

# CURRICULUM VITAE

**Costas Papadimitriou**  
(January 2008)

**Current Position:** Professor & Director of System Dynamics Lab, Department of Mechanical and Industrial Engineering, School of Engineering, University of Thessaly, Pedion Areos, 383 34 Volos, Greece. Tel: +30 24210 74006, Fax: +30 34210 74012, E-mail: [costasp@uth.gr](mailto:costasp@uth.gr), Website: <http://www.mie.uth.gr/labs/sdl/>

## EDUCATION

1990 **Ph.D.** in Applied Mechanics, California Institute of Technology, Pasadena, USA  
1985 **M.Sc.** in Applied Mechanics, California Institute of Technology, Pasadena, USA  
1984 **Diploma** in Mechanical Engineering, University of Patras, Greece

## PROFESSIONAL EXPERIENCE

Professor	Dept. of Mechanical and Industrial Engineering <i>University of Thessaly, Greece</i>	May 2005 – Present
Associate Professor	Dept. of Mechanical and Industrial Engineering <i>University of Thessaly, Greece</i>	Jan. 2000 – May 2005
Visiting Professor	Centre of Excellence for Advanced Materials and Structures, <i>Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw</i>	Jan. – Febr 2003 (1 month)
Instructor	Dept. of Mechanical and Industrial Engineering <i>University of Thessaly, Greece</i>	March 1999 – Dec. 1999
Senior Research Engineer	Division of Engineering & Applied Science <i>California Institute of Technology, USA</i>	Oct. 1998 – Feb. 1999
	Greek Military Service (Compulsory) <i>Kalamata, Greece</i>	June 1998 – Sept. 1998
Instructor in Civil Engineering	Division of Engineering & Applied Science <i>California Institute of Technology, USA</i>	Aug. 1996 – May 1998
Researcher	Jet Propulsion Laboratory (JPL) <i>California Institute of Technology, USA</i>	Aug. 1996 – May 1998
Visiting Scholar	Department of Civil and Structural Engineering <i>The Hong Kong University of Science and Technology (HKUST), Hong Kong</i>	Oct. 1995 – July 1996
Visiting Assistant Professor	Division of Engineering & Applied Science <i>California Institute of Technology, USA</i>	June 1994 – Sept. 1995
Assistant Professor	Department of Civil Engineering <i>Texas A&amp;M University, USA</i> (on leave to Caltech and HKUST, June 1994 - Dec 1995)	Jan. 1991 – Dec. 1995
Research Associate	Division of Engineering & Applied Science <i>California Institute of Technology, USA</i>	Oct. 1990 – Dec. 1990

Teaching/Research Assistant	Division of Engineering & Applied Science <i>California Institute of Technology</i> , USA	Oct. 1984 – Sept. 1990
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#### **ADMINISTRATIVE POSITIONS**

- Director of System Dynamics Laboratory, Department of Mechanical and Industrial Engineering, School of Engineering, University of Thessaly, Greece (2001 – present)
- Chairman, Department of Mechanical and Industrial Engineering, School of Engineering, University of Thessaly, Greece (Sept. 2003 – August 2005)
- Vice-Chairman, Department of Mechanical and Industrial Engineering, School of Engineering, University of Thessaly, Greece (Sept. 2001 – August 2003)
- Director of the Graduate Studies, Department of Mechanical and Industrial Engineering, School of Engineering, University of Thessaly, Greece (Sept. 2001 – 2005)
- Co-ordinator of the Division of Mechanics, Materials and Manufacturing Processes, Department of Mechanical and Industrial Engineering, School of Engineering, University of Thessaly, Greece (Sept. 2000 – 2003, 2007- Present)
- Member of the Committee for the Financial Growth of the University of Thessaly (2005 – present)
- Member of the Research Committee of the University of Thessaly (2002 – 2005)
- Chairman of the Committee for the Re-structuring of the University of Thessaly Administration Services (2004-2005)
- Member of the Committee for Academic and Student Affairs, Department of Mechanical and Industrial Engineering, (1999 – 2003)

#### **RESEARCH INTERESTS**

- Dynamics and Vibrations of Structural & Mechanical Systems
- Probabilistic Structural Dynamics, Structural Reliability, Computational Stochastic Dynamics / Mechanics
- System Identification, Inverse Problems in Mechanics, Structural Health Monitoring, Fault Diagnosis, Optimal Sensor Location Methods
- Design Optimization under Stochastic Load and Structural Uncertainty, Reliability-Based Design Optimization, Robust Design Optimization, Reliability-Based Structural Control
- Multi-Objective Optimization, Genetic Algorithms and Evolutionary Strategies for Design Optimization and Inverse Problems
- Applications to Earthquake Engineering and Vehicle Dynamics

#### **PUBLICATIONS**

##### **Book Chapters**

1. **Papadimitriou, C.** and Katafygiotis, L.S. (2004). "Bayesian Modeling and Updating." In *Engineering Design Reliability Handbook*, E. Nikolaidis, D.M. Ghiocel and S. Singhal (Eds), CRC Press.

##### **Refereed Journal Publications**

1. Ntotsios, E., Karakostas, Ch., Lekidis, V., Panetsos, P., Nikolaou, G. and **Papadimitriou, C.** "Structural Identification of Egnatia Odos Bridges based on Ambient and Earthquake Induced Vibrations." *Bulletin of Earthquake Engineering*, submitted for publication.

2. Ntotsios, E., **Papadimitriou, C.**, Panetsos, P., Karaiskos, G., Perros, K. and Perdikaris, Ph. "Bridge Health Monitoring System based on Vibration Measurements." *Bulletin of Earthquake Engineering*, submitted for publication.
3. Christodoulou, K., Ntotsios, E., **Papadimitriou, C.** and Panetsos, P. "Structural Model Updating and Prediction Variability using Pareto Optimal Models." *Computer Methods in Applied Mechanics and Engineering*, submitted for publication.
4. Christodoulou, K. and Papadimitriou, C. (2007). "Structural Identification Based on Optimally Weighted Modal Residuals." *Mechanical Systems and Signal Processing*, 21, 4-23.
5. Haralampidis, Y., **Papadimitriou, C.** and Pavlidou, M. (2005). "Multi-Objective Framework for Structural Model Identification." *Earthquake Engineering and Structural Dynamics*, 34, 665-685.
6. Verros, G., Natsiavas, S. and **Papadimitriou, C.** (2005). "Design Optimization of Quarter Car Models with Passive and Semi-Active Suspensions under Random Road Excitation." *Journal of Vibrations and Control*, 11(5), 581-606.
7. **Papadimitriou, C.**, Haralampidis, G. and K. Sobczyk (2005). "Optimal Experimental Design in Stochastic Structural Dynamics." *Probabilistic Engineering Mechanics*, 20, 67-78.
8. **Papadimitriou, C.** (2005). "Pareto Optimal Sensor Locations for Structural Identification." *Computer Methods in Applied Mechanics and Engineering*, 194(12-16), 1655-1673.
9. **Papadimitriou, C.** (2004). "Optimal Sensor Placement Methodology for Parametric Identification of Structural Systems." *Journal of Sound and Vibration*, 278(4), 923-947.
10. Poulakis, Z., Valougeorgis, D. and **Papadimitriou, C.** (2003). "Leakage Detection in Water Pipe Networks Using a Bayesian Probabilistic Framework", *Probabilistic Engineering Mechanics*, 18(4), 315-327.
11. Pontikakis, G., **Papadimitriou, C.** and Stamatelos, A. (2003). "Kinetic Parameter Estimation by Standard Optimization Methods in Catalytic Converter Modeling." *Chemical Engineering Communications*, 191(11), 1473-1501.
12. Metallidis, P., Verros, G., Natsiavas, S. and **Papadimitriou, C.** (2002). "Identification, Fault Detection and Optimal Sensor Location in Vehicle Suspensions." *Journal of Vibration and Control*, 9(3-4), 337-359.
13. Yuen, K.V., Katafygiotis, L.S., **Papadimitriou, C.** and Mickleborough, N.C. (2001). "Optimal Sensor Placement Methodology for Identification with Unmeasured Excitation." *Journal of Dynamic Systems, Measurement and Control*, 123(4), 677-686.
14. **Papadimitriou, C.** and Katafygiotis, L.S. (2001). "A Bayesian Methodology for Structural Integrity and Reliability Assessment." *International Journal of Advanced Manufacturing Systems*, 4(1), 93-100.
15. **Papadimitriou, C.** Beck, J.L. and Katafygiotis, L.S. (2001). "Updating Robust Reliability Using Structural Test Data." *Probabilistic Engineering Mechanics*, 16(2), 103-113.
16. **Papadimitriou, C.**, Beck, J.L. and Au, S.K. (2000). "Entropy-Based Optimal Sensor Location for Structural Model Updating." *Journal of Vibration and Control*, 6(5), 781-800.
17. Lutes, L.D. and **Papadimitriou C.** (2000). "Direct Derivation of Response Moment and Cumulant Equations for Non-linear Stochastic Problems." *International Journal of Non-Linear Mechanics*, 35, 817-835.

