

CURRICULUM VITAE
(October 2024)

Ioannis A. Kougiumtzoglou Web (Research Lab): <https://kougiumtzoglou-lab.engineering.columbia.edu>
Associate Professor Web (Department): <https://www.civil.columbia.edu/content/ioannis-kougiumtzoglou>
Google Scholar: https://scholar.google.com/citations?hl=en&user=_ld2hfcAAAAJ

RESEARCH INTERESTS

Prof. Kougiumtzoglou and his research group develop primarily analytic and numerical methodologies for stochastic response analysis, reliability assessment, and optimization of complex systems and structures in the presence of uncertainties. These methodologies lead eventually to efficient design of dynamic systems ranging from the nano-scale (e.g., nano-mechanical oscillators) to the macro-scale (e.g., energy harvesters and civil infrastructure systems). Specific theoretical research themes include nonlinear stochastic dynamics and path integrals, computational stochastic mechanics, and uncertainty quantification. Nonlinear systems exhibiting time- and space-localized behaviors, described by wavelet- and/or fractional derivative-based operators, receive particular attention. Additional research endeavors with diverse applications in structural, earthquake, marine and wind engineering include uncertainty modeling and propagation based on joint time-frequency signal processing techniques, and on sparse representations theory and tools. Representative cross-disciplinary collaborative work relates to precision medicine applications such as modeling and analysis of the dynamic cerebral autoregulation physiological mechanism.

BRIEF BIO

Prof. Ioannis A. Kougiumtzoglou received his five-year Diploma in Civil Engineering from the National Technical University of Athens (NTUA) in Greece (2007), and his M.Sc. (2009) and Ph.D. (2011) degrees in Civil Engineering from Rice University, TX, USA. He joined Columbia University in 2014, where he is currently an Associate Professor (with tenure) in the Department of Civil Engineering & Engineering Mechanics. Prof. Kougiumtzoglou is an awardee of the Junior Research Prize from the European Association of Structural Dynamics (EASD) for outstanding research in nonlinear stochastic dynamics. He is a recipient of the prestigious CAREER award from the National Science Foundation (NSF), and of the Walter L. Huber Civil Engineering Research Prize from the American Society of Civil Engineers (ASCE) for seminal contributions to the field of stochastic engineering dynamics.

Prof. Kougiumtzoglou has published more than 90 peer-reviewed journal papers, and a book on “Path Integrals in Stochastic Engineering Dynamics” (Springer). He is an Associate Editor and/or an Editorial Board Member of the following journals: Probabilistic Engineering Mechanics, International Journal of Non-Linear Mechanics, Mechanical Systems and Signal Processing, and ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, and has served as a Guest Editor for several special issues in various journals. Prof. Kougiumtzoglou is a member of the American Society of Civil Engineers (ASCE), and of the ASCE Engineering Mechanics Institute (EMI). He is a Licensed Professional Civil Engineer in Greece, and a Fellow of the Higher Education Academy (FHEA) in the UK.

CURRENT POSITION

Associate Professor (07/2019 – present)

Department of Civil Engineering & Engineering Mechanics
The Fu Foundation School of Engineering & Applied Science
Columbia University, NY, USA

PROFESSIONAL EXPERIENCE

Assistant Professor (09/2014 – 06/2019)

Department of Civil Engineering & Engineering Mechanics
The Fu Foundation School of Engineering & Applied Science
Columbia University, NY, USA

Lecturer in Uncertainty and Engineering (09/2011 – 08/2014)

(UK equivalent to Assistant Professor)
Institute for Risk & Uncertainty, School of Engineering
University of Liverpool, Liverpool, UK

Research Assistant (08/2007 – 05/2011)

Advanced Stochastic Mechanics Group (directed by Prof. P. D. Spanos)
Department of Civil and Environmental Engineering
Rice University, Houston, TX, USA

Licensed Professional Civil Engineer (08/2008 - present)

Technical Chamber of Greece (TEE-TCG)

EDUCATION

Doctor of Philosophy (05/2011)

