations:

AeMES = Aerospace Engineering, Mechanics & Engineering Science; U. of Florida.

ERL = Electronics Research Laboratory; U.C. Berkeley.

SEMM = Structural Engineering, Mechanics, and Materials; U.C. Berkeley.

1. *Implantation de la Masse Cohérente et de la Raideur Géométrique dans CASTOR.SD*, Centre Technique des Industries Mécaniques, Senlis, France, 1981.
2. *Dynamics of Flexible Structures Performing Large Overall Motions: A Geometrically-Nonlinear Approach*, Ph.D. Dissertation, ERL Memorandum UCB/ERL M86/36, UC Berkeley, May 1986.
3. *Interaction Between High-Speed Moving Vehicles And Flexible Structures: An Analysis Without Assumption of Known Vehicle Nominal Motion*, with M. Olsson, report UCB/SEMM-87/10, UC Berkeley, December 1987.
4. *An Assessment of Current Finite Element Formulations in Computational Magnetostatics*, with R. Hedlund and P. Nöu, report no. AeMES-TR-89-69, September 1989.
5. *Dynamic Interaction of High-Speed Vehicles on Multiple-Span Elevated Guideways: Lumped-Parameter Vehicle Models and New Algorithmic Treatment*, with M. Olsson, report AeMES-TR-90-07, 1990.
6. *CLESM MODULEF: A Version of MODULEF For A Cluster of DEC5000/2100 Workstations*, with M. Tavares, M. Chau, L. Lesburg, report AeMES-TR-94-1-04, 1994.
7. *Toward An Accurate Phenomenological Model That Agrees With Experiments For All 4 Phases of Barium Titanate: A Semi-Infinite Optimization Formulation*, with S. Srinivas, report AeMES-TR-92-1-07, 1992.
8. *Dynamic of Sliding Geometrically-Exact Beams: Large Angle Maneuvers and Nonlinear Parametric Resonance. Presentation transparencies*, with S. Li, report AeMES-TR-92-3-04, Nov 1992
9. *Dynamics of Multibody Systems: Methods of Formulation and Symbolic Computation*, with S. Tavares, report AeMES-TR-92-3-03, 1992.
10. *Methods of Solution of Differential-Algebraic Equations for Applications to Multibody Systems*, with S. Tavares, report AeMES-TR-95-3-01, 1995.
11. *Finite element modeling of advanced multilayer ceramic capacitors using CLESM Modulef*, with J. Langford, V. Srinivas, report AeMES-TR-95-3-02, 1995.
12. *Automatic grid generation and finite element analysis*, with B. Fuller, report AeMES-TR-96-3-01, 1996.

Book reviews

1. Vu-Quoc, L. [2000], *Review of the Book "Hager, W.W., and Pardalos, P. (Eds) [1998], Optimal Control, Kluwer Academic Publishers", Optimization Methods and Software, Vol.13, pp.227-230.*

REVIEW of PAPERS and PROPOSALS

A. Archival journals

1. American Control Conference (ACC).
2. AIAA Journal.
3. ASCE Journal of Engineering Mechanics.
4. ASCE Journal of Structural Engineering.
5. ASME Journal of Applied Mechanics.
6. ASME Journal of Dynamic Systems, Measurement, and Control.
7. ASME Journal of Vibration and Acoustics.
8. Computational Mechanics.
9. Computer Methods in Applied Mechanics and Engineering.
10. Earthquake Engineering and Structural Dynamics.
11. IEEE Transactions on Robotics and Automation.
12. IEEE Transactions on Power Electronics.
13. International Journal for Numerical Methods in Engineering.
14. International Journal of Solids and Structures.
15. Journal of Computational Physics.
16. Journal of Sound and Vibration.
17. Transportation Research Board.
18. Zeitschrift für Angewandte Mathematik und Mechanik (ZAMM, Journal of Applied Mathematics and Mechanics).