18. Polidori, D., Beck, J.L. and **Papadimitriou, C.** (2000). "A New Stationary PDF Approximation for Nonlinear Oscillators." *International Journal of Nonlinear Mechanics*, **35**, 657-673.
19. Katafygiotis, L.S., Lam, H.F. and **Papadimitriou C.** (2000). Treatment of Unidentifiability in Structural Model Updating." *Advances in Structural Engineering - An International Journal*, **3**(1), 19-39.
20. Au, S.K., **Papadimitriou, C.** and Beck, J.L. (1999). "Reliability of Uncertain Dynamical Systems with Multiple Design Points." *Structural Safety*, **21**, 113-133.
21. **Papadimitriou, C.**, Katafygiotis, L.S. and Beck J.L. (1999). "Asymptotic 2p-Moment Stability of Stochastic Linear Systems." *Mechanics Research Communications*, **26**(1), 21-29.
22. Polidori, D., Beck, J.L. and **Papadimitriou, C.** (1999). "New Approximations for Reliability Integrals." *Journal of Engineering Mechanics (ASCE)*, **125**(4), 466-475.
23. Beck, J.L., Chan, E. and Irfanoglu A., **Papadimitriou, C.** (1999). "Multi-Criteria Optimal Structural Design Under Uncertainty." *Earthquake Engineering and Structural Dynamics*, **28**, 741-761.
24. **Papadimitriou, C.**, Katafygiotis, L.S. and Lutes, L.D. (1999). "Response Cumulants of Nonlinear Systems Subject to External and Multiplicative Excitations." *Probabilistic Engineering Mechanics*, **14**(1-2), 149-160.
25. Katafygiotis, L.S., **Papadimitriou, C.** and Lam H.F. (1998). "A Probabilistic Approach to Structural Model Updating." *International Journal of Soil Dynamics and Earthquake Engineering*, **17**(7-8), 495-507.
26. **Papadimitriou, C.**, Beck J.L. and Katafygiotis, L.S. (1997). "Asymptotic Expansions for Reliability and Moments of Uncertain Systems." *Journal of Engineering Mechanics, ASCE*, **123**(12), 1219-1229.
27. **Papadimitriou, C.**, Katafygiotis, L.S. and Au, S.K. (1997). "Effects of Structural Uncertainties on TMD Design: A Reliability-Based Approach." *Journal of Structural Control*, **4**(1), 65-88.
28. Katafygiotis, L.S., **Papadimitriou, C.** and Tsarkov, Y. (1997). "Mean-Square Stability of Linear Dynamical Systems with Small Bounded Stochastic Perturbations of their Coefficients." *Mechanics Research Communications*, **24**(3), 231-236.
29. Katafygiotis, L.S., **Papadimitriou, C.** and Tsarkov, Y. (1997). "Mean-Square Stability of Linear Stochastic Dynamical Systems Under Parametric Wide-Band Excitations." *Probabilistic Engineering Mechanics*, **12**(3), 137-147.
30. Katafygiotis, L.S., Malyarenko, A.A. and **Papadimitriou C.** (1996). "Approximation of Homogeneous Gaussian Random Fields with the Help of Cubature Formulas." *Theory of Stochastic Processes*, **2**(18), 60-66.
31. Katafygiotis, L.S. and **Papadimitriou, C.** (1996). "Dynamic Response Variability of Structures with Uncertain Properties." *Earthquake Engineering and Structural Dynamics*, **25**(8), 775-793.
32. **Papadimitriou, C.** and Lutes, L.D. (1996). "Stochastic Cumulant Analysis of MDOF Systems with Polynomial-Type Nonlinearities." *Probabilistic Engineering Mechanics*, **11**(1), 1-13.

33. **Papadimitriou, C.**, Katafygiotis, L.S. and Beck, J.L. (1995). "Approximate Analysis of Response Variability of Uncertain Linear Systems." *Probabilistic Engineering Mechanics*, **10**(4), 251-264.
34. **Papadimitriou, C.** (1995). "Stochastic Response Cumulants of MDOF Linear Systems." *Journal of Engineering Mechanics, ASCE*, **121** (11), 1181-1192.
35. **Papadimitriou, C.** and Beck, J.L. (1994). "Approximate Random Vibration Analysis of Classically Damped MDOF Systems." *Journal of Engineering Mechanics, ASCE*, **120**(1), 75-96.
36. **Papadimitriou, C.** and Lutes, L.D. (1994). "Approximate Analysis of Higher Cumulants for MDF Random Vibration." *Probabilistic Engineering Mechanics*, **9**(1-2), 71-82.
37. Beck, J.L. and **Papadimitriou, C.** (1993). "Moving Resonance in Nonlinear Response to Fully Nonstationary Stochastic Ground Motion." *Probabilistic Engineering Mechanics*, **8**(3-4), 157-167.

#### **Other Refereed Publications**

1. Breitung, K.W., Polidori, D., Beck, J.L. and **Papadimitriou, C.** (2001). Discussion of the Paper "New Approximations for Reliability Integrals." *Journal of Engineering Mechanics (ASCE)*, **127**(2), 207-209.
2. Beck, J.L., Chan, E. and Irfanoglu A., **Papadimitriou, C.** (2000). Authors' Reply to Discussion of the Paper "Multi-Criteria Optimal Structural Design Under Uncertainty." *Earthquake Engineering and Structural Dynamics*, **29**(6), 901.
3. **Papadimitriou, C.** (1993). "Structural Dynamics - Recent Advances" by G.I. Schueller, Book Review, *Journal of Engineering Mechanics, ASCE*, **119**(7), 1505-1506.

