Daniel Straub

List of Publications by Year
in descending order

146 papers	4,673 citations	94433 37 h-index	114465 63 g-index
151 all docs	151 docs citations	151 times ranked	2630 citing authors

#	Article	IF	Citations
1	Value of information from vibration-based structural health monitoring extracted via Bayesian model updating. Mechanical Systems and Signal Processing, 2022, 166, 108465.	8.0	49
2	Bayesian parameter updating in linear structural dynamics with frequency transformed data using rational surrogate models. Mechanical Systems and Signal Processing, 2022, 166, 108407.	8.0	9
3	Series System Reliability of Uncertain Linear Structures under Gaussian Excitation by Cross Entropy–Based Importance Sampling. Journal of Engineering Mechanics - ASCE, 2022, 148, .	2.9	4
4	The spatial averaging method for non-homogeneous random fields with application to reliability analysis. Engineering Structures, 2022, 253, 113761.	5.3	3
5	Decision-theoretic reliability sensitivity. Reliability Engineering and System Safety, 2022, 221, 108215.	8.9	9
6	Optimal life-cycle mitigation of fatigue failure risk for structural systems. Reliability Engineering and System Safety, 2022, 222, 108390.	8.9	7
7	A unifying review of NDE models towards optimal decision support. Structural Safety, 2022, 97, 102213.	5.3	3
8	Reliability-based inspection and maintenance planning of a nuclear feeder piping system. Reliability Engineering and System Safety, 2022, 224, 108521.	8.9	12
9	Data-Driven Predictive Maintenance for Gas Distribution Networks. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2022, 8, .	1.7	2
10	An adaptive subset simulation algorithm for system reliability analysis with discontinuous limit states. Reliability Engineering and System Safety, 2022, 225, 108607.	8.9	16
11	Sequential Active Learning of Low-Dimensional Model Representations for Reliability Analysis. SIAM Journal of Scientific Computing, 2022, 44, B558-B584.	2.8	6
12	Combination line sampling for structural reliability analysis. Structural Safety, 2021, 88, 102025.	5.3	42
13	Risk-Based Fatigue Design Considering Inspections and Maintenance. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2021, 7, .	1.7	1
14	Cross-Entropy-Based Importance Sampling with Failure-Informed Dimension Reduction for Rare Event Simulation. SIAM-ASA Journal on Uncertainty Quantification, 2021, 9, 818-847.	2.0	17
15	Variance-based reliability sensitivity analysis and the FORM α-factors. Reliability Engineering and System Safety, 2021, 210, 107496.	8.9	24
16	Bayesian inference with subset simulation in varying dimensions applied to the Karhunen–Loève expansion. International Journal for Numerical Methods in Engineering, 2021, 122, 5100-5127.	2.8	2
17	Cross entropy-based importance sampling for first-passage probability estimation of randomly excited linear structures with parameter uncertainty. Structural Safety, 2021, 91, 102090.	5.3	11
18	Conditional reliability analysis in high dimensions based on controlled mixture importance sampling and information reuse. Computer Methods in Applied Mechanics and Engineering, 2021, 381, 113826.	6.6	8