Rice University, Houston, TX, USA
Department of Civil and Environmental Engineering
Thesis title: “*Harmonic Wavelets Procedures and Wiener Path Integral Methods for Response Determination and Reliability Assessment of Nonlinear Systems/Structures*”
Supervisor: P. D. Spanos, L.B. Ryon Endowed Chair in Engineering

Master of Science (05/2009)

Rice University, Houston, TX, USA
Department of Civil and Environmental Engineering
Thesis title: “*Response and First-Passage Statistics of Nonlinear Structural Models under Evolutionary Stochastic Loads*”
Supervisor: P. D. Spanos, L.B. Ryon Endowed Chair in Engineering

Diploma in Civil Engineering (07/2007)

National Technical University of Athens, Greece
School of Civil Engineering

Thesis title: “*Extended Finite Element Method (X-FEM) for Fracture Mechanics Applications*”

Supervisor: M. Papadrakakis, Professor

HONORS / AWARDS

Walter L. Huber Civil Engineering Research Prize

American Society of Civil Engineers (ASCE) (2024)

“Awarded to Ioannis Kougioumtzoglou for seminal contributions to the field of stochastic engineering dynamics, and for pioneering Wiener path integral methods for determining the response of diverse nonlinear systems/structures subjected to a variety of stochastic excitations.”

Faculty Early Career Development Program (CAREER) Awardee

National Science Foundation (NSF), USA (2018-2024)

“Prof. Kougioumtzoglou has been chosen by the National Science Foundation (NSF) for the project entitled «CAREER: A Path Integral Methodology for Accurate and Computationally Efficient Stochastic Analysis of Diverse Dynamical Systems» to receive the prestigious CAREER Award, which recognizes early stage scholars with high levels of promise and excellence”

Junior Research Prize

European Association of Structural Dynamics (EASD) (2014)

in the area of “*Development of Methodologies for Structural Dynamics*”

“Awarded to Ioannis Kougioumtzoglou for his innovative influence on the field of nonlinear stochastic dynamics”

Keynote Speaker

ICOSSAR 2021-2022 Conference, Tongji U., China: *Early Career Lecture* (09/2022)

ICVRAM-ISUMA-UNCERTAINTIES Conference, Brazil: *Keynote Lecture* (04/2018)

Best Student Paper Awards

Awarded to PhD students supervised by Prof. Kougioumtzoglou for jointly authored papers:

I. Mavromatis – ASCE EMI Conference (Dynamics), Georgia Tech (2023)

M. Katsidoniotaki – ICOSSAR 2021-2022 Conference, Tongji Univ., China (2022)

M. Katsidoniotaki – ASCE EMI Conference (Dynamics), Johns Hopkins Univ. (2022)

I. Petromichelakis – ASCE EMI Conference (Probabilistic Methods), Caltech (2019)

M. Katsidoniotaki – ASCE EMI Conference (Dynamics), Caltech (2019)

I. Petromichelakis – ASCE EMI Conference (Dynamics), MIT (2018)

K. R. M. Dos Santos – ASCE EMI Conference (Dynamics), UCSD (2017)

L. Comerford – IEEE Symposium on Computational Intelligence, Singapore (2013)

Fellow, The Higher Education Academy (HEA), United Kingdom (2014)

Recognition reference: PR069711

Achieving Excellence Award, University of Liverpool, United Kingdom (2012)

(as a member of the Civil Engineering Program Team for enhancing the quality and revamping the Civil Engineering curriculum as well as increasing student satisfaction rates)

“This award recognizes people who have made a demonstrable difference to how a service is delivered; made an outstanding contribution to the achievement of one of the University's strategic priorities; or achieved outstanding project delivery”

Scholarship Awards

Hellenic Professional Society of Texas, USA (2008) – for graduate studies
Eugenides Foundation, Greece (2008) – for graduate studies
Rice University, Houston, TX, USA (2007-2011) – for graduate studies
National State Scholarships Foundation, Greece (2003-2006) – for undergraduate studies

