

Submitted

1. Kamariotis A., Sardi L., Papaioannou I., Chatzi E., Straub D.: On off-line and on-line Bayesian filtering for uncertainty quantification of structural deterioration. *Data-Centric Engineering*, under review.
2. Bismut E., Cotoarba D., Spross J., Straub D.: Optimal adaptive decision rules in geotechnical construction considering uncertainty. *Geotechnique*, under review.
3. Chan J., Papaioannou I., Straub D.: Bayesian improved cross entropy method for network reliability assessment. *Structural Safety*, under review.
4. Teichgräber M., Fusseder M., Bletzinger K., Straub D.: Non-linear structural models and the partial safety factor concept. *Structural Safety*, under review.
5. Kryda M., Berk M., Qiu M., Buschardt B., Straub D.: Assessing Perception Sensor Reliability from Field Tests Without Reference Truth. *IEEE Transactions on Reliability*, under review.
6. Kanjilal O., Papaioannou I., Straub D.: Bayesian updating of reliability by cross entropy-based importance sampling. *Structural Safety*, under review.
7. Arcieria G., Hoelzl C., Schwery O., Straub D., Papakonstantinou K.G., Chatzi E.: Bridging POMDPs and Bayesian decision making for robust maintenance planning under model uncertainty: An application to railway systems. *Reliability Engineering & System Safety*, under review.
8. Geyer S., Papaioannou I., Straub D.: Spatial modeling of concrete strength based on data, *Structural Safety*, under review.

Books edited

1. Klüppelberg C., Straub D., Welpel I. (eds.) (2014): *Risk - A Multidisciplinary Introduction*. Springer. ISBN: 978-3-319-04485-9.
2. Vogt N., Schuppener B., Straub D., Bräu G. (eds.), (2011). *Geotechnical Risk and Safety*. Bundesanstalt für Wasserbau. ISBN: 978-3-939230-01-4.
3. Straub D. (ed.), (2010). *Reliability and Optimization of Structural Systems*. CRC Press, Taylor and Francis Group, London, UK. ISBN: 978-0-415-88179-1.

Book chapters

1. Straub D., Papaioannou I. (2015): Bayesian analysis for learning and updating geotechnical parameters and models with measurements. Chapter 5 in: *Risk and Reliability in Geotechnical Engineering* (eds. Phoon K.-K., Ching J.), CRC Press.
2. Straub D., Welpel I. (2014): Decision-making under risk: a normative and behavioral perspective. Chapter 3 in: *Risk - A Multidisciplinary Introduction* (eds. Klüppelberg C., Straub D., Welpel I.), Springer.
3. Straub D. (2014): Engineering Risk Assessment. Chapter 12 in: *Risk - A Multidisciplinary Introduction* (eds. Klüppelberg C., Straub D., Welpel I.), Springer.

Lecture notes for courses at TUM

1. Straub D. (2021). *Stochastik und Risiko – Eine Einführung für Ingenieure*, 281 pages
2. Straub D. (2020). *Lecture Notes in Engineering Risk Analysis*, 475 pages
3. Straub D. (2014). *Lecture Notes in Structural Reliability*, 97 pages
4. Straub D. (2013). *Zuverlässigkeit und Lastannahmen*, 181 pages
5. Straub D. (2012). *Einführung ins Risikomanagement für Umweltingenieure*, 135 pages.

Referred journal publications

1. Rosero-Velásquez H., Straub D.: Selecting representative natural hazard scenarios for engineering systems. *Earthquake Engineering & Structural Dynamics*, in print.
2. Ehre M., Flock R., Papaioannou I., Straub D.: Certified Dimension Reduction for Bayesian Updating with the Cross-Entropy Method. *SIAM Journal of Uncertainty Quantification*, in print.
3. Engel M., Kanjilal O., Papaioannou I., Straub D.: Bayesian updating and marginal likelihood estimation by cross entropy based importance sampling. *Journal of Computational Physics*, in print.
4. Lopez R.H., Bismut E., Straub D.: Stochastic efficient global optimization with high noise variance and mixed design variables. *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, in print.
5. Kamariotis A., Chatzi E., Straub D. (2023). A framework for quantifying the value of vibration-based structural health monitoring. *Mechanical Systems and Signal Processing*, **184**(1): 109708.
6. Straub D., Ehre M., Papaioannou I. (2022). Decision-theoretic reliability sensitivity, *Reliability Engineering & System Safety*, **221**: 108215
7. Teichgräber M., Köhler J., Straub D. (2022). Hidden safety in structural design codes. *Engineering Structures*, **257**: 114017
8. Betz W., Papaioannou I., Straub D. (2022). Bayesian post-processing of Monte Carlo simulation in reliability analysis. *Reliability Engineering & System Safety*, **227**:108731.
9. Ehre M., Papaioannou I., Sudret B., Straub D. (2022). Sequential active learning of low-dimensional model representations for reliability analysis, *SIAM Journal on Scientific Computing*, **44**(3): B558-B584.
10. Bismut E., Straub D. (2022). A unifying review of NDE models in view of optimal decision support. *Structural Safety*, 97: **102213**
11. Geyer S., Papaioannou I., Graham-Brady L., Straub D. (2022). The spatial averaging method for non-homogeneous random fields with application to reliability analysis. *Engineering Structures*, **253**:113761.
12. Wagner P.-R., Papaioannou I., Marelli S., Straub D., Sudret B. (2022). Rare event estimation using stochastic spectral embedding, *Structural Safety*, **96**:102179.
13. Kamariotis A., Chatzi E., Straub D. (2022). Value of information from vibration-based structural health monitoring extracted via Bayesian model updating. *Mechanical Systems and Signal Processing*, **166**: 108465
14. Betz W., Papaioannou I., Zeh T., Hesping D., Krauss T., Straub D. (2022). Data-driven predictive maintenance for gas distribution networks. *ASCE-ASME Journal of Risk and Uncertainty Analysis, Part A*, **8**(2): 04022016.
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17. Kanjilal O., Papaioannou I., Straub D. (2022). Series system reliability of uncertain linear structures under Gaussian excitation by cross entropy-based importance sampling. *ASCE Journal of Engineering Mechanics*, **148**(1): 04021136
18. Mendoza J., Bismut E., Straub D., Köhler J. (2022). Optimal life-cycle mitigation of fatigue failure risk for structural systems. *Reliability Engineering & System Safety*, **222**: 108390.
19. Schneider F., Papaioannou I., Straub D., Winter C., Müller G. (2022). Bayesian updating in linear structural dynamics with frequency transformed data using rational surrogate models. *Mechanical Systems and Signal Processing*, **166**:108407.
20. Bismut E., Straub D. (2021). Optimal adaptive inspection and maintenance planning for deteriorating structural systems, *Reliability Engineering & System Safety*, **215**:107891.

21. Papaioannou I., Straub D. (2021). Combination line sampling for structural reliability analysis. *Structural Safety*, **88**: 102025
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31. Berk M., Schubert O., Kroll H.-M., Buschardt B., Straub D. (2020). Exploiting redundancy for reliability analysis of sensor perception in automated driving vehicles. *IEEE Transactions on Intelligent Transportation Systems*, **21**(12): 5073 – 5085.
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