#### **Conference Publications**

1. Gaitanaros, S., Karaiskos, G., **Papadimitriou, C.** and Aravas, N. (2007). "Crack Identification in Structures using Optimal Experimental Design." *Proc. 6<sup>th</sup> International Workshop on Structural Health Monitoring*, Fu Ko Chang (Ed), DEStech Publications, pp. 653-661.
2. Ntotsios, E., Christodoulou, K. and **Papadimitriou, C.** (2007). "Pareto Optimal Structural Models and Predictions Consistent with Data and Modal Residuals." *Proc. of the 21th Biennial ASME Conference on Mechanical Vibration and Noise*, Las Vegas, Nevada, September 4-7, Paper No. DETC2007/VIB-35197, 8 pages.
3. Ntotsios, E., Christodoulou, K. and **Papadimitriou, C.** (2007). "Multi-Objective Framework for Structural Modeling Consistent with Data." *ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, M. Papadrakakis, D.C. Charmpis, N.D. Lagaros, Y. Tsompanakis (eds.), Rethymno, Crete, Greece, 13-16 June 2007.
4. Perros, K., **Papadimitriou, C.**, Karamanos, S. and Panetsos, P. (2007). "Response and Reliability of Nonlinear Systems with Impact Subjected to Transient Excitations." *ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, M. Papadrakakis, D.C. Charmpis, N.D. Lagaros, Y. Tsompanakis (eds.), Rethymno, Crete, Greece, 13-16 June 2007.
5. **Papadimitriou, C.**, Ntotsios, E., Christodoulou, K., Karamanos, S., Panetsos, P., Karakostas, Ch. and Lekidis, V. (2007). "Bridge Monitoring System based on Vibration Measurements." *ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and*

- Earthquake Engineering*, M. Papadrakakis, D.C. Charnpis, N.D. Lagaros, Y. Tsompanakis (eds.), Rethymno, Crete, Greece, 13-16 June 2007.
6. Ntotsios, E., Christodoulou, K. and **Papadimitriou, C.** (2007). "Multi-Objective Framework for Structural Modeling Consistent with Data." *ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, M. Papadrakakis, D.C. Charnpis, N.D. Lagaros, Y. Tsompanakis (eds.), Rethymno, Crete, Greece, 13-16 June 2007.
  7. Lam, H.F., Ntotsios, E., **Papadimitriou, C.** (2007). "Optimal Experimental Design for Structural Health Monitoring Applications." *World Forum on Smart Material and Smart Structures Technology*, Chongqing and Nanjing, China, 22-27 May 2007, in press.
  8. Ntotsios, E., Christodoulou, K., **Papadimitriou, C.** (2006). "Optimal Experimental Design in Structural Dynamics." *5<sup>th</sup> International Conference on Computational Stochastic Mechanics*, Rhodes, Greece, in press.
  9. Ntotsios, E., Christodoulou, K., **Papadimitriou, C.** (2006). "Optimal Sensor Location Methodology for Structural Identification and Damage Detection." *Proc. 3<sup>rd</sup> European Workshop on Structural Health Monitoring*, Alfredo Guemes (Ed), DEStech Publications, pp. 1160-1167.
  10. Panetsos, P., Lambropoulos, S., **Papadimitriou, C.**, Karamanos, S., Lekidis, V. and Karakostas, C. (2006). "Bridge Health Monitoring for Egnatia Odos Bridge Management System." *Proc. 3<sup>rd</sup> European Workshop on Structural Health Monitoring*, Alfredo Guemes (Ed), DEStech Publications, pp. 356-363.
  11. Christodoulou, K., **Papadimitriou, C.** (2005). "Multi-Objective Framework for Structural Identification." *International Conference of Structural Safety and Reliability (ICOSSAR'05)*, G. Augusti, G.I. Schueller, M. Ciampoli (Eds), Millpress, Rotterdam, pp. 2673-2680.
  12. Vamvatsikos, D., K., **Papadimitriou, C.** (2005). "Optimal Multi-Objective Design of a Highway Bridge under Seismic Loading through Incremental Dynamic Analysis." *International Conference of Structural Safety and Reliability (ICOSSAR'05)*, G. Augusti, G.I. Schueller, M. Ciampoli (Eds), Millpress, Rotterdam, pp. 329-336.
  13. **Papadimitriou, C.** and Christodoulou, K. (2005). "Bayesian Model Selection and Updating Applied to Structural Damage Identification." *International Conference of Structural Safety and Reliability (ICOSSAR'05)*, G. Augusti, G.I. Schueller, M. Ciampoli (Eds), Millpress, Rotterdam, pp. 2575-2582.
  14. Ntotsios, E. and **Papadimitriou, C.** (2005). "Robust Reliability-Based Optimization of Uncertain Structures Subjected to Stochastic Loads." *Proc. 6<sup>th</sup> International Conference on Structural Dynamics (EURODYN'05)*, C. Soize and G.I. Schueller (Eds), Paris, pp. 735-739.
  15. Christodoulou, K. and **Papadimitriou, C.** (2005). "Structural Model Identification Using a Multi-Objective Framework." *Proc. 6<sup>th</sup> International Conference on Structural Dynamics (EURODYN'05)*, C. Soize and G.I. Schueller (Eds), Paris, pp. 1887-1892.
  16. **Papadimitriou, C.** and K. Christodoulou (2005). "A Bayesian Methodology for Estimating Optimal Weights and Optimal Structural Models Using Weighted Modal Residuals." *Proc. 5<sup>th</sup> International Workshop on Structural Health Monitoring*, Fu Ko Chang (Ed), DEStech Publications, pp. 590-597.
  17. Christodoulou, K. and **Papadimitriou, C.** (2005). "A Bayesian Identification Methodology for Selection among Pareto Optimal Structural Models Using Modal Residuals." *Proc. of the 20th*

- Biennial ASME Conference on Mechanical Vibration and Noise*, Long Beach, California, September 24-28, Paper No. DETC2005-85300, 8 pages.
18. **Papadimitriou, C.** (2004). "Bayesian Inference Applied to Structural Model Updating and Damage Detection." *9th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability*, Albuquerque, New Mexico.
  19. **Papadimitriou, C.** and Ntotsios, E. (2004). "Robust Reliability-Based Optimization in Structural Dynamics Using Evolutionary Algorithms." *9th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability*, Albuquerque, New Mexico.
  20. **Papadimitriou, C.** (2004). "Bayesian Inference Applied to Structural Damage Detection." *Proc. 2<sup>nd</sup> European Workshop on Structural Health Monitoring*, C. Boller and W.J. Staszewski (Eds), DEStech Publications, pp. 575-582.
  21. **Papadimitriou, C.** Karamanos, S.A., Karakostas, C.Z., Lekidis, V.A. and Panetsos, P. (2004). "Multi-Objective Framework for Model Updating with Application to a Four-Span Concrete Bridge." *Proc. 2<sup>nd</sup> European Workshop on Structural Health Monitoring*, C. Boller and W.J. Staszewski (Eds), DEStech Publications, pp. 195-202.
  22. Metallidis, P., Verros, G., Natsiavas, S. and **Papadimitriou, C.** (2004). Parametric Identification and Fault Detection in Vehicle Suspensions." *Proc. 2<sup>nd</sup> European Workshop on Structural Health Monitoring*, C. Boller and W.J. Staszewski (Eds), DEStech Publications, pp. 565-572.
  23. Haralampidis, Y., Pavlidou, M. and **Papadimitriou, C.** (2003). "Multi-Objective Parameter Identification in Structural Dynamics." *Proc. of the 19th Biennial ASME Conference on Mechanical Vibration and Noise*, Chicago, Illinois, September 2-6, Paper No. DETC2003/VIB-48493.
  24. Karakostas, C.Z., Lekidis, V.A., **Papadimitriou, K.** (2003). "Seismic Response of instrumented R/C Buildings during the Athens (7-9-99) Aftershock Sequence." *Proceedings of the fib-Symposium on Concrete Structures in Seismic Regions (FIB2003)*, Athens, May 6-9, 2003, (CD-ROM).
  25. Καρακώστας Χ.Ζ., Λεκίδης, Β.Α., **Παπαδημητρίου Κ.**, Παυλίδου Μ., Ιγνατάκης Γ. & Δουδούμης Ν. "Σεισμική συμπεριφορά ενοργανωμένων κτιρίων Ο/Σ κατά τη μετασεισμική ακολουθία του σεισμού της Αθήνας." *14<sup>ο</sup> Εθνικό Συνέδριο Σκυροδέματος*, Κως, 15-17 Οκτωβρίου 2003.
  26. Λεκίδης, Β.Α., Καρακώστας Χ.Ζ., Σαλονικιός, Θ., **Παπαδημητρίου Κ.** & Καραμάνος, Σ. "Παρακολούθηση της σεισμικής συμπεριφοράς χαρακτηριστικών γεφυρών Ο/Σ του Ελληνικού χώρου." *14<sup>ο</sup> Εθνικό Συνέδριο Σκυροδέματος*, Κως, 15-17 Οκτωβρίου 2003.
  27. Karakostas, C.Z., Lekidis, V.A., **Papadimitriou, C.**, Karamanos, S. Pavlidou, M. (2003). "System Identification and Analytical Investigation of the Dynamic Response of Instrumented Civil Engineering Structures." *4<sup>th</sup> Int. Conf. On Earthquake Resistant Engineering Structures*, Ancona, Italy.
  28. **Papadimitriou, C.** (2002). "Optimal Instrumentation Strategies for Structural Identification." *Proc. 4<sup>th</sup> Int. Conf. On Computational Stochastic Mechanics*, P.D. Spanos and G. Deodatis (Eds), Millpress, pp. 463-472.