TEACHING INTERESTS / SUPERVISING EXPERIENCE

Courses

Dept. of Civil Eng. & Eng. Mechanics, Columbia University (09/2014 - present)
ENME E6220: Stochastic Engineering Mechanics
ENME E6220: Random Processes in Mechanics
ENME E3105: Mechanics
CIEN E3111/E4111: Uncertainty and Risk in Civil Infrastructure Systems
School of Engineering, University of Liverpool (09/2011 – 08/2014)
ENGG 304: Uncertainty, Reliability and Risk I
CIVE 263/362: Capstone I: Group Design Project
CIVE 262: Integrated Design

Short Courses (Invited)

NOEL, Mediterranean University of Reggio Calabria, Italy (07/2017)
São Carlos School of Engineering, University of São Paulo, Brazil (11/2012 – 12/2012)

Ph.D. Student Supervision

Columbia University, USA (supervisor)
O. Brudastova (Defended 08/2018)
K. R. M. Dos Santos (Defended 06/2019)
(currently an Assistant Professor, University of Minnesota, USA)
A. Psaros (Defended 06/2019)
(currently a Senior Researcher in Asset Management, Fidelity, USA)
I. Petromichelakis (Defended 07/2020)
(currently an Assistant Vice President in Algorithmic Trading at Citibank, USA)
M. Katsidoniotaki (Defended 12/2022)
(currently an AI Research Associate at JP Morgan Chase Co, USA)
I. Mavromatis (Defended 03/2024)
(currently a Post-Doc, Columbia University, USA)
L. Taliadouros (In Progress)
Monash University, Australia (co-supervisor)
A. Meimaris (Defended 06/2020)
(currently employed as a Data Scientist at Newgate Research, Australia)
A. Nawagamuwage (In Progress)
Leibniz University Hannover, Germany (co-supervisor)
G. Pasparakis (Defended 11/2022)
(currently a Post-Doc, Johns Hopkins University, USA)
University of Liverpool, UK (co-supervisor)
I. Mitseas (Defended 03/2015)
(currently a Lecturer, University of Leeds, UK)
L. Comerford (Defended 09/2015)

(currently self-employed and founder of a start-up)
Y. Zhang (Defended 04/2017)
(currently an Assistant Professor, Wuhan University of Technology, China)
V. Fragkoulis (Defended 09/2017)
(currently a Lecturer, University of Liverpool, UK)
N. Gazis (Defended 08/2018)
(currently a self-employed structural engineer, Chicago, USA)

RESEARCH GRANTS

Columbia University SEAS Interdisciplinary Research Seed (SIRS) Fund

Principal Investigator - (85,000 \$): 09/2024 - 08/2025

“Exploring the potential of quantum computing for vastly more efficient analysis, design and optimization of structural systems subject to uncertainties”

Columbia University Office of the Executive Vice President for Research Research Initiatives in Science and Engineering (RISE) Fund

Principal Investigator - (120,000 \$): 09/2024 - 08/2025

“Exploring the potential of quantum computing for revolutionizing the field of stochastic structural dynamics”

New York City Office of Technology and Innovation (NYC OTI)

Co-Principal Investigator - (100,000 \$): 06/2024 - 05/2025

“Citywide Soils Model Interpolation Methodology Research Project”

National Science Foundation (NSF), USA

Principal Investigator - (70,000 \$): 09/2020 - 08/2024

Supplement request in response of Dear Colleague Letter 20-027: “Data Science Activities for the Civil, Mechanical and Manufacturing Innovation Communities” for the project “CAREER: A Path Integral Methodology for Accurate and Computationally Efficient Stochastic Analysis of Diverse Dynamical Systems”

Columbia University SEAS Translational Acceleration Research (STAR) Fund

Principal Investigator - (160,000 \$): 09/2020 - 08/2022

“Personalized blood pressure management after acute ischemic stroke using quantitative analysis of dynamic cerebral autoregulation: an observation pilot study”

