- de Angelis, M., Gray, A., Ferson, S., & Patelli, E. (2023). Robust online updating of a digital twin with imprecise probability. *Mechanical Systems and Signal Processing*, 186. doi:10.1016/j.ymssp.2022.109877
- Bonney, M. S., de Angelis, M., Dal Borgo, M., & Wagg, D. J. (2023). Contextualisation of information in digital twin processes. *Mechanical Systems and Signal Processing*, 184, 109657. doi:10.1016/j.ymssp.2022.109657
- de Angelis, M., & Gray, A. (2022). Why the 1-Wasserstein distance is the area between the two marginal CDFs. doi:10.48550/arXiv.2111.03570
- Gray, A., de Angelis, M., Patelli, E., & Ferson, S. (2023). Bivariate dependency tracking in interval arithmetic. *Mechanical Systems and Signal Processing*, *186*. doi:10.1016/j.ymssp.2022.109771
- Miralles-Dolz, E., Gray, A., de Angelis, M., & Patelli, E. (2022, August 28). Interval-Based Global Sensitivity Analysis for Epistemic Uncertainty. In <a href="https://www.rpsonline.com.sg/proceedings/esrel2022/pdf/S14-04-180.pdf">https://www.rpsonline.com.sg/proceedings/esrel2022/pdf/S14-04-180.pdf</a> (pp. 2545-2552). Dublin. doi:10.3850/978-981-18-5183-4\_S14-04-180-cd
- de Angelis, M., & Gray, A. (2022, August 28). Bounding failure probability with the SIVIA algorithm. In <a href="https://www.rpsonline.com.sg/proceedings/esrel2022/pdf/S14-04-180.pdf">https://www.rpsonline.com.sg/proceedings/esrel2022/pdf/S14-04-180.pdf</a> (pp. 2570-2577). Dublin. doi:10.3850/978-981-18-5183-4\_S14-07-334-cd
- Behrendt, M., de Angelis, M., Comerford, L., & Beer, M. (2022, August 28). Assessing the severity of missing data problems with the interval discrete Fourier transform algorithm. In <a href="https://www.rpsonline.com.sg/proceedings/esrel2022/pdf/S14-05-243.pdf">https://www.rpsonline.com.sg/proceedings/esrel2022/pdf/S14-05-243.pdf</a> (pp. 2553-2560). Dublin. doi:<a href="https://www.rpsonline.com.sg/proceedings/esrel2022/pdf/S14-05-243.pdf">10.3850/978-981-18-5183-4\_S14-05-243.pdf</a> (pp. 2553-2560).
- Estrada Lugo, H. D. (2022, July 18). Credal Networks for Risk and Resilience Assessment of Complex Safety Systems Subject to Severe Accidents.
- Behrendt, M., de Angelis, M., Comerford, L., Zhang, Y., & Beer, M. (2022). Projecting interval uncertainty through the discrete Fourier transform: An application to time signals with poor precision. *Mechanical Systems and Signal Processing*, *172*, 108920. doi:10.1016/j.ymssp.2022.108920
- de Angelis, M. (2022). Exact bounds on the amplitude and phase of the interval discrete Fourier transform in polynomial time. Retrieved from <a href="http://arxiv.org/abs/2205.13978v1">http://arxiv.org/abs/2205.13978v1</a>
- Gray, N., Ferson, S., de Angelis, M., Gray, A., & de Oliveira, F. B. (2022). Probability bounds analysis for Python. *Software Impacts*, 100246. doi:10.1016/j.simpa.2022.100246
- de Angelis, M., & Sunny, J. (2022). Code for stochastic area metric (Version 0.3) [Computer Software]. doi:10.5281/ZENODO.6366288
- Sunny, J., de Angelis, M., & Edwards, B. (2021). Ranking and Selection of Earthquake Ground-Motion Models Using the Stochastic Area Metric. *Seismological Research Letters*. doi:10.1785/0220210216
- de Angelis, M. (2022). intervals (Version 0.1) [Computer Software]. doi:10.5281/zenodo.6205624