B. Proposals

1. Australian Research Council.
2. Israel Academy of Sciences and Humanities, Basic Research Foundation; proposal review.
3. NSF Dynamic Systems and Control Program; proposal review.
4. NSF Division of International Programs; proposal review.
5. NSF 1990 Research Initiation Awards Review Panel, March 1990.
6. NSF 1991 Research Initiation Awards Review Panel, May 1991.
7. NSF Unsolicited Proposals Review Panel, October 1992.
8. NSF Young Investigator Awards Review Panel, April 1993.
9. NSF Unsolicited Proposals Review Panel, June 1994.
10. NSF Unsolicited Proposals Review Panel, March 1995.
11. NSF Unsolicited Proposals Review Panel, July 1996.
12. NSF Unsolicited Proposals Review Panel, June 1997.
13. U.S. Army Research Office, Engineering Science Division; proposal review.

14. U.S. Civilian Research & Development Foundation⁷

C. Ph.D dissertations (International)

- External Examiner of Ph.D. dissertation for the department of Mechanical Engineering, The University of Queensland, Brisbane, Australia.

D. Books

- Review of *Optimal Control*, Ed. by W.W. Hager and P. Pardalos, Kluwer Academic Publishers, appeared in the *Optimization Methods and Software*, 1999.

INVITED LECTURES⁸

1. California Institute of Technology, Division of Engineering and Applied Sciences, October 1986.
2. University of California at San Diego, Applied Mechanics and Engineering Science, May 1987.
3. University of Maryland, Systems Research Center, College Park, October 1989.
4. Lawrence Livermore National Laboratory, Computing and Mathematics Research Division, Dec 1989.
5. University of Michigan, Mechanical Engineering and Applied Mechanics, March 1990.
6. The MacNeal-Schwendler Corp., NASTRAN development Group, 815 Colorado Blvd, Los Angeles, CA 90041-1777, November 1992.
7. University of Toronto, Civil Engineering, Toronto, Canada, September 1993.
8. University of California at Los Angeles, Civil Engineering, January 1995.
9. Florida High-Field Magnetic Laboratory, Tallahassee, FL, June 1996.
10. Keynote lecture, Japan-US-Vietnam workshop on “Research and Education in Systems, Computation, and Control Engineering,” Hanoi Institute of Mathematics, Hanoi, Vietnam, 13-15 May 1998.
11. Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach-Walke, Germany, 16-22 Aug 1998.

UNIVERSITY EMPLOYMENT

- *Professor*, Aerospace Engineering, Mechanics & Engineering Science, University of Florida, Gainesville, FL 32611. Aug 1999 - present.

⁷ To provide “peaceful, non-weapons opportunities to weapons scientists and engineers in the New Independent States of the former Soviet Union, particularly those with knowledge and skills in weapons of mass destruction.”

⁸ The invited lectures listed here are initiated by the inviting institutions themselves, and not by the lecturer. Several other lectures (e.g., related to job searching, or given at University of Florida) are not listed here.

- *Associate Professor, tenured*, Aerospace Engineering, Mechanics & Engineering Science, University of Florida, Gainesville, FL 32611. Jul 1993 - Jul 1999. Appointed *Doctoral Research Faculty* since 1993.
- *Assistant Professor*, Aerospace Engineering, Mechanics & Engineering Science, University of Florida, Gainesville, FL 32611. August 1988 - June 1993. Appointed *Graduate Studies Faculty* since 1988.
- *Post-Doctoral Research Fellow*, APPLIED MECHANICS DIVISION, Stanford University, and SEMM, U.C. Berkeley. June 1986 - June 1988. Worked on the formulation and computational aspects of (i) dynamic interaction of high-speed Maglev vehicles on flexible guideways, (ii) geometrically-exact rods, plates, and shells that undergo large overall motions and possibly large deformation, with applications to robotics, machine design, aircraft and spacecraft dynamics.
- *Post-Graduate Researcher*, ELECTRONICS RESEARCH LABORATORY, UC Berkeley. December 1983 - May 1986. Participated in interdisciplinary research on *Mathematical Modeling and Control of Large Space Structures*. Worked on theoretical formulation and computational aspects of geometrically-exact rod models.
- *Research Assistant*, SESM, UC Berkeley, May 1983 - November 1983. Participated in developing DELIGHT.STRUCT, an earthquake-resistant steel frames interactive design program based on semi-infinite optimization techniques.
- *Teaching Assistant*, Illinois Institute of Technology, Chicago, 1981-82. Assisted in teaching undergraduate structural mechanics courses. Set-up a structural programs library and provided technical support for users.