National Science Foundation (NSF), USA

Principal Investigator - (500,000 \$): 09/2018 - 08/2024

“CAREER: A Path Integral Methodology for Accurate and Computationally Efficient Stochastic Analysis of Diverse Dynamical Systems”

National Science Foundation (NSF), USA

Principal Investigator - (298,918 \$): 09/2017 - 08/2020

“Compressive Sampling for Uncertainty Modeling and Quantification of Dynamical Systems Subject to Highly Limited/Incomplete Data”

Columbia University SEAS Interdisciplinary Research Seed (SIRS) Fund

Principal Investigator - (70,000 \$): 01/2017 - 12/2017

“Real-time Elasticity Imaging”

Columbia University Hybrid Learning Course Redesign and Delivery Fund

Principal Investigator - (15,000 \$): 05/2016 - 08/2017

"A Flipped Classroom approach to the courses "ENME E3105: Mechanics & CIEN E3111/E4111: Uncertainty and Risk in Civil Infrastructure Systems" by utilizing a web-based interactive tool"

Columbia University Hybrid Learning Course Redesign and Delivery Fund

Principal Investigator - (15,000 \$): 12/2014 - 08/2015

"A Flipped Classroom approach to the course "ENME E6220: Random Processes in Mechanics" by utilizing a web-based interactive tool"

Marie Curie International Research Staff Exchange Scheme (IRSES) – EU FP7

Co-Principal Investigator - (281,400 €): 05/2014 – 04/2018

"PLENOSE - Large Multipurpose Platforms for Exploiting Renewable Energy in Open Seas"

UK Higher Education Innovation Funding (HEIF) for Knowledge Exchange

Principal Investigator - (1,000 £): 02/2013 – 07/2013

"Stochastic loss reserving and optimal pricing strategies for an insurer in a competitive market"

University of Liverpool (Business Gateway) Knowledge Exchange Voucher Scheme

Principal Investigator - (10,000 £): 01/2013 - 06/2013

"Efficient Uncertainty Quantification Techniques for Drill-String Dynamics"

Technology Strategy Board & Pavement Testing Services Ltd

Co-Principal Investigator - (156,540 £): 08/2012 – 02/2015

"To develop a diagnostic and remedial maintenance system to predict failure of wearing courses on motorways and trunk roads, allowing preventative maintenance service planning"

ACADEMIC SERVICE

Associate Editor

Journal of Mechanical Systems and Signal Processing (2024 - present)

ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems (2020-present)

Editorial Board Member

Journal of Probabilistic Engineering Mechanics (2019 - present)

International Journal of Non-Linear Mechanics (2019 - present)

Journal of Mechanical Systems and Signal Processing (2019 - present)

ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems (2015-present)

Co- Editor

Encyclopedia of Earthquake Engineering, Springer, ISBN 978-3-642-35343-7

Guest Editor (Special Issues for International peer-reviewed Journals)

"Recent Advances and Future Challenges in Computational Stochastic Dynamics", Probabilistic Engineering Mechanics, vol. 38: 102-179, 2014.

"Robust Engineering Solutions with Environmental Loading", International Journal of Reliability and Safety, vol.8: 97-195, 2014.

COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

DEPARTMENT OF CIVIL ENGINEERING AND ENGINEERING MECHANICS

- “Decision Making under Risk and Uncertainty”, *ASCE-ASME Journal of Risk and Uncertainty in Engineering System: Part B*, vol. 1(2), 2015.
- “Data Acquisition and Processing, Uncertainty Management and Inverse Problem Techniques for Structural Health Monitoring Applications”, *International Journal of Sustainable Materials and Structural Systems*, vol. 2, 2015.
- “Uncertainty Modeling & Propagation Techniques in Engineering Mechanics: A Multi-Scale Perspective”, *International Journal for Multiscale Computational Engineering*, vol. 14(3):191-321, 2016.
- “International Conference on Stochastic Mechanics (SM16)”, *Probabilistic Engineering Mechanics*, vol. 54: 1-146, 2018.
- “Response analysis and optimization of dynamic energy harvesting systems in presence of uncertainties”, *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems: Part B*, vol. 7(1): 010301, 2021.
- “Computational methods for stochastic engineering dynamics”, *Engineering Structures* (In Progress)
- “Engineering Mechanics Institute (EMI) 2023 International Conference”, *Probabilistic Engineering Mechanics* (In Progress)