- Gray, A., Wimbush, A., de Angelis, M., Hristov, P. O., Calleja, D., Miralles-Dolz, E., & Rocchetta, R. (2022). From inference to design: A comprehensive framework for uncertainty quantification in engineering with limited information. *Mechanical Systems and Signal Processing*, 165, 108210. doi:10.1016/j.ymssp.2021.108210
- Bonney, M. S., de Angelis, M., Dal Borgo, M., Andrade, L., Beregi, S., Jamia, N., & Wagg, D. J. (2022). Development of a digital twin operational platform using Python Flask. *Data-Centric Engineering*, 3. doi:10.1017/dce.2022.1
- Ferson, S., & de Angelis, M. (2021). Computing with confidence. *International Journal Of Approximate Reasoning*, 137, 67-68. doi:10.1016/j.ijar.2021.07.001
- Farsangi, E. N., Noori, M., Gardoni, P., Takewaki, I., Varum, H., & Bogdanovic, A. (n.d.). *Reliability-Based Analysis and Design of Structures and Infrastructure*. CRC Press. doi:10.1201/9781003194613
- de Angelis, M., Rocchetta, R., Gray, A., & Ferson, S. (2021). Constructing consonant beliefs from multivariate data with scenario theory. Virtually from Liverpool.
- de Angelis, M., Rocchetta, R., Gray, A., & Ferson, S. (2021). *Constructing consonant beliefs* from multivariate data with scenario theory. Poster session presented at the meeting of The International Symposium on Imprecise Probabilities: Theories and Applications.
- de Angelis, M., Rocchetta, R., Gray, A., & Ferson, S. (2021). Constructing Consonant Predictive Beliefs from Data with Scenario Theory. In *Proceedings of Machine Learning Research* Vol. 147 (pp. 362). Granada, Spain.
- de Angelis, M. (2021). The interval (discrete) Fourier transform. Virtual Taormina, Italy..
- de Angelis, M., Behrendt, M., Comerford, L., Zhang, Y., & Michael, B. (2021, May 17). Forward interval propagation through the discrete Fourier transform. In 9th International workshop on reliable engineering computing (pp. 39-52). Taormina, Italy. Retrieved from <a href="http://www2new.unime.it/REC2021/proceedings/REC2021\_Proceedings.pdf">http://www2new.unime.it/REC2021/proceedings/REC2021\_Proceedings.pdf</a>
- Gray, A., de Angelis, M., Ferson, S., & Patelli, E. (2021, May 17). Whatis Z–X, when Z = X+Y? Dependency tracking in interval arithmetic with bivariate sets. In 9th International Workshop on Reliable Engineering Computing (REC2021). Virtual (Taormina, Italy).
- Gray, N., Calleja, D., Wimbush, A., Miralles-Dolz, E., Gray, A., de Angelis, M., . . . Ferson, S. (2021). Is no test better than a bad test: Impact of diagnostic uncertainty on the spread of COVID-19 (vol 15, e0240775, 2020). *PLOS ONE*, *16*(2). doi: 10.1371/journal.pone.0247129
- Valdebenito, M., de Angelis, M., & Patelli, E. (2021). Line Sampling Simulation. In *Reliability-Based Analysis and Design of Structures and Infrastructure*. CRC Press.
- Bonney, M. S., de Angelis, M., Wagg, D., & Dal Borgo, M. (2021). Digital Twin Operational Platform for Connectivity and Accessibility using Flask Python. In 24TH Acm/Ieee International Conference On Model-Driven Engineering Languages And Systems Companion (MODELS-C 2021) (pp. 239-243). doi:10.1109/MODELS-C53483.2021.00042