29. Aichouh, P. Theodosiou, C. Natsiavas, S. **Papadimitriou, C.** (2002). "Base Isolation of Unanchored Fluid-filled Tanks to Seismic Excitation." *Proc. 4<sup>th</sup> Int. Conf. On Computational Stochastic Mechanics*, P.D. Spanos and G. Deodatis (Eds), Millpress, pp. 627-634.
30. Aichouh, P. Theodosiou, C. Natsiavas, S. **Papadimitriou, C.** (2002). "Reliability Analysis of Unanchored Fluid-filled Tanks Subjected to Earthquake Excitation." *4<sup>th</sup> GRACM Congress on Computational Mechanics*, Patras, Greece.
31. **Papadimitriou, C.**, Pavlidou, M., Christodoulou, K. and Karamanos, S.A. (2002). "Optimal Sensor Optimal Sensor Configuration Methodology for Structural Identification." *Proc. 1<sup>st</sup> European Workshop on Structural Health Monitoring*, D.L. Balageas (Ed), DESteck Publications, pp. 153-160.
32. Pavlidou, M., Christodoulou, K., Karamanos, S.A. **Papadimitriou, C.**, Perdikaris, P.C., Lekidis, V.A. and Karakostas, C.Z. (2002). "Model Updating of Bridges Using Vibration Measurements." *Proc. 1<sup>st</sup> European Workshop on Structural Health Monitoring*, D.L. Balageas (Ed), DESteck Publications, pp. 1107-1114.
33. Metallidis, P., Verros, G., Natsiavas, S. and **Papadimitriou, C.** (2002). " Identification and Fault Detection of Systems with Piecewise Linear Characteristics." *Proc. 1<sup>st</sup> European Workshop on Structural Health Monitoring*, D.L. Balageas (Ed), DESteck Publications, pp. 211-218.
34. **Papadimitriou, C.** (2002). "Applications of Genetic Algorithms in Structural Health Monitoring." *Proc. 5<sup>th</sup> World Congress on Computational Mechanics*, Vienna, Austria.
35. Karakostas, C.Z., Lekidis, V.A., Pavlidou, M. and **Papadimitriou, C.** (2002). "Analytical and Experimental Investigation of the Dynamic Behaviour of R/C Buildings during the Athens (7-9-99) Aftershock Sequence." *Proc. 12<sup>th</sup> European Conference on Earthquake Engineering*, Paper Reference 270.
36. Καρακώστας, Χ., Λεκίδης, Β., Παυλίδου Μ. and **Παπαδημητρίου, Κ.** (2001) "Σεισμική συμπεριφορά κατασκευών Ο/Σ κατά τη μετασεισμική ακολουθία του σεισμού της Αθήνας (7-9-99) – Αναλυτική και πειραματική διερεύνηση ", *2<sup>ο</sup> Πανελλήνιο Συνέδριο Αντισεισμικής Μηχανικής και Τεχνικής Σεισμολογίας*, Θεσσαλονίκη, 27-30 Νοεμβρίου, 2001.
37. Poulakis, Z. Valougeorgis, D., **Papadimitriou, C.** (2001). "Leakage Detection in Pipe Networks via an Optimal Sensor Location Strategy." *Proc. of the First National Conference of Recent Advances in Mechanical Engineering*, (ASME International – Greek Section), Paper No. ANG1/P043.
38. **Papadimitriou, C.**, Christodoulou, K., Pavlidou, M., Karamanos, S.A. (2001). "Optimal Sensor and Actuator Configuration for Structural Identification." *Proc. of the 18th Biennial ASME Conference on Mechanical Vibration and Noise*, Pittsburgh, Pennsylvania, September 9-13, Paper No. DETC2001/VIB21399.
39. Metallidis, P., Verros, G., Natsiavas, S. and **Papadimitriou, C.** (2001). "Parametric Identification and Fault Detection in Vehicle Models with Nonlinear Suspensions." *Proc. of the 18th Biennial ASME Conference on Mechanical Vibration and Noise*, Pittsburgh, Pennsylvania, September 9-13, Paper No. DETC2001/VIB21411.
40. Metallidis, P., Verros, G., Natsiavas, S. and **Papadimitriou, C.** (2001). "Vehicle Dynamics and Fault Detection in Vehicle Suspensions." *Proc. of 8th International Conference on Structural Safety and Reliability (ICOSSAR'01)*, Newport Beach, California, June 17-22.

41. Poulakis, Z. Valougeorgis, D. and **Papadimitriou, C.** (2001). "Health Monitoring of Pipe Networks Using a Probabilistic Framework." *Proc. of 8th International Conference on Structural Safety and Reliability (ICOSSAR'01)*, Newport Beach, California, June 17-22.
42. **Papadimitriou, C.** (2000). "Optimal Instrumentation Strategies for Structural Health Monitoring." *14<sup>th</sup> Engineering Mechanics Conference, ASCE*, J. Tassoulas (Ed.), Austin, Texas.
43. **Papadimitriou, C.**, Katafygiotis, L.S. and Karamanos, S.A. (2000). "Optimal Sensor Placement Strategies for Structural Damage Identification." *Proc. 8<sup>th</sup> ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability*, University of Notre Dame, Notre Dame, Indiana. CD-ROM Proceedings (Kareem, Haldar, Spencer, and Johnson, eds.), paper PMC2000-276, 8 pages.
44. Valougeorgis, D., Poulakis, Z. and **Papadimitriou, C.** (2000). "Cost Optimization of Piping Systems." *Proc. 5<sup>th</sup> Conf of Protection and Restoration of the Environment*, Thassos, Greece.
45. Karamanos S.A. and **Papadimitriou C.** (2000). "Sensitivity of Inelastic Tube Collapse on Initial Imperfections: A Probabilistic Approach." *Proc. 4<sup>th</sup> Int. Colloquium on Computational Methods for Shell & Spatial Structures*, Chania – Krete, Greece.
46. Katafygiotis, L.S. and **Papadimitriou C.** (2000). "Bayesian Methodology for Updating Structural Reliability Based on Health Monitoring Data." *Proc. 4<sup>th</sup> Int. Colloquium on Computational Methods for Shell & Spatial Structures*, Chania – Krete, Greece.
47. **Papadimitriou, C.**, Katafygiotis, L.S. and Yuen, K.-V. (1999) "Optimal Instrumentation Strategies for Structural Health Monitoring Applications." *Proc. 2<sup>nd</sup> International Workshop on Structural Health Monitoring*, F-K. Chang (Ed), Technomic Publishing Co., Inc., pp. 543-552.
48. Beck, J.L., Irfanoglu, A., **Papadimitriou, C.** and Au, S.K. (2000). "A Performance-Based Optimal Design Methodology incorporating Multiple Criteria." *Proc. 12<sup>th</sup> World Conference on Earthquake Engineering*, New Zealand.
49. Beck, J.L., **Papadimitriou, C.** and Katafygiotis, L.S. (1999). "Updating Robust Reliability for Bridges Using Measured Vibration Data." *ICASP'99*, Australia.
50. Katafygiotis, L.S., **Papadimitriou, C.**, and Yuen, K. (1999). "An Optimal Sensor Location Methodology for Designing Modal Experiments." *Proc. 4<sup>th</sup> International Conference of the European Association for Structural Dynamics (EURODYN'99)*, Prague.
51. Lutes, L.D. and **Papadimitriou C.** (1999). "Finding Response Cumulants for Nonlinear Systems with Multiplicative Excitations." *IUTAM Symposium on Nonlinearity and Stochastic Structural Dynamics*, Madras, India.
52. Katafygiotis, L.S., Beck, J.L. and **Papadimitriou, C.** (1998). "Updating Structural Reliability Based on Dynamic Test Data." *Proc. 11<sup>th</sup> European Conference on Earthquake Engineering*, Balkema Publishers, Rotterdam, The Netherlands.
53. Beck, J.L. Irfanoglu, A., Chan, E. and **Papadimitriou, C.** (1998). "Performance-Based Optimal Design Under Seismic Risk." *Proc. 11<sup>th</sup> European Conference on Earthquake Engineering*, Balkema Publishers, Rotterdam, The Netherlands.
54. Au, S.K., **Papadimitriou, C.** and Beck, J.L. (1998). "Treatment of Multiple Design Points in Reliability Methods." *Proc. 4<sup>th</sup> International Conference on Stochastic Structural Dynamics*, Notre Dame, Indiana.