Secretary

ASCE EMI Dynamics Committee Secretary (2023-present)

Chair

Conferences

Management Chair, *ASCE ICVRAM 2014, 13-16 July, 2014, Liverpool, UK*
co-Chair, *IPW 2015, 4-6 November 4-6, 2015, Liverpool, UK*

co-Chair: *ASCE EMI / PMC 2021, 25-28 May, 2021, Columbia University, USA*

Mini-Symposia (organized and chaired more than 50 MS in International Conferences)

Reviewer

International peer-reviewed Journals (reviewer for more than 50 Journals)

PhD Theses / Dissertations (External Examiner)

Hridya P. (2017), Indian Institute of Technology, Madras, India

Vanvinckenroye H. (2018), Université de Liège, Belgium

Burlon A. (2019), Mediterranean University of Reggio Calabria, Italy

Mamis K. (2020), National Technical University of Athens, Greece

Aliasghar-Mamaghani M. (2023), Virginia Tech, USA

Xinda M. (2023), Nanyang Technological University, Singapore

Technical Proposals

National Science Foundation (NSF), USA

Engineering and Physical Sciences Council (EPSRC), United Kingdom

National Science Center (Narodowe Centrum Nauki – NCN), Poland

Seminars (Invited) – more than 15 invited talks at Universities worldwide

Scientific Committee Member (for more than 50 International Conferences)

PROFESSIONAL ASSOCIATION

Fellow

The Higher Education Academy, United Kingdom (HEA)

Member

American Society of Civil Engineers (ASCE)
ASCE Engineering Mechanics Institute (EMI)
EMI Probabilistic Methods Committee
EMI Dynamics Committee
American Society of Mechanical Engineers (ASME)
International Association for Structural Safety and Reliability (IASSAR)
International Society of Nonlinear Dynamics
European Association for Structural Dynamics (EASD)
International Society of Mechanical System Dynamics (ISMSD)
Bernoulli Society for Mathematical Statistics and Probability
Committee on Probability and Statistics in the Physical Sciences
Technical Chamber of Greece (Licensed Professional Civil Engineer)
Hellenic Society for Theoretical and Applied Mechanics (HSTAM)

PUBLICATIONS

(underline denotes current/past PhD students and Post-Docs)

A. Books

- A1. **Kougioumtzoglou I. A.**, Psaros A. F., Spanos P. D., 2024. Path Integrals in Stochastic Engineering Dynamics, *Springer*, ISBN 978-3-031-57862-5, <https://doi.org/10.1007/978-3-031-57863-2>.
- A2. Beer M., **Kougioumtzoglou I. A.**, Patelli E., Au I.S.-K., (Eds.), 2015. Encyclopedia of Earthquake Engineering, *Springer*, ISBN 978-3-642-35343-7.

B. Book Chapters

- B1. Beer M., **Kougioumtzoglou I. A.**, Patelli E., 2014. Emerging concepts and approaches for efficient and realistic uncertainty quantification, *Maintenance and Safety of Aging Infrastructure*, Frangopol D. M. & Tsompanakis Y. (Eds.), p. 121-161, *Structures & Infrastructures Book Series*, CRC Press, Taylor & Francis Group, 978-0-415-65942-0.