- Gray, A., Hose, D., de Angelis, M., Hanss, M., & Ferson, S. (2021). Dependent Possibilistic Arithmetic Using Copulas. In *Proceedings of The Twelveth International Symposium On Imprecise Probability: Theories And Applications* Vol. 147 (pp. 169-179). Retrieved from <a href="https://www.webofscience.com/api/gateway?GWVersion=2&SrcApp=PARTNER\_AP\_P&SrcAuth=LinksAMR&KeyUT=WOS:000855078800018&DestLinkType=FullRecord&DestApp=ALL\_WOS&UsrCustomerID=f3ec48df247ee1138ccd8d3ba59bacc2</a>
- Oparaji, B. U., Clearkin, L., Ferson, S., de Angelis, M., Ferrer-Fernandez, M., Calleja, D., . . . Derrer-Merk, E. (2020). Comment on: British Society for Rheumatology guideline on diagnosis and treatment of giant cell arteritis. *Rheumatology*, *59*(12), E159. doi:10.1093/rheumatology/keaa265
- Lye, A., de Angelis, M., & Patelli, E. (2020). *Bayesian Regression over Sparse Fatigue Crack Growth Data for Nuclear Piping*. Poster session presented at the meeting of Modelling in Nuclear Science and Engineering Seminar 2020. Bangor University. Retrieved from <a href="http://dx.doi.org/10.13140/RG.2.2.12347.95528">http://dx.doi.org/10.13140/RG.2.2.12347.95528</a>
- Gray, N., Calleja, D., Wimbush, A., Miralles-Dolz, E., Gray, A., de Angelis, M., . . . Ferson, S. (2020). Is "No test is better than a bad test"? Impact of diagnostic uncertainty in mass testing on the spread of Covid-19. *PLoS One*. doi:10.1371/journal.pone.0240775
- Gray, N., Calleja, D., Wimbush, A., Miralles-Dolz, E., Gray, A., De-Angelis, M., . . . Ferson, S. (n.d.). Is "No test is better than a bad test"? Impact of diagnostic uncertainty in mass testing on the spread of Covid-19. *MedRxiv*. doi:10.1101/2020.04.16.20067884
- Sadeghi, J. (2020, June 2). *Uncertainty Modelling for Scarce and Imprecise Data in Engineering Applications*.
- Sadeghi, J., de Angelis, M., & Patelli, E. (2020). Analytic Probabilistic Safety Analysis under Severe Uncertainty. *ASCE-ASME Journal Of Risk And Uncertainty In Engineering Systems Part A-Civil Engineering*, 6(1). doi:10.1061/AJRUA6.0001028
- Sadeghi, J., de Angelis, M., & Patelli, E. (2020). Robust propagation of probability boxes by interval predictor models. In *Structural Safety* Vol. 82. doi:10.1016/j.strusafe.2019.101889
- Estrada-Lugo, H. D., Santhosh, T. V., Angelis, M. D., & Patelli, E. (2020). Resilience Assessment of Safety-Critical Systems with Credal Networks. In *Proceedings of the 30th European Safety and Reliability Conference and 15th Probabilistic Safety Assessment and Management Conference*. Research Publishing Services. doi:10.3850/978-981-14-8593-0\_4192-cd
- Gray, A., Wimbush, A., de Angelis, M., Hristov, P. O., Miralles-Dolz, E., Calleja, D., & Rocchetta, R. (2020). Bayesian Calibration and Probability Bounds Analysis Solution to the Nasa 2020 UQ Challenge on Optimization under Uncertainty. In *Proceedings of the 30th European Safety and Reliability Conference and 15th Probabilistic Safety Assessment and Management Conference*. Research Publishing Services. doi:10.3850/978-981-14-8593-0\_5520-cd
- Gray, N., Angelis, M. D., Calleja, D., & Ferson, S. (2019). A Problem in the Bayesian Analysis of Data without Gold Standards. In *Proceedings of the 29th European Safety and Reliability Conference (ESREL)*. Research Publishing Services. doi:10.3850/978-981-11-2724-3\_0458-cd