55. Beck, J.L. and **Papadimitriou, C.** (1998). "Improving Response and Reliability Predictions Using Measured Data." *Proc. 4<sup>th</sup> International Conference on Stochastic Structural Dynamics*, Notre Dame, Indiana.
56. Beck, J.L., **Papadimitriou, C.** and Katafygiotis, L.S. (1998). "A Bayesian Statistical Approach for Improving Structural Reliability Using Measured Data." *Proc. 3<sup>rd</sup> International Conference on Computational Stochastic Mechanics*, Santorini, Greece.
57. Beck, J.L., Katafygiotis, L.S., **Papadimitriou, C.** (1998). "A Probabilistic System Identification Methodology for Structural Reliability Predictions." *Proc. 12<sup>th</sup> Engineering Mechanics Conference (ASCE)*, La Jolla, California.
58. Beck, J.L., **Papadimitriou, C.**, Au, S.K. and Vanik, M.W. "Entropy-Based Optimal Sensor Location for Structural Damage Detection." *5<sup>th</sup> Annual Int. Symposium on Smart Structures and Materials - Smart Systems for Bridges, Structures and Highways*, S.C. Liu (Ed), pp. 161-172.
59. **Papadimitriou, C.**, Levine-West, M. and Milman, M. (1998). "Application of a Finite Element Model Updating Methodology on the IPEX-II Structure." *Proc. 16<sup>th</sup> International Modal Analysis Conference*, Santa Barbara, California, pp. 952-958.
60. Beck, J.L., Chan, E. and **Papadimitriou, C.** (1998). "Statistical Methodology for Optimal Sensor Locations for Damage Detection in Structures." *Proc. 16<sup>th</sup> International Modal Analysis Conference*, Santa Barbara, California, pp. 349-355.
61. Beck, J.L., Irfanoglu, A., Chan, E. and **Papadimitriou, C.** (1998). "A Methodology for Performance-Based Optimal Structural Design." *12<sup>th</sup> Engineering Mechanics Conference (ASCE)*, La Jolla, California.
62. Beck, J.L., **Papadimitriou, C.** and Polidori, D. (1998). "Approximation of Probability Integrals with Applications to Reliability of Uncertain Dynamical Systems." *Proc. 12<sup>th</sup> Engineering Mechanics Conference (ASCE)*, La Jolla, California.
63. Katafygiotis, L.S., Au, S-K. and **Papadimitriou, C.** (1998). "A Spectral-Representation-Based Simulation of Gaussian Random Fields." *Proc. 12<sup>th</sup> Engineering Mechanics Conference (ASCE)*, La Jolla, California.
64. Katafygiotis, L.S., Lam, P. and **Papadimitriou, C.** (1997). "Probabilistic Model Updating Using Dynamic Data." *Proc. of 7th International Conference on Structural Safety and Reliability*, Shiraishi, Shinozuka & Wen (Eds), Balkema Publishers, Rotterdam, The Netherlands, pp. 603-610.
65. Katafygiotis, L.S., **Papadimitriou, C.** and Au, S-K (1997). "Optimal Control of Structures: A Reliability-Based Approach." *Proc. of 7th International Conference on Structural Safety and Reliability*, Shiraishi, Shinozuka & Wen (Eds), Balkema Publishers, Rotterdam, The Netherlands, pp. 999-1006.
66. Beck, J.L., Chan, E., Irfanoglu, A., **Papadimitriou, C.**, Masri, S.F., Smith, H.A. and Tsugawa, T. (1997). "A Methodology for Reliability-Based Optimal Structural Design." *Proc. of 7th International Conference on Structural Safety and Reliability*, Shiraishi, Shinozuka & Wen (Eds), Balkema Publishers, Rotterdam, The Netherlands, pp. 1113-1120.
67. Katafygiotis, L.S., **Papadimitriou, C.** and Tsarkov, Y. (1997). "On Stability of Linear Dynamical Systems with Small Markov Perturbations." *Proc. of 7th International Conference on*