C. Peer-Reviewed International Journals

- C1. **Kougioumtzoglou I. A.**, Spanos P. D., 2009. An approximate approach for nonlinear system response determination under evolutionary stochastic excitation, *Current Science*, *Indian Academy of Sciences*, vol. 97: 1203-1211, (Special Issue, Invited).
- C2. Spanos P. D., **Kougioumtzoglou I. A.**, Soize C., 2011. On the determination of the power spectrum of randomly excited oscillators via stochastic averaging: An alternative

- perspective, *Probabilistic Engineering Mechanics*, vol. 26: 10-15, (Special Issue, Invited).
- C3. Spanos P. D., **Kougioumtzoglou I. A.**, 2012. Harmonic wavelets based statistical linearization for response evolutionary power spectrum determination, *Probabilistic Engineering Mechanics*, vol. 27: 57-68, (Special Issue, Invited).
- C4. Spanos P. D., Castillo D. H., **Kougioumtzoglou I. A.**, Tapia R. A., 2012. A nonlinear model for top fuel dragster dynamic performance assessment, *Vehicle System Dynamics*, vol. 50: 281-297.
- C5. **Kougioumtzoglou I. A.**, Spanos P. D., 2012. An analytical Wiener path integral technique for non-stationary response determination of nonlinear oscillators, *Probabilistic Engineering Mechanics*, vol. 28: 125-131 (Special Issue, Invited).
- C6. **Kougioumtzoglou I. A.**, Spanos P. D., 2013. An identification approach for linear and nonlinear time-variant structural systems via harmonic wavelets, *Mechanical Systems and Signal Processing*, vol. 37: 338-352.
- C7. Lancaster I. M., Khalid H. A., **Kougioumtzoglou I. A.**, 2013. Extended FEM modeling of crack propagation using semi-circular bending test, *Construction and Building Materials*, vol. 48: 270-277.
- C8. **Kougioumtzoglou I. A.**, Spanos P. D., 2013. Response and first-passage statistics of nonlinear oscillators via a numerical path integral approach, *ASCE Journal of Engineering Mechanics*, vol. 139: 1207-1217.
- C9. **Kougioumtzoglou I. A.**, Spanos P. D., 2013. Nonlinear MDOF system stochastic response determination via a dimension reduction approach, *Computers and Structures*, vol. 126: 135-148, (Special Issue, Invited).
- C10. **Kougioumtzoglou I. A.**, 2013. Stochastic joint time-frequency response analysis of nonlinear structural systems, *Journal of Sound and Vibration*, vol. 332: 7153-7173.
- C11. Spanos P. D., **Kougioumtzoglou I. A.**, 2014. Survival probability determination of nonlinear oscillators subject to evolutionary stochastic excitation, *ASME Journal of Applied Mechanics*, vol. 81, 051016: 1-9.
- C12. **Kougioumtzoglou I. A.**, Spanos P. D., 2014. Stochastic response analysis of the softening Duffing oscillator and ship capsizing probability determination via a path integral approach, *Probabilistic Engineering Mechanics*, vol. 35: 67-74 (Special Issue, Invited).
- C13. Spanos P. D., **Kougioumtzoglou I. A.**, 2014. Galerkin scheme based determination of first-passage probability of nonlinear system response, *Structure and Infrastructure Engineering*, vol. 10: 1285-1294, (Special Issue, Invited).