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19	Optimal adaptive inspection and maintenance planning for deteriorating structural systems. Reliability Engineering and System Safety, 2021, 215, 107891.	8.9	22
20	Bayesian analysis of hierarchical random fields for material modeling. Probabilistic Engineering Mechanics, 2021, 66, 103167.	2.7	5
21	Parameter tuning for a Markov-based multi-sensor system. , 2021, , .		3
22	Reliability analysis of deteriorating structural systems. Structural Safety, 2020, 82, 101877.	5.3	45
23	Bayesian inference of random fields represented with the Karhunen–Loève expansion. Computer Methods in Applied Mechanics and Engineering, 2020, 358, 112632.	6.6	25
24	Reliability assessment of large hydraulic structures with spatially distributed measurements. Structure and Infrastructure Engineering, 2020, 16, 599-612.	3.7	10
25	A framework for global reliability sensitivity analysis in the presence of multi-uncertainty. Reliability Engineering and System Safety, 2020, 195, 106726.	8.9	17
26	Sparse Polynomial Chaos expansions using variational relevance vector machines. Journal of Computational Physics, 2020, 416, 109498.	3.8	14
27	Polynomial chaos based rational approximation in linear structural dynamics with parameter uncertainties. Computers and Structures, 2020, 233, 106223.	4.4	8
28	Exploiting Redundancy for Reliability Analysis of Sensor Perception in Automated Driving Vehicles. IEEE Transactions on Intelligent Transportation Systems, 2020, 21, 5073-5085.	8.0	28
29	Global sensitivity analysis in high dimensions with PLS-PCE. Reliability Engineering and System Safety, 2020, 198, 106861.	8.9	18
30	Optimization of Site-Exploration Programs for Slope-Reliability Assessment. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2020, 6, 04020004.	1.7	20
31	Combinatorial analysis for probabilistic assessment of dependent failures in systems and portfolios. Probabilistic Engineering Mechanics, 2020, 61, 103066.	2.7	0
32	Probabilistic failure analysis of infinite slopes under random rainfall processes and spatially variable soil. Georisk, 2019, 13, 20-33.	3.5	23
33	Cross entropy-based importance sampling using Gaussian densities revisited. Structural Safety, 2019, 76, 15-27.	5.3	65
34	Improved cross entropy-based importance sampling with a flexible mixture model. Reliability Engineering and System Safety, 2019, 191, 106564.	8.9	53
35	Reliability Assessment of Safety-Critical Sensor Information: Does One Need a Reference Truth?. IEEE Transactions on Reliability, 2019, 68, 1227-1241.	4.6	13
36	Global reliability sensitivity estimation based on failure samples. Structural Safety, 2019, 81, 101871.	5.3	15

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37	Evaluating component importance and reliability of power transmission networks subject to windstorms: methodology and application to the nordic grid. Reliability Engineering and System Safety, 2019, 191, 106517.	8.9	28
38	Predictive repair scheduling of wind turbine drive‑train components based on machine learning. Wind Energy, 2019, 22, 1230-1242.	4.2	17
39	Assessment and design of an engineering structure with polymorphic uncertainty quantification. GAMM Mitteilungen, 2019, 42, e201900009.	5.5	11
40	Challenges of order reduction techniques for problems involving polymorphic uncertainty. GAMM Mitteilungen, 2019, 42, e201900011.	5.5	5
41	PLS-based adaptation for efficient PCE representation in high dimensions. Journal of Computational Physics, 2019, 387, 186-204.	3.8	34
42	Risk-based optimal inspection strategies for structural systems using dynamic Bayesian networks. Structural Safety, 2019, 76, 68-80.	5.3	79
43	Matrix-based Bayesian Network for efficient memory storage and flexible inference. Reliability Engineering and System Safety, 2019, 185, 533-545.	8.9	16
44	Managing uncertainty in design flood magnitude: Flexible protection strategies versus safety factors. Journal of Flood Risk Management, 2019, 12, .	3.3	7
45	Bayesian inference with reliability methods without knowing the maximum of the likelihood function. Probabilistic Engineering Mechanics, 2018, 53, 14-22.	2.7	13
46	Bayesian updating of slope reliability in spatially variable soils with in-situ measurements. Engineering Geology, 2018, 239, 310-320.	6.3	101
47	An Improved Non-parametric Bayesian Independence Test for Probabilistic Learning of the Dependence Structure Among Continuous Random Variables. KSCE Journal of Civil Engineering, 2018, 22, 974-986.	1.9	0
48	Bayesian inference with Subset Simulation: Strategies and improvements. Computer Methods in Applied Mechanics and Engineering, 2018, 331, 72-93.	6.6	56
49	Managing uncertainty in flood protection planning with climate projections. Hydrology and Earth System Sciences, 2018, 22, 2511-2526.	4.9	7
50	Risk-based flood protection planning under climate change and modeling uncertainty: a pre-alpine case study. Natural Hazards and Earth System Sciences, 2018, 18, 1327-1347.	3.6	5
51	Efficient Conditional Reliability Updating with Sequential Importance Sampling. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800282.	0.2	2
52	Assessing the Utility of Early Warning Systems for Detecting Failures in Major Wind Turbine Components. Journal of Physics: Conference Series, 2018, 1037, 032005.	0.4	6
53	Bayesian network for risk‑informed inspection planning in ships. Beton- Und Stahlbetonbau, 2018, 113, 116-121.	0.4	4
54	Reliability sensitivity estimation with sequential importance sampling. Structural Safety, 2018, 75, 24-34.	5.3	82