- Structural Safety and Reliability*, Shiraishi, Shinozuka & Wen (Eds), Balkema Publishers, Rotterdam, The Netherlands, pp. 763-770.
68. **Papadimitriou, C.**, Levine-West, M. and Milman, M. (1997) "Structural Damage Detection Using Modal Test Data." *Proc. International Workshop on Structural Health Monitoring: Current Status and Perspectives*, F-K. Chang (Ed), Technomic Publishing Co., Inc., pp. 678-689.
  69. Katafygiotis, L.S., **Papadimitriou, C.** and Lam H.F. (1997). "A Probabilistic Approach to Structural System Identification." *Proc. of Eighth International Conference on Soil Dynamics and Earthquake Engineering*, A.S. Cakmak, M. Erdik and E. Durukal (Eds), pp. 198-199.
  70. Katafygiotis, L.S., Malyarenko, A.A. and **Papadimitriou, C.** (1997). "Simulation of Stochastic Fields Modeling Seismic Ground Motions." *Proc. of Eighth International Conference on Soil Dynamics and Earthquake Engineering*, A.S. Cakmak, M. Erdik and E. Durukal (Eds), pp. 20-21.
  71. **Papadimitriou, C.**, Levine-West, M. and Milman, M. (1997). "A Methodology for Finite Element Model Updating Using Modal Data." *Proc. of 11th VPI&SU Symposium on Structural Dynamics and Control*, Blacksburg, Virginia.
  72. Beck, J.L., **Papadimitriou, C.**, Chan, E. and Irfanoglu, A. (1996). "Reliability-Based Optimal Design Decisions in the Presence of Seismic Risk." *Proc. of Eleventh World Conference on Earthquake Engineering*, Elsevier Science Ltd., Paper No. 1058.
  73. **Papadimitriou, C.** and Katafygiotis, L.S. (1996). "Response Statistics and Reliability of Uncertain Nonlinear Systems Subjected to Random Loads. " *Proc. of Eleventh World Conference on Earthquake Engineering*, Elsevier Science Ltd., Paper No. 955.
  74. **Papadimitriou, C.**, Katafygiotis, L.S. and Lutes, L.D. (1996). "Response Cumulants of Nonlinear Systems Subject to External and Multiplicative Excitations." *Proc. of 7th ASCE Specialty Conf. on Probab. Mech. and Struct. Reliability*, D.M. Frangopol and M.D. Grigoriu (Eds), ASCE, NY, pp. 744-747.
  75. **Papadimitriou, C.**, Beck, J.L. and Katafygiotis, L.S. (1996). "Asymptotic Approximation of Reliability Integrals for Uncertain Systems." *Proc. of ASCE 7th Specialty Conf. on Probab. Mech. and Struct. Reliability*, D.M. Frangopol and M.D. Grigoriu (Eds), ASCE, NY, pp. 574-577.
  76. Lutes, L.D. and **Papadimitriou, C.** (1995). "Stochastic Response Cumulants for Nonlinear Systems." *Proc. of Third International Conference on Stochastic Structural Dynamics*, H. Davoodi and A. Saffar (eds), pp. 3.15-3.22.
  77. **Papadimitriou, C.** and Lutes, L.D. (1994). "On the Computation of Higher Response Cumulants of MDOF Structures." *Proc. of Second International Conference on Computational Stochastic Mechanics*, P.D. Spanos (Ed.), A.A. Balkema Publishers, Rotterdam, The Netherlands, pp. 387-394.
  78. **Papadimitriou, C.** and Beck, J.L. (1992). "Nonstationary Response Characteristics of Linear MDOF Systems." *Proc. of the Ninth Engineering Mechanics Conference*, ASCE, L.D. Lutes and J.M. Niedzwecki (Eds), ASCE, NY.

79. **Papadimitriou, C.**, Katafygiotis, L.S. and Wang, B. (1993). "Approximate Analysis of Response Statistics of Uncertain MDOF Linear Systems." *Proc. of 6th International Conference on Structural Safety and Reliability*, A.A. Balkema Publishers, Rotterdam, The Netherlands.
80. **Papadimitriou, C.** and Beck, J.L. (1992). "Stochastic Characterization of Ground Motion and Applications to Structural Response." *Proc. of Tenth World Conference on Earthquake Engineering*, Balkema/Rotterdam/Brookfield Publishers, Vol. 2, pp. 835-838.
81. **Papadimitriou, C.** Beck, J.L. (1991). "Approximate Analysis of Nonstationary Random Vibrations of MDOF Systems." *Computational Stochastic Mechanics*, P.D. Spanos and C.A. Brebbia (Ed.), Elsevier Science, New York, pp. 371-382.
82. **Papadimitriou, C.** and Beck, J.L. (1990) "Nonstationary Stochastic Characterization of Strong-Motion Accelerograms." *Proc. of Fourth U.S. Conference on Earthquake Engineering*, EERI, El Cerrito, California, Vol. I, pp. 477-486.

### **Research Reports**

1. Beck, J.L., **Papadimitriou, C.**, Chan, E. and Irfanoglu, A. (1997). "A Performance-Based Optimal Structural Design Methodology." Report No. EERL 97-03, California Institute of Technology, Pasadena, CA.
2. **Papadimitriou, C.**, Beck, J.L. and Katafygiotis, J.L. (1995). "Asymptotic Expansions for Reliability and Moments of Uncertain Dynamic Systems." Report No. EERL 95-05, California Institute of Technology, Pasadena, CA.
3. **Papadimitriou, C.** (1990). "Stochastic Characterization of Strong Ground Motion and Applications to Structural Response." Report No. EERL 90-03, California Institute of Technology, Pasadena, CA.

### **INVITED/KEYNOTE LECTURES**

- Keynote Lecture: "Multi-Objective Framework for Structural Modeling Consistent with Data." *ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, M. Papadrakakis, D.C. Charmpis, N.D. Lagaros, Y. Tsompanakis (eds.), Rethymno, Crete, Greece, 13-16 June 2007.
  - Invited Lecture: "Optimization Algorithms for System Integration." Session C-2 Integration Technologies of of Sympocium C "Embodying Intelligence in Structures and Integrated Systems" of the 3<sup>rd</sup> International Conference on "Smart Materials, Structures and Systems", Acireale, Sicily, Italy, June 8-13, 2008.
  - "Optimal Experimental Design for Structural Identification and Response Predictions," Department of Civil Engineering, Universidad Tecnica Federico Santa Maria, Valparaiso, Chile, August 2003.
  - "Optimal Sensor and Actuator Methodology for Structural Identification," Centre of Excellence for Advanced Materials and Structures, Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, January 2003.
  - Department of Dynamics of Complex Systems, Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, January 2003.
- Three Lectures on
- "Modal Model Identification in Structural Dynamics with Applications"
  - "Statistical Model Updating and Damage Detection Methodology"

- "Methodology for Updating Robust Reliability using Measured Dynamic Data"
- "Applications of Genetic Algorithms in Structural Health Monitoring," Session on "Computational Methods in Stochastic Mechanics and Reliability Analysis II" of 5<sup>th</sup> World Congress on Computational Mechanics, Austria, 2002.
- "Health Monitoring of Pipe Networks Using a Probabilistic Framework," 8th International Conference on Structural Safety and Reliability (ICOSSAR'01), Newport Beach, California, 2001
- "Modal Identification and Model Updating in Structural Dynamics," Institute of Engineering Seismology and Earthquake Engineering (ITΣAK), Thessaloniki, 2000
- "Optimal Sensor Location Methodology for Structural Model Updating," Department of Civil and Environmental Engineering, UCLA, 1999
- "Methodology for Optimal Sensor Locations for Model Parameter Identification in Structures," Division of Engineering and Applied Science, Caltech, 1998
- "Structural Model Updating Software Development in IMOS (Integrated Modelling of Optical Systems)," Jet Propulsion Laboratory (NASA), Pasadena, 1997
- "Stochastic Response Characteristics of Structures Subjected to Earthquake Excitation," Department of Civil Engineering, Texas A&M University, 1990

#### **Other Lectures**

- More than 50 lectures in international conferences
- "Identification of the Dynamic Characteristics of Structures based on Vibration Measurements," Workshop on Seismic Risk and Upgrading of Structures, Agrinio, 22-23 February 2003.
- "Optimization, Leakage Detection, and Optimum Sensor Location in Water Pipe Networks: I. Theory," Training Workshop on Management and Modeling of Water Pipe Networks, Volos, 2002.

#### **PARTICIPATION IN FUNDED RESEARCH PROJECTS**

1. Advanced methods for structural health monitoring. (Principal Investigator). Sponsor: IKY under program IKYDA – Promotion of the Exchange and Scientific Collaboration between Greece and Germany, Budget: 10.000 Euro. Period: Jan. 2007 – Dec. 2008.
2. "Development of Bayesian Structural Health Monitoring Methodology and its Enhancement by Optimal Sensor Placement and by Optimal Model Class Selection." Χρηματοδότηση: *Research Grants Council (Hong Kong)*, Budget (for Hong Kong participants): 441.400 Hong Kong Dollars, Period: 2006 – 2008 (Principal Investigator: Paul Lam, City University of Hong Kong).
3. "Dynamic Response and Design Optimization of Vehicle Structures." (Principal Investigator). Sponsor: Greek General Secretariat of Research and Development (PENED 2003), Budget UTH: 55,340 Euro. Total Budget (with AUTH and Sarakaki AEBE – AE) : 138,340 Euro. Period: July 2005 – June 2008.
4. "Development of a Structural Identification and Damage Detection Methodology." (Principal Investigator). Sponsor: Greek Ministry of Education, (*Program Hrakleitos*), Budget: 32,929 Euro. Period: (2003 – 2005), Ph.D. Candidate: Konstantinos Christodoulou.
5. *Earthquake Protection of Bridges - ΑΣΠροΓε* (Principal Investigator). Sponsor: Greek General Secretariat of Research and Development (EPAN2003). Budget (UTH): 96,000. Total Budget (Consortium

with AUTH, ITSAK, Egnatia Odos A.E. and 10 more Universities and construction companies): 2,000,000 Euros. Period: 42 months (Oct. 2003 – March 2007).