- C14. **Kougioumtzoglou I. A.**, Spanos P. D., 2014. Non-stationary stochastic response determination of nonlinear systems: A Wiener path integral formalism, *ASCE Journal of Engineering Mechanics*, vol. 140: 04014064: 1-14.
- C15. Kong F., Spanos P. D., Li J., **Kougioumtzoglou I. A.**, 2014. Response evolutionary power spectrum determination of chain-like MDOF nonlinear structural systems via harmonic wavelets, *International Journal of Non-Linear Mechanics*, vol. 66: 3-17 (Special Issue, Invited).
- C16. Beck A. T., **Kougioumtzoglou I. A.**, Dos Santos K. M., 2014. Optimal performance-based design of non-linear stochastic dynamical RC structures subject to stationary wind excitation, *Engineering Structures*, vol. 78: 145-153 (Special Issue, Invited).
- C17. Di Matteo A., **Kougioumtzoglou I. A.**, Pirrotta A., Spanos P. D., Di Paola M., 2014. Stochastic response determination of nonlinear oscillators with fractional derivatives elements via the Wiener path integral, *Probabilistic Engineering Mechanics*, vol. 38: 127-135 (Special Issue, Invited).
- C18. Tubaldi E., **Kougioumtzoglou I. A.**, 2015. Nonstationary stochastic response of structural systems equipped with nonlinear viscous dampers under seismic excitation, *Earthquake Engineering and Structural Dynamics*, vol. 44: 121-138.
- C19. Comerford L. A., **Kougioumtzoglou I. A.**, Beer M., 2015. An artificial neural network approach for stochastic process power spectrum estimation subject to missing data, *Structural Safety*, vol. 52: 150-160 (Special Issue, Invited).
- C20. Zhang Y., **Kougioumtzoglou I. A.**, 2015. Nonlinear oscillator stochastic response and survival probability determination via the Wiener path integral, *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B. Mechanical Engineering*, vol.1: 021006:1-15.
- C21. **Kougioumtzoglou I. A.**, Di Matteo A., Spanos P. D., Pirrotta A., Di Paola M., 2015. An efficient Wiener path integral technique formulation for stochastic response determination of nonlinear MDOF systems, *ASME Journal of Applied Mechanics*, vol. 82, 101005: 1-7.
- C22. Comerford L. A., **Kougioumtzoglou I. A.**, Beer M., 2015. On quantifying the uncertainty of stochastic process power spectrum estimates subject to missing data, *International Journal of Sustainable Materials and Structural Systems*, vol. 2: 185-206 (Special Issue, Invited).
- C23. **Kougioumtzoglou I. A.**, Zhang Y., Beer M., 2016. Softening Duffing oscillator reliability assessment subject to evolutionary stochastic excitation, *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A. Civil Engineering*, vol. 2 (2), C4015001: 1-10 (Special Issue, Invited).
- C24. Fragkoulis V., **Kougioumtzoglou I. A.**, Pantelous A., 2016. Linear random vibration of structural systems with singular matrices, *ASCE Journal of Engineering Mechanics*, vol. 142 (2), 04015081: 1-11.

- C25. **Kougioumtzoglou I. A.**, Spanos P. D., 2016. Harmonic wavelets based response evolutionary power spectrum determination of linear and nonlinear oscillators with fractional derivative elements, *International Journal of Non-Linear Mechanics*, vol. 80: 66-75 (Special Issue, Invited).
- C26. Comerford L. A., **Kougioumtzoglou I. A.**, Beer M., 2016. Compressive sensing based stochastic process power spectrum estimation subject to missing data, *Probabilistic Engineering Mechanics*, vol. 44: 66-76 (Special Issue, Invited).
- C27. Spanos P. D., Kong F., Li J., **Kougioumtzoglou I. A.**, 2016. Harmonic wavelets based excitation-response relationships for linear systems: A critical perspective, *Probabilistic Engineering Mechanics*, vol. 44: 163-173 (Special Issue, Invited).
- C28. Mitseas I. P., **Kougioumtzoglou I. A.**, Beer M., 2016. An approximate stochastic dynamics approach for nonlinear structural system performance-based multi-objective optimum design, *Structural Safety*, vol. 60: 67-76.
- C29. Fragkoulis V., **Kougioumtzoglou I. A.**, Pantelous A., 2016. Statistical linearization of nonlinear structural systems with singular matrices, *ASCE Journal of Engineering Mechanics*, vol. 142 (9), 04016063: 1-11.
- C30. Mitseas I. P., **Kougioumtzoglou I. A.**, Spanos P. D., Beer M., 2016. Nonlinear MDOF structural system survival probability determination subject to evolutionary stochastic excitation, *Strojniški vestnik - Journal of Mechanical Engineering*, vol. 62: 440-451 (Special Issue, Invited).
- C31. Dos Santos K. R. M., **Kougioumtzoglou I. A.**, Beck A. T., 2016. Incremental dynamic analysis: A nonlinear stochastic dynamics perspective, *ASCE Journal of Engineering Mechanics*, vol. 142 (10), 06016007: 1-7 (Technical Note).
- C32. Hillier J. K., **Kougioumtzoglou I. A.**, Stokes C. R., Smith M. J., Clark C. D., Spagnolo M. S., 2016. Exploring explanations of subglacial bedform sizes using statistical models, *PLOS ONE*, vol. 11(7): e0159489, doi:10.1371/journal.pone.0159489.
- C33. Kong F., **Kougioumtzoglou I. A.**, Spanos P. D., Li S., 2016. Nonlinear system response evolutionary power spectral density determination via a harmonic wavelets based Galerkin technique, *International Journal for Multiscale Computational Engineering*, vol. 14 (3): 255-272 (Special Issue, Invited).
- C34. Gazis N., **Kougioumtzoglou I. A.**, Patelli E., 2017. Ice gouge depth determination via an efficient stochastic dynamics technique, *ASME Journal of Offshore Mechanics and Arctic Engineering*, vol. 139, 011501: 1-8.
- C35. Antoniou E. N., Pantelous A. A., **Kougioumtzoglou I. A.**, Pirrotta A., 2017. Response determination of linear dynamical systems with singular matrices: A polynomial matrix theory approach, *Applied Mathematical Modeling*, vol. 42: 423-440.