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55	Reliability and Component Importance in Networks Subject to Spatially Distributed Hazards Followed by Cascading Failures. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering, 2017, 3, .	1.1	12
56	Spatial Probabilistic Modeling of Corrosion in Ship Structures. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering, 2017, 3, .	1.1	8
57	Bayesian updating with subset simulation using artificial neural networks. Computer Methods in Applied Mechanics and Engineering, 2017, 319, 124-145.	6.6	47
58	Reliability Updating in the Presence of Spatial Variability. Springer Series in Reliability Engineering, 2017, , 365-383.	0.5	1
59	Long-term adaption decisions via fully and partially observable Markov decision processes. Sustainable and Resilient Infrastructure, 2017, 2, 37-58.	2.8	26
60	Probabilistic prediction of wildfire economic losses to housing in Cyprus using Bayesian network analysis. International Journal of Wildland Fire, 2017, 26, 10.	2.4	24
61	How Subjective Are Geotechnical Reliability Estimates?. , 2017, , .		0
62	Risk analysis of the EASA minimum fuel requirements considering the ACARE-defined safety target. Journal of Air Transport Management, 2017, 65, 1-10.	4.5	5
63	Probabilistic Design Storm Method for Improved Flood Estimation in Ungauged Catchments. Water Resources Research, 2017, 53, 10701-10722.	4.2	8
64	Closure to "Transitional Markov Chain Monte Carlo: Observations and Improvements" by Wolfgang Betz, Iason Papaioannou, and Daniel Straub. Journal of Engineering Mechanics - ASCE, 2017, 143, 07017002.	2.9	1
65	Capturing cognitive causal paths in human reliability analysis with Bayesian network models. Reliability Engineering and System Safety, 2017, 158, 117-129.	8.9	49
66	Reliability analysis and updating of deteriorating systems with subset simulation. Structural Safety, 2017, 64, 20-36.	5.3	55
67	Learning soil parameters and updating geotechnical reliability estimates under spatial variability – theory and application to shallow foundations. Georisk, 2017, 11, 116-128.	3.5	32
68	Coupling the cross-entropy with the line sampling method for risk-based design optimization. Structural and Multidisciplinary Optimization, 2017, 55, 1589-1612.	3.5	12
69	Optimizing Borehole Locations for Slope Reliability Assessment. , 2017, , .		3
70	Probabilistic prediction of daily fire occurrence in the Mediterranean with readily available spatio-temporal data. IForest, 2017, 10, 32-40.	1.4	10
71	Quantifying the effectiveness of early warning systems for natural hazards. Natural Hazards and Earth System Sciences, 2016, 16, 149-166.	3.6	27
72	A discretization procedure for rare events in Bayesian networks. Reliability Engineering and System Safety, 2016, 153, 96-109.	8.9	26