- Estrada-Lugo, H. D., Tolo, S., de Angelis, M., & Patelli, E. (2019). Pseudo Credal Networks for Inference With Probability Intervals. *ASCE-Asme Journal Of Risk And Uncertainty In Engineering Systems Part B-Mechanical Engineering*, 5(4). doi:10.1115/1.4044239
- Faes, M., Sadeghi, J., Broggi, M., de AngDelis, M., Patelli, E., Beer, M., & Moens, D. (2019). On the Robust Estimation of Small Failure Probabilities for Strong Nonlinear Models. ASCE-ASME JOURNAL OF RISK AND UNCERTAINTY IN ENGINEERING
  SYSTEMS PART B-MECHANICAL ENGINEERING, 5(4). doi:10.1115/1.4044044
- Sadeghi, J., de Angelis, M., & Patelli, E. (2019). Efficient training of interval Neural Networks for imprecise training data. *NEURAL NETWORKS*, 118, 338-351. doi:10.1016/j.neunet.2019.07.005
- Sadeghi, J. C., de Angelis, M., & Patelli, E. (n.d.). Robust propagation of probability boxes by Interval Predictor Models. *Structural Safety*. doi:10.1016/j.strusafe.2019.101889
- de Angelis, M., Estrada Lugo, H. D., Patelli, E., & Ferson, S. (2019). *On the dimensionality of inference in credal nets with interval probabilities*. Poster session presented at the meeting of ISIPTA 2019. Ghent.
- Estrada-Lugo, H. D., de Angelis, M., & Patelli, E. (2019). Probabilistic risk assessment of fire occurrence in residential buildings: Application to the Grenfell tower. In 13th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP 2019.
- Gray, N., de Angelis, M., & Ferson, S. (2019). COMPUTING WITH UNCERTAINTY: INTRODUCING PUFFIN THE AUTOMATIC UNCERTAINTY COMPILER. In *Proceedings of the 3rd International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2019)*. Institute of Structural Analysis and Antiseismic Research School of Civil Engineering National Technical University of Athens (NTUA) Greece. doi: 10.7712/120219.6354.18702
- de Angelis, M., Ferson, S., Patelli, E., & Kreinovich, V. (2019). BLACK-BOX PROPAGATION OF FAILURE PROBABILITIES UNDER EPISTEMIC UNCERTAINTY. In *Proceedings of the 3rd International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2019)*. Institute of Structural Analysis and Antiseismic Research School of Civil Engineering National Technical University of Athens (NTUA) Greece. doi:10.7712/120219.6373.18699
- de Angelis, M., Ricciardi, V., & Dalmau, E. (2018). Uncertainty estimation of road-dust emissions via interval statistics. In *Journal of Physics: Conference Series* Vol. 1065. doi:10.1088/1742-6596/1065/21/212023
- Sadeghi, J., de Angelis, M., & Patelli, E. (2018). Frequentist history matching with Interval Predictor Models. *Applied Mathematical Modelling*, *61*, 29-48. doi:10.1016/j.apm.2018.04.003
- Comerford, L., Mannis, A., DeAngelis, M., Kougioumtzoglou, I. A., & Beer, M. (2018). Utilising database-driven interactive software to enhance independent home-study in a flipped classroom setting: going beyond visualising engineering concepts to ensuring formative assessment. *European Journal of Engineering Education*, 43(4), 522-537. doi:10.1080/03043797.2017.1293617