- C36. Comerford L. A., Jensen H., Mayorga F., Beer M., **Kougioumtzoglou I. A.**, 2017. Compressive sensing with an adaptive wavelet basis for structural system response and reliability analysis under missing data, *Computers and Structures*, vol. 182: 26-40.
- C37. **Kougioumtzoglou I. A.**, Dos Santos K. R. M., Comerford L., 2017. Incomplete data based parameter identification of nonlinear and time-variant oscillators with fractional derivative elements, *Mechanical Systems and Signal Processing*, vol. 94: 279-296.
- C38. **Kougioumtzoglou I. A.**, 2017. A Wiener path integral solution treatment and effective material properties of a class of one-dimensional stochastic mechanics problems, *ASCE Journal of Engineering Mechanics*, vol. 143 (6), 04017014: 1-12.
- C39. **Kougioumtzoglou I. A.**, Fragkoulis V., Pantelous A., Pirrotta A., 2017. Random vibration of linear and nonlinear structural systems with singular matrices: A frequency domain approach, *Journal of Sound and Vibration*, vol. 404: 84-101.
- C40. Zhang Y., Comerford L. A., **Kougioumtzoglou I. A.**, Patelli E., Beer M., 2017. Uncertainty quantification of power spectrum and spectral moments estimates subject to missing data, *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A. Civil Engineering*, vol. 4 (3), 04017020: 1-10.
- C41. Laface V., **Kougioumtzoglou I. A.**, Malara G., Arena F., 2017. Efficient processing of water wave records via compressive sensing and joint time-frequency analysis via harmonic wavelets, *Applied Ocean Research*, vol. 69: 1-9.
- C42. Zhang Y., Comerford L., **Kougioumtzoglou I. A.**, Beer M., 2018. L_p -norm minimization for stochastic process power spectrum estimation subject to incomplete data, *Mechanical Systems and Signal Processing*, vol. 101: 361-376.
- C43. Meimaris A., **Kougioumtzoglou I. A.**, Pantelous A., 2018. A closed form approximation and error quantification for the response transition probability density function of a class of stochastic differential equations, *Probabilistic Engineering Mechanics*, vol.54: 87-94 (Special Issue, Invited).
- C44. Spanos P. D., **Kougioumtzoglou I. A.**, Dos Santos K. R. M., Beck A. T., 2018. Stochastic averaging of nonlinear oscillators: Hilbert transform perspective, *ASCE Journal of Engineering Mechanics*, vol. 144 (2), 04017173: 1-9.
- C45. Mitseas I. P., **Kougioumtzoglou I. A.**, Giaralis A., Beer M., 2018. A novel stochastic linearization framework for seismic demand estimation of hysteretic MDOF systems subject to linear response spectra, *Structural Safety*, vol. 72: 84-98.
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E. Conferences

○ ***Peer-Reviewed Conference Proceedings (Papers)***

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