6. *Development of a Monitoring System for Assessing Structural Integrity of Bridges under Earthquake Loads*. Sponsor: Greek Earthquake Planning and Protection Organization. Budget (UTH): 39,000. Total Budget (with ITSAK): 58,000 Euros. Period: 24 months (Febr. 2001 – Jan 2003).
7. *Development of Structural Health Monitoring and Diagnosis System for Important Bridges Owned by Egnatia Odos A.E.* Sponsor: Egnatia Odos S.A. Budget (UTH): 44,000 Euros. Total Budget (with ITSAK): 58,000 Euros. Period: 24 months (July 2001 – June 2003).
8. *Leakage Diagnosis and Prevention in Water Pipe Networks*. Sponsor: Greek General Secretariat of Research and Development (PABET 2001). Budget (UTH): 47,000 Euros. Total Budget (with EYDAP): 150,000. Period: 24 months (Sept. 2001 – Aug. 2003).
9. *Development of Identification and Health Monitoring System for Structures of Crucial Importance* (Principal Investigator). Sponsor: Greek General Secretariat of Research and Development (PENED 1999). Budget (UTH): 48,000 Euros. Total Budget (with UPatras & AUTH): 159,000. Period: 18 months (Jan. 2000 – Aug. 2001).

#### Before Joining the University of Thessaly

10. “Methodology for structural model updating and damage detection using vibration monitoring.” Χρηματοδότηση: *The Hong Kong Research Grants Council*, Περίοδος: Οκτ. 1997 – Σεπτ. 2000.
11. Reliability methods for performance evaluation. Sponsor: *NSF - Pacific Earthquake Engineering Research Center*, Period: 1998 – March 1999.
12. A probability-based description of strong motion accelerograms for improved seismic risk studies (Principal Investigator). Sponsor: *National Science Foundation - Research Initiation Award*, Period: 1993 - 1997 (Grants BCS-9309149 and CMS-9796135).
13. Development of modal updating tools for precision space structures (part of the Space Interferometry Program). Sponsor: *NASA – Jet Propulsion Laboratory*. Period: Aug. 1996 – Jul. 1998.
14. New computer tools for optimal design decisions in the presence of risk. Sponsor: *California Universities for Research in Earthquake Engineering under the CUREe-Kajima Research Program*. Period: June 1994 – March 1996.
15. Technology for infrastructure wind loads and response monitoring systems. Sponsor: *The Hong Kong UPGC Research Infrastructure Program*. Period: Sept. 1995 – Aug. 1996.
16. A new damage detection methodology for civil structures using vibration monitoring. Sponsor: *The Hong Kong Research Grants Council*. Period: Sept. 1995 – Aug. 1996.
17. Response envelope control for structural dynamic systems. Sponsor: *The Hong Kong Research Grants Council*. Period: May 1996 – Jul 1996.
18. Decision support tools for earthquake recovery of businesses. Sponsor: *California Universities for Research in Earthquake Engineering under the CUREe-Kajima Research Program*. Period: Oct. 1997 – Sept 1999.
19. Response characteristics of uncertain structures subjected to earthquake loads (Principal Investigator). Sponsor: *Texas Engineering Experiment Station*, Period: Sept 1992 – Aug. 1993.

## **TEACHING EXPERIENCE**

### **Undergraduate**

*University of Thessaly*: Dynamics and Vibrations of Mechanical Systems, Dynamics, Statics, Finite Element Method, Computational Dynamics.

*Caltech*: Statics and Dynamics.

*Texas A&M University:* Theory of Structures, Numerical Analysis, Engineering Mechanics of Materials, Static, Dynamics and Strength of Materials, Engineering Problem Solving & Computing.

### **Graduate**

*University of Thessaly:* Stochastic Analysis of Vibrations of Mechanical and Structural Systems, System Dynamics, Advanced Computational Dynamics, Mechanical Vibrations.

*Caltech:* Computational Mechanics.

*Texas A&M University:* Structural Dynamics.

### **Doctoral Thesis Supervising**

1. Evaggelos Ntotsios (in progress since 2005), "Structural Identification of Complex Structures based on Vibration Measurements," University of Thessaly.
2. Kyriakos Perros (in progress since 2005), "Reliability and Design Optimization of Nonlinear Dynamical Systems under Uncertainty," University of Thessaly.
3. Grigoris Karaiskos, Διδακτορική Διατριβή (in progress since 2006), "Active Control of Vibrations of Structures," University of Thessaly.
4. Konstantinos Christodoulou (March 2006), "Development of Damage Detection and Identification Methodology," University of Thessaly.
5. Ayhan Irfanoglu (1999), "Performance – Based Optimal Structural Design Under Uncertainty," California Institute of Technology (Co-advisor with Professor J.L. Beck)
6. David C. Polidori (1997), "A Probabilistic Treatment of Uncertainty in Nonlinear Dynamical Systems," California Institute of Technology (Co-Advisor with Professor J.L. Beck)
7. Eduardo Chan (1998), "Optimal Design of Building Structures using Genetic Algorithms," California Institute of Technology (Co-advisor with Professor J.L. Beck)

### **MSc Thesis Supervising**

1. Ioannis Nikolaou, Master Thesis (in progress since 2006), "Structural Modal Identification based on Earthquake Vibrations," University of Thessaly
2. Grigorios Karaiskos, Master Thesis (in progress since 2005), "Passive Control of Structures using Multiple Tuned Mass Dampers: Theory and Experimental Validation," University of Thessaly
3. Evaggelos Ntotsios, Master Thesis (in progress since 2005), "Modal Identification of Structures using Ambient Vibrations: Theory, Software and Applications," University of Thessaly
4. Kyriakos Perros, Master Thesis (in progress since 2005), "Reliability of Linear and Nonlinear Systems Under Earthquake Loads," University of Thessaly
5. Sakis Maragkozakis, Master Thesis (2004), "Optimal Experimental Design of Structures," University of Thessaly
6. Ioannis Haralampidis, Master Thesis (2003), "Optimal Sensor Location and Multi-objective Identification of Structures using evolution Algorithms," University of Thessaly
7. Maria Pavlidou, Master Thesis (2003), "Methods for Identification of Modal Models of Structures," University of Thessaly
8. Zannis Poulakis, Master Thesis (2002), "Design Optimization and Leakage Detection in Water Pipe Networks Using Evolution Algorithms," University of Thessaly (Co-Advisor).