- Sadeghi, J., de Angelis, M., & Patelli, E. (2018, July 16). Efficient training of neural networks with interval uncertainty. In M. de Angelis (Ed.), http://rec2018.uk/papers/proceedings/proceedings.pdf (pp. 137-146). Liverpool.
- Estrada-Lugo, H. D., Patelli, E., de Angelis, M., & Raj, D. D. (2018). Bayesian networks with imprecise datasets: Application to oscillating water column. In *Safety And Reliability Safe Societies in a Changing World* (pp. 2611-2618). Retrieved from <a href="https://www.webofscience.com/api/gateway?GWVersion=2&SrcApp=PARTNER\_AP\_P&SrcAuth=LinksAMR&KeyUT=WOS:000549917603022&DestLinkType=FullRecord&DestApp=ALL\_WOS&UsrCustomerID=f3ec48df247ee1138ccd8d3ba59bacc2</a>
- Patelli, E., & de Angelis, M. (2018). An efficient computational strategy for robust maintenance scheduling: Application to corroded pipelines. In *Safety And Reliability Safe Societies in a Changing World* (pp. 2201-2209). Retrieved from <a href="https://www.webofscience.com/api/gateway?GWVersion=2&SrcApp=PARTNER\_AP\_P&SrcAuth=LinksAMR&KeyUT=WOS:000549917602033&DestLinkType=FullRecord&DestApp=ALL\_WOS&UsrCustomerID=f3ec48df247ee1138ccd8d3ba59bacc2</a>
- Sadeghi, J. C., Patelli, E., de Angelis, M., & Prinja, N. K. (2018). EFFICIENT COMPUTATIONAL STRUCTURAL RELIABILITY ANALYSIS OF CONCRETE CONTAINMENTS. In 2nd International Conference on Nuclear Power Plants: Structures, Risk & Decommissioning. Croydon, UK.
- Sadeghi, J. C., Patelli, E., & de Angelis, M. (2018). ANALYTIC

  IMPRECISE-PROBABILISTIC STRUCTURAL RELIABILITY ANALYSIS. In

  http://www.nineeng.com/bepu/images/Program%20Book%20and%20cover.pdf.

  Lucca, Italy. Retrieved from

  https://www.researchgate.net/publication/326319518\_ANALYTIC\_IMPRECISE-PR

  OBABILISTIC\_STRUCTURAL\_RELIABILITY\_ANALYSIS
- Altieri, D., Tubaldi, E., de Angelis, M., Patelli, E., & Dall'Asta, A. (2018). Reliability-based optimal design of nonlinear viscous dampers for the seismic protection of structural systems. *Bulletin of Earthquake Engineering*, *16*(2), 963-982. doi:10.1007/s10518-017-0233-4
- Sadeghi, J., Fetz, T., Oberguggenberger, M., Patelli, E., & de Angelis, M. (2018). Probability Box Propagation: Benchmarking Challenge Problems. In 19th working conference of the IFIP Working Group 7.5 on Reliability and Optimization of Structural Systems. doi:10.3929/ethz-b-000335938
- Ferrero, R., Wu, C., de Angelis, M., George-Williams, H., Patelli, E., Carboni, A., . . . IEEE. (2017). Low-Cost Battery Monitoring by Converter-Based Electrochemical Impedance Spectroscopy. In 2017 IEEE International Workshop On Applied Measurements For Power Systems (AMPS) (pp. 78-83). Retrieved from <a href="http://gateway.webofknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcApp=PARTNER\_APP&SrcAuth=LinksAMR&KeyUT=WOS:000414283000014&DestLinkType=FullRecord&DestApp=ALL\_WOS&UsrCustomerID=f3ec48df247ee1138ccd8d3ba59bacc2</a>
- Hernandez, J. E., Kacprzyk, J., Panetto, H., Fernandez, A., Liu, S., Ortiz, A., & de-Angelis, M. (2017). Challenges and solutions for enhancing agriculture value chain decision-making. A short review. In *IFIP Advances in Information and Communication Technology* Vol. 506 (pp. 761-774). Springer. doi:10.1007/978-3-319-65151-4\_68

- de Angelis, M., Patelli, E., & Beer, M. (2017). Forced Monte Carlo Simulation Strategy for the Design of Maintenance Plans with Multiple Inspections. *ASCE-ASME Journal Of Risk And Uncertainty In Engineering Systems Part A-Civil Engineering*, *3*(2). doi:10.1061/AJRUA6.0000868
- de Angelis, M., Patelli, E., & Beer, M. (2015). Robust design of inspection schedules by means of probability boxes for structural systems prone to damage accumulation. In *European Safety and Reliability Conference* (pp. 2733-2741). CRC Press. doi:10.1201/b19094-358
- Patelli, E., & de Angelis, M. (2015). Line sampling approach for extreme case analysis in presence of aleatory and epistemic uncertainties. In *Unknown Conference* (pp. 2585-2593). CRC Press. doi:10.1201/b19094-339
- de Angelis, M. (2015, July 15). Efficient random set uncertainty quantification by means of advanced sampling techniques. (PhD Thesis, University of Liverpool).
- de Angelis, M., Patelli, E., & Beer, M. (2015). Uncertainty management of safety-critical systems: A solution to the back-propagation problem. In 12th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP 2015.
- Patelli, E., Alvarez, D. A., Broggi, M., & de Angelis, M. (n.d.). Uncertainty management in multidisciplinary design of critical safety systems. *Journal of Aerospace Information Systems*, *12*(1), 140-169. doi:10.2514/1.I010273
- de Angelis, M., Patelli, E., & Beer, M. (2015). Advanced Line Sampling for efficient robust reliability analysis. *Structural Safety*, 52, 170-182. doi:10.1016/j.strusafe.2014.10.002
- Beer, M., de Angelis, M., & Kreinovich, V. (2014). Towards Efficient Ways of Estimating Failure Probability of Mechanical Structures Under Interval Uncertainty. In *Vulnerability, Uncertainty, and Risk*. American Society of Civil Engineers. doi:10.1061/9780784413609.033
- Tubaldi, E., Dall'Asta, A., Broggi, M., Patelli, E., & de Angelis, M. (2014). Reliability-Based Design of Fluid Viscous Damper for Seismic Protection of Building Frames. American Society of Civil Engineers. doi:10.1061/9780784413609.177
- de Angelis, M., Patelli, E., & Beer, M. (2014). Line Sampling for Assessing Structural Reliability with Imprecise Failure Probabilities. American Society of Civil Engineers. doi:10.1061/9780784413609.093
- Deodatis, G., Ellingwood, B. R., & Frangopol, D. M. (Eds.) (n.d.). Safety, Reliability, Risk and Life-Cycle Performance of Structures and Infrastructures. CRC Press. doi:10.1201/b16387
- Patelli, E., Alvarez, D. A., Broggi, M., & de Angelis, M. (2014). An integrated and efficient numerical framework for uncertainty quantification: application to the NASA Langley multidisciplinary Uncertainty Quantification Challenge. In *16th AIAA Non-Deterministic Approaches Conference*. American Institute of Aeronautics and Astronautics. doi:10.2514/6.2014-1501

- Comerford, L., DeAngelis, M., Mannis, A., Beer, M., & Kougioumtzoglou, I. (2014). An open approach to educational resource development, with a specific example from structural engineering. In *SEFI Annual Conference 2014*. Birmingham. Retrieved from <a href="https://www.sefi.be/wp-content/uploads/2017/10/0127.pdf">https://www.sefi.be/wp-content/uploads/2017/10/0127.pdf</a>
- Gabriele, S., Valente, C., & de Angelis, M. (2013). Interval solution and robust validation of uncertain elastic beams. In Safety, Reliability, Risk and Life-Cycle Performance of Structures and Infrastructures Proceedings of the 11th International Conference on Structural Safety and Reliability, ICOSSAR 2013 (pp. 445-452).
- de Angelis, M., Patelli, E., & Beer, M. (2013). An efficient strategy for computing interval expectations of risk. In *Safety, Reliability, Risk and Life-Cycle Performance of Structures and Infrastructures Proceedings of the 11th International Conference on Structural Safety and Reliability, ICOSSAR 2013* (pp. 2225-2232).
- Patelli, E., Valdebenito, M. A., & de Angelis, M. (2013). On Robust Maintenance Scheduling of Fatigue-prone Structural Systems Considering Imprecise Probability. In *2013 Prognostics and Health Management Conference (PHM)* Vol. 33 (pp. 1081-1086). doi:10.3303/CET1333181
- Patelli, E., & de Angelis, M. (2012). An open computational framework for reliability based optimization. In *Civil-Comp Proceedings* Vol. 99.