RESEARCH GUIDANCE

1. **Postdoc:** Dr. Santiago Tavares: Differential-Algebraic Equations, Multibody Dynamics, 1990-1992.
2. **Ph.D.:**
 - Y. Zhai: Model reduction for MEMS simulation. In progress.
 - K.S. Mok: Computational plasticity. In progress.
 - X.G. Tan: Geometrically-exact composite structures. In progress.
 - X. Zhang: Granular flow simulation and visualization. Fall 1998.
 - H. Deng: Geometrically-exact multilayer beams and shells. Summer 1997.
 - M.R. Varghar: Magneto-solid mechanics. Fall 1996.
 - V. Srinivas: Computational electromagnetics. Spring 1996.
 - J.T. Hsu (Co-Chair): Electro-magneto-thermal simulation for power electronic devices. Dec 1995.
 - J.A. Mora (main adviser: Prof. R.L. Taylor of U.C. Berkeley): Finite element analysis of shell structures, U.C. Berkeley, May 1988.
3. **M.S.:** With thesis.
 - B. Fuller: Finite element formulation of filtration problem. Summer 1998.

- L. Lesburg: Finite element analysis of contact mechanics and force-displacement models for granular flow simulation. Summer 1997.
 - S. Jaitapker: Nonlinear stability analysis, center manifold theory. Aug 1995.
 - J.T. Hsu: Electro-thermal simulation. Dec 1993.
 - S. Li: Nonlinear dynamics. Spring 1993.
 - V. Srinivas: Electronic materials. Fall 1992.
 - R. Hedlund (from The Royal Institute of Technology, Stockholm, Sweden): Computational magnetostatics by finite element method, U. of Florida, August 1989.
 - P. Nöu (from The Royal Institute of Technology, Stockholm, Sweden): Computational magnetostatics by finite element method, U. of Florida, August 1989.
4. **M.S.:** Without thesis.
- J. Yang, August 1995.
5. **B.S.:**
- VanLy Nguyen, *Highest Honors*, 1998, Finite element analysis of filtration problem. Florida Space Grant Consortium, 1996-1998.
 - Elizabeth Cranston, *Highest Honors*, 1997, Finite element analysis of contact mechanics. Best Undergraduate Research Award, NSF ERC Particle Science and Technology, Spring 1997.
 - L. Lesburg, *Highest Honors*, 1995: Development of finite element codes, nonlinear FE analysis using ABAQUS. Florida Space Grant Consortium (1994-1995), and NSF ERC Particle Science and Technology (1995).
 - J. Langford, *Highest Honors*, 1995: Development of mesh generator based on MODULEF for advanced multilayer capacitors. NSF Research Experiences for Undergraduates (1994-1995).
 - K. Thornton, *Highest Honors*, 1994: Application of Floquet theory to the stability of sliding beams; presented at AIAA Southeast Regional Student Conference, *AIAA Minta Martin Student Paper Award; Knox Millsap Award for Outstanding Undergraduate*. Florida Space Grant Consortium and NSF Research Experiences for Undergraduates, 1992-1994.
 - S. Kar, *High-Honors*, 1989: Correlation of analytical calculations and experimental measures of vibrating flexible structures via optimization of parameters.
 - M. Chau: Development of CLESM MODULEF. National Merit Scholar, Florida Undergraduate Scholarship, NSF Research Experiences for Undergraduates grant, 1993-1995.
 - Michel Tavares: Installation and development of research software tools. NSF PYI, 1991-1992.
 - Mauricio Tavares: Installation and development of CLESM MODULEF. NSF PYI, 1990-1992.