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73	Sequential importance sampling for structural reliability analysis. Structural Safety, 2016, 62, 66-75.	5.3	149
74	Reliability analysis and updating of deteriorating systems with dynamic Bayesian networks. Structural Safety, 2016, 62, 34-46.	5.3	96
75	Transitional Markov Chain Monte Carlo: Observations and Improvements. Journal of Engineering Mechanics - ASCE, 2016, 142, .	2.9	91
76	Bayesian analysis of rare events. Journal of Computational Physics, 2016, 314, 538-556.	3.8	56
77	Probabilistic approach to assessing and monitoring settlements caused by tunneling. Tunnelling and Underground Space Technology, 2016, 51, 313-325.	6.2	29
78	Forecasting rock slope failure: how reliable and effective are warning systems?. Landslides, 2016, 13, 737-750.	5.4	42
79	Assessing and updating the reliability of concrete bridges subjected to spatial deterioration â€" principles and software implementation. Structural Concrete, 2015, 16, 356-365.	3.1	27
80	Costâ€Benefit Analysis for Optimization of Risk Protection Under Budget Constraints. Risk Analysis, 2015, 35, 941-959.	2.7	29
81	Framework for Post-Earthquake Risk Assessment and Decision Making for Infrastructure Systems. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2015, 1, 04014003.	1.7	24
82	Reliability and effectiveness of early warning systems for natural hazards: Concept and application to debris flow warning. Reliability Engineering and System Safety, 2015, 142, 192-202.	8.9	85
83	MCMC algorithms for Subset Simulation. Probabilistic Engineering Mechanics, 2015, 41, 89-103.	2.7	244
84	Bayesian Updating with Structural Reliability Methods. Journal of Engineering Mechanics - ASCE, 2015, 141, .	2.9	188
85	Risk Management in Bavarian Alpine Torrents: A Framework for Flood Risk Quantification Accounting for Subscenarios. , 2015, , 437-441.		2
86	Optimal Flood Risk Managementâ€"Decision Process in Practice. , 2014, , .		1
87	Bayesian Model Calibration using Structural Reliability Methods: Application to the Hydrological abc Model. , 2014, , .		0
88	Reliability assessment of high cycle fatigue under variable amplitude loading: Review and solutions. Engineering Fracture Mechanics, 2014, 121-122, 40-66.	4.3	30
89	Numerical methods for the discretization of random fields by means of the Karhunenâ€"LoÃ¨ve expansion. Computer Methods in Applied Mechanics and Engineering, 2014, 271, 109-129.	6.6	194
90	Corrosion-fatigue under Rainwater of a Q&T Steel: Experiments and Probabilistic Description. Procedia Engineering, 2014, 74, 12-17.	1.2	7

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91	Value of information analysis with structural reliability methods. Structural Safety, 2014, 49, 75-85.	5.3	128
92	Updating of service-life prediction of reinforced concrete structures with potential mapping. Cement and Concrete Composites, 2014, 47, 47-52.	10.7	21
93	Spatial Model for Corrosion in Ships and FPSOs. , 2014, , .		2
94	Engineering Risk Assessment. , 2014, , 333-362.		6
95	Effect of different inspection strategies on the reliability of Daniels systems subjected to fatigue. , 2014, , 2637-2644.		3
96	Spatial reliability analysis of a concrete bridge subject to corrosion conditional on monitoring results. , 2014, , 2673-2679.		1
97	Decision-Making Under Risk: A Normative and Behavioral Perspective. , 2014, , 63-93.		4
98	A software prototype for assessing the reliability of a concrete bridge superstructure subjected to chloride-induced reinforcement corrosion. Life-cycle of Civil Engineering Systems, 2014, , 846-853.	0.1	2
99	Dynamic Bayesian Network for Probabilistic Modeling of Tunnel Excavation Processes. Computer-Aided Civil and Infrastructure Engineering, 2013, 28, 1-21.	9.8	73
100	Efficient Bayesian network modeling of systems. Reliability Engineering and System Safety, 2013, 112, 200-213.	8.9	102
101	Probabilistic assessment of tunnel construction performance based on data. Tunnelling and Underground Space Technology, 2013, 37, 62-78.	6.2	44
102	Development of a probabilistic model for the prediction of building damage due to tunneling induced settlements. , 2013, , 485-491.		1
103	Probabilistic Graphical Models for Flood State Detection of Roads Combining Imagery and DEM. IEEE Geoscience and Remote Sensing Letters, 2012, 9, 1051-1055.	3.1	14
104	Toward a probabilistic acoustic emission source location algorithm: A Bayesian approach. Journal of Sound and Vibration, 2012, 331, 4233-4245.	3.9	48
105	Risk assessment for structural design criteria of FPSO systems. Part II: Consequence models and applications to determination of target reliabilities. Marine Structures, 2012, 28, 50-66.	3.8	20
106	Risk assessment for structural design criteria of FPSO systems. Part I: Generic models and acceptance criteria. Marine Structures, 2012, 28, 120-133.	3.8	21
107	Nested reliability analysis of mooring lines for floating systems. Applied Ocean Research, 2012, 34, 107-115.	4.1	17
108	Reliability updating in geotechnical engineering including spatial variability of soil. Computers and Geotechnics, 2012, 42, 44-51.	4.7	91