9. Konstantinos Christodoulou, Master Thesis (2001), "Finite Element Model Updating with Applications in Damage Detection of Structures," University of Thessaly
10. (Ivan) Siu Kui Au, Master of Engineering (1996), "Reliability and Control of Structures with Uncertainties," Hong Kong University of Science and Technology (Co-advisor with Professor L.S. Katafygiotis)
11. Bing Wang, Master of Engineering (1992), "Approximate Analysis of Response Statistics of Uncertain MDOF Linear Systems," Texas A&M University
12. Sanjay Agrawal, Master of Engineering (1993), "Buckling Analysis of Uncertain Structures Using Stochastic Finite Elements," Texas A & M University

### **HONORS AND AWARDS**

National Science Foundation - Research Initiation Award (1993 - 1997)

Harold Helwig Fellowship in Structural Engineering (1989)

Research/Teaching Assistantship, Caltech (1984 – 1990)

Greek National Scholarship Fellow (1980 - 1984)

### **PROFESSIONAL SERVICE**

- **Reviewer for:**

- AIAA Journal
- Computer Methods in Applied Mechanics and Engineering
- Computational Mechanics
- Computer-Aided Civil and Infrastructure Engineering
- Earthquake Engineering and Structural Dynamics
- Engineering Structures
- Mechanical Systems and Signal Processing
- International Journal of Non-Linear Mechanics
- International Journal of Reliability and Safety
- International Journal of Mechanical Sciences
- IEEE Control Systems Magazine
- Journal of Computing and Information Science in Engineering
- Journal of Vibration and Acoustics (ASME)
- Journal of Dynamic Systems Measurement and Control (ASME)
- Journal of Engineering Mechanics (ASCE)
- Journal of Sound and Vibrations
- Journal of Structural Control and Health Monitoring
- Journal of Structural Engineering (ASCE)
- Journal of Vibrations and Control
- Journal of Smart Materials and Structures
- Probabilistic Engineering Mechanics
- Smart Structures and Systems
- McGraw Hill
- Prentice Hall

- Greek General Secretariat of Research and Development
- Greek Ministry of Education (ΥΠΕΠΘ)
- Research Committee, University of Patras, «Καραθεοδωρή» Program
- “National Technical University of Athens, Basic Research Program (“Λεύκιππος”, “Κωνσταντίνος Καραθεοδωρή”, “ΠΕΒΕ 2007”)
- Research Council, Katholieke Universiteit Leuven

- **Member of Technical and Scientific Committees:**

- q Associate Editor of International Journal of Reliability and Safety
- q Member of the Stochastic Methods in Structural Engineering Committee (Subcommittee: System Identification and Structural Control) of International Association for Structural Safety and Reliability (IASSAR) (2004 - )
- q Member of the Dynamics Committee of Engineering Mechanics Division of ASCE (2000 - )
- q Member of the Probabilistic Methods Committee of Engineering Mechanics Division of ASCE (2000 - )
- q Member of Committee On Uncertainty and Probabilistics (COUP) of ASME (2004 - )
- q Member of Structural Health Monitoring Task Group Committee of Engineering Mechanics Division of ASCE (2000 - )
- q Member of the Scientific Committee of the 3<sup>rd</sup> Hellenic Conference of Earthquake Engineering and Seismology, November 2007, Athens.
- q Member of the Scientific Committee of the 4<sup>th</sup> European Workshop on Structural Health Monitoring, Cracow, Poland, July 2008.
- q Member of the Scientific Committee of the 2<sup>nd</sup> International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Rhodes, Greece, June 2009.
- q Member of the International Advisory Board of Symposium C “Embodying Intelligence in Structures and Integrated Systems” of the 3<sup>rd</sup> International Conference on “Smart Materials, Structures and Systems”, Acireale, Sicily, Italy, June 8-13, 2008.
- q Member of the National Advisory Board of the 1<sup>st</sup> International Conference on Computational Dynamics and Earthquake Engineering, Rethymnon, Crete, Greece, June 2007.
- q Member of the Scientific Committee of the 3<sup>rd</sup> European Workshop on Structural Health Monitoring, Granada, Spain, July 2006.
- q Member of the Scientific Committee of the 5<sup>th</sup> International Conference on Computational Stochastic Mechanics, Rhodes, Greece, June 2006.
- q Member of the International Technical Committee of the International Conference on Structural Safety and Reliability (ICOSSAR’05), Rome, June 2005
- q Member of the Scientific Committee of the 4<sup>th</sup> International Conference on Computational Stochastic Mechanics, Corfu, June 2002.
- q Member of the Scientific Committee of First National Conference of Recent Advances in Mechanical Engineering (ASME), Patra, Sept. 2001.

### **Conference Organizer and Session Chairman**

- q Co-organizer of Symposium on “Nonlinear Dynamics, Optimization and Reliability of Mechanical Systems” for the *21th Biennial ASME Conference on Mechanical Vibration and Noise*, Las Vegas, September, 2007

- q Co-organizer of Mini-Symposium on “Identification Methods in Structural Dynamics” for the *1<sup>st</sup> International Conference on Computational Dynamics and Earthquake Engineering*, Rethymnon, Crete, June, 2007
- q Co-organizer of Session on “Bayesian Parameter and State Estimation” for the *ICOSSAR’05 Conference*, Rome, Italy, June 19-22, 2005
- q Co-organizer of Symposium on “Nonlinear Dynamics, Optimization and Reliability of Mechanical Systems” for the *20th Biennial ASME Conference on Mechanical Vibration and Noise*, Long Beach, California, September, 2005
- q Co-organizer of Symposium on “Dynamics and Identification of Piecewise Linear and Nonlinear Systems” for the *19th Biennial ASME Conference on Mechanical Vibration and Noise*, Chicago, Illinois, September 2-6, 2003
- q Co-organizer of Symposium on “Vibration, Identification and Control of Dynamical Systems” for the *5th EUROMECH Solid Mechanics Conference*, Thessaloniki, Greece, August 17-22, 2003
- q Co-organizer of Mini-Symposium on “System Identification, Order Reduction and Fault Detection” for the *18th Biennial ASME Conference on Mechanical Vibration and Noise*, Pittsburgh, Pennsylvania, September 9-13, 2001
- q Co-chairman of Sessions of Minisymposium on “Identification Methods in Structural Dynamics” for the *1<sup>st</sup> International Conference on Computational Dynamics and Earthquake Engineering*, Rethymnon, Crete, June, 2007
- q Co-chairman in Sessions of Symposium on “Nonlinear Dynamics, Optimization and Reliability of Mechanical Systems” for the *21th Biennial ASME Conference on Mechanical Vibration and Noise*, Las Vegas, September, 2007
- q Chairman of session on “Damage Detection Experimental Methods 1” for the 3<sup>rd</sup> European Workshop on Structural Health Monitoring, Granada, Spain, July 2006.
- q Member of the Panel Discussion Committee on “Civil Engineering Applications and Issues” for the 3<sup>rd</sup> European Workshop on Structural Health Monitoring, Granada, Spain, July 2006.
- q Co-chairman of session on “Monte Carlo” for the 5<sup>th</sup> International Conference on Computational Stochastic Mechanics, Rhodes, Greece, June 2006.
- q Co-chairman of session on “Computational Stochastic Dynamics” for the Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability (PMC’04), Albuquerque, July 2004.
- q Co-chairman of session on “Applied Probabilistic Analysis” for the 4<sup>th</sup> International Conference on Computational Stochastic Mechanics, Corfu, June 2002.
- q Co-chairman of session for the *18th Biennial ASME Conference on Mechanical Vibration and Noise*, Pittsburgh, Pennsylvania, September 9-13, 2001
- q Co-chairman of session for the *8<sup>th</sup> ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability*, University of Notre Dame, Notre Dame, Indiana, 2000

#### **PROFESSIONAL AFFILIATIONS**

Member of the American Society of Mechanical Engineers (1991 – 1994, 2000 - present)

Member of the American Society of Civil Engineers (1987 – 1999)

Member of the Greek Society of Theoretical and Applied Mechanics (2001 – present)

ΕΛ.ΕΤ.ΥΜ – Hellenic Association of Computational Mechanics (2002 - present)  
Member of Society for Experimental Mechanics (1993 - 1994)  
Member of the Technical Chamber of Greece (1986 - present)