COURSES TAUGHT (at University of Florida)

Abbreviations:

- EAS = Aerospace Engineering.
- EGM = Engineering Mechanics.

1. *EGM 6934 Nonlinear Finite Element Methods* (FEM III): Graduate standing, Spring 1997: Focused on Computational Plasticity.
Evaluation: (scale 1 to 5, with **5 = best**.)
 Instructor evaluation = 4.38 (college mean = 3.90)
 Instructor overall = 4.57 (college mean = 3.95)
 Additional questions = 4.22 (college mean = 3.85)
2. *EGM 6352 Advanced Finite Element Methods* (FEM II) (Fall 1992, '93, '94, '95, '96):⁹ Graduate standing.
Evaluation: (scale 1 to 5, with **5 = best**.)
 Instructor evaluation = 4.75 (college mean = 3.97)
 Instructor overall = 4.89 (college mean = 4.00)
 Additional questions = 4.65 (college mean = 3.87)
3. *EGM 6611 Continuum Mechanics I*: Graduate standing. Fall 1995.
Evaluation: (scale 1 to 5, with **5 = best**.)
 Instructor evaluation = 4.15 (college mean = 3.83)
 Instructor overall = 4.36 (college mean = 3.85)
 Additional questions = 4.05 (college mean = 3.78)
4. *EGM 6351 Finite Element Methods*: Graduate standing; lectures delivered to off-campus sites (e.g., Eglin Air Force Base, etc.) through the Florida Engineering Education Delivery System (FEEDS). Spring 1990, '91, '92, '93, '94, '95, '96, '97.
Evaluation: (scale 1 to 5, with **5 = best**.)
 Instructor evaluation = 4.91 (college mean = 4.01)
 Instructor overall = 5.00 (college mean = 4.05)
 Additional questions = 4.98 (college mean = 3.92)
5. *EAS 6221 Plates & Shells I*: Graduate standing. Fall 1990.
Evaluation: (scale 1 to 5, with **1 = best**.)
 Teacher = 1.20 (college mean = 2.01)
 Course = 1.50 (college mean = 2.41)
6. *EAS 6222 Plates & Shells II*: Graduate standing. Fall 1991.
Evaluation: (scale 1 to 5, with **1 = best**.)
 Teacher = 1.13 (college mean = 1.93)
 Course = 1.25 (college mean = 2.38)
7. *EGM 5421 Modern Techniques in Structural Dynamics*: Graduate standing; lectures delivered to off-campus sites (e.g., Eglin Air Force Base, Harris Corp. etc.) through the Florida Engineering Education Delivery System (FEEDS). Spring 1989.
Evaluation: (scale 1 to 5, with **1 = best**.)
 Teacher = 1.46 (college mean = 1.92)
 Course = 1.46 (college mean = 2.45)
8. *EAS 4200 Aerospace Structure I*: Undergraduate senior level. Fall 1989.
9. *EGM 3520 Mechanics of Materials*: Undergraduate junior level. Fall 1988 and Summer 1989.
10. *EGM 3511 Statics*: Undergraduate junior level. Fall 1993, '94; Spring 1994, '95.

⁹ The contents of the two versions of the course differ by 50%, with the difference being: emphasis on techniques for Computational Fluid Dynamics in the first version (Fall '92), and emphasis on saddle point problems and mixed finite element methods in the second version (Fall '93). The emphasis was chosen depending on students' interests.

11. *EGM 3500 Dynamics*: Undergraduate junior level. Fall 1996.

COLLEGE and DEPARTMENT COMMITTEES

- College Minority Affairs Committee, 1999-2000.
- Editor of the department newsletter *The Streamline*, since Spring 1996.
- College Teaching Improvement Program selection committee, Fall 1996.
- Library Services Committee (Coll.), since August 1991.
- Mathematics and Science Committee (Coll.), since July 1990.
- Graduate Policy and Curriculum Committee (Dept.), since August 1988.
- Graduate Admission Committee; Fellowship matters (Dept.), since August 1988.
- Computing Committee (Dept.), since August 1988.
- Faculty Search Committees: 1990-1991, 1993-1994.

OTHER ACTIVITIES

A. International:

- Established a Cooperative Agreement between the University of Technology, Hanoi, Vietnam, and University of Florida, 1999.
- Invited to present a paper at the Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach-Walke, Germany, 16-22 Aug 1998.
- Proposal reviewer for the Australia Research Council, 1998.
- Member of the Technical Program Committee for the Japan-US-Vietnam workshop on “Research and Education in Systems, Computation, and Control Engineering,” Hanoi, Vietnam, 13-15 May 1998. Keynote speaker. The US delegation was funded by NSF.
- External Examiner for Ph.D. dissertation for Mechanical Engineering, The University of Queensland, Brisbane, Australia, 1995.
- Member of the Technical Program Committee of the CSME (Canadian Society of Mechanical Engineering) FORUM 1992 “TRANSPORT 1992+,” Concordia University, Montréal, Canada, 1-5 June 1992; organized and chaired the session on “Dynamics of High-Speed Vehicles.”
- Proposal reviewer for The Basic Research Foundation, ISRAEL ACADEMY of SCIENCES and HUMANITIES, 1991.

B. National and local:

- Organized and chaired the *Structural Dynamics* Symposium at the 13th US National Congress on Theoretical and Applied Mechanics, University of Florida, Gainesville, 21-26 Jun 1998.

- Organized and chaired the Symposium *Mechanics of Granular Materials*, ASME / ASCE / SES Summer Meeting, Northwestern University, Evanston, IL, 29 Jun - 2 Jul 1997.
- Member of the ASME Dynamics of Structures and Systems Committee, 1995-1997.
- *Participating Guest* at the LAWRENCE LIVERMORE NATIONAL LABORATORY; Mathematics and Computing Science Division; host: Dr. L.R. Petzold (now at the University of Minnesota), 1989-1990.
- Negotiated for computing equipment and set up the *Computational Laboratory for Electromagnetics and Solid Mechanics* (CLESM), AeMES, U. of Florida, since 1990. Equipment: Cluster of 1 DEC 5000, 6 DEC 2100 workstations and peripherals worth about \$145,000.

INDUSTRY EXPERIENCE

- *Consultant*, CENTRE TECHNIQUE des INDUSTRIES MECANIQUES, Senlis, France, Aug 1982. Implemented a node resequencing algorithm with constraint in CASTOR.SD. Assisted in buckling analysis of a mechanical crane using a code developed while at CETIM in 1981.
- *Development Engineer*, CENTRE TECHNIQUE des INDUSTRIES MECANIQUES, Senlis, France, Oct 1979 - Aug 1981. Developed FEM programs for nuclear engineering applications. Coordinated the implementation of fluid-structure interaction analysis capability, and the coupled BIEM and FEM procedure. Developed dynamic analysis capability, buckling analysis capability, post-processor for evaluation of reactions using Shock Response Spectrum method, interfaces for data preparation for the code CASTOR.SD.
- *Junior Engineer*, ENGINEERING SYSTEM INTERNATIONAL, Rungis, France, Jun - Sep 1979. Performed nonlinear analyses to investigate the stability of a deep off-shore well bored in alternative layers of sands and limestones. Worked with PAM-AX3D, an axisymmetric nonlinear FEM code.
- *Trainee Engineer*, ENGINEERING SYSTEM INTERNATIONAL, Rungis, France, Jun - Sep 1978. Assisted in qualifying nonlinear FEM codes.

PROFESSIONAL SOCIETIES

- American Society of Mechanical Engineers (ASME); Grade: Member.
- American Society for Engineering Education (ASEE).
- U.S. Association for Computational Mechanics (USACM).