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109	Reliability Acceptance Criteria for Deteriorating Elements of Structural Systems. Journal of Structural Engineering, 2011, 137, 1573-1582.	3.4	29
110	Bayesian network modeling of correlated random variables drawn from a Gaussian random field. Structural Safety, 2011, 33, 317-332.	5.3	48
111	Reliability updating with equality information. Probabilistic Engineering Mechanics, 2011, 26, 254-258.	2.7	97
112	Bayesian Network Enhanced with Structural Reliability Methods: Methodology. Journal of Engineering Mechanics - ASCE, 2010, 136, 1248-1258.	2.9	136
113	Bayesian Network Enhanced with Structural Reliability Methods: Application. Journal of Engineering Mechanics - ASCE, 2010, 136, 1259-1270.	2.9	86
114	FPSO Risk Assessment and Acceptance Criteria With Application to FPSO Mooring Systems. , 2009, , .		0
115	Risk Based Structural Integrity Management of Marine Platforms Using Bayesian Probabilistic Nets. Journal of Offshore Mechanics and Arctic Engineering, 2009, 131, .	1.2	6
116	A Bayesian Network Framework for Post-Earthquake Infrastructure System Performance Assessment. , 2009, , .		8
117	Stochastic Modeling of Deterioration Processes through Dynamic Bayesian Networks. Journal of Engineering Mechanics - ASCE, 2009, 135, 1089-1099.	2.9	184
118	A framework for the asset integrity management of large deteriorating concrete structures. Structure and Infrastructure Engineering, 2009, 5, 199-213.	3.7	21
119	Improved seismic fragility modeling from empirical data. Structural Safety, 2008, 30, 320-336.	5.3	142
120	Modeling and managing uncertainties in rock-fall hazards. Georisk, 2008, 2, 1-15.	3.5	49
121	Temporal Variability in Corrosion Modeling and Reliability Updating. Journal of Offshore Mechanics and Arctic Engineering, 2007, 129, 265-272.	1.2	12
122	Computational Aspects of Risk-Based Inspection Planning. Computer-Aided Civil and Infrastructure Engineering, 2006, 21, 179-192.	9.8	71
123	A Bayesian probabilistic framework for avalanche modelling based on observations. Cold Regions Science and Technology, 2006, 46, 192-203.	3.5	52
124	On the Quantification of Robustness of Structures. , 2006, , 79.		10
125	Benefits of Risk Based Inspection Planning for Offshore Structures. , 2006, , 59.		7
126	A Computational Framework for Risk Assessment of RC Structures Using Indicators. Computer-Aided Civil and Infrastructure Engineering, 2006, 21, 216-230.	9.8	27

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127	Risk Based Structural Integrity Management Using Bayesian Probabilistic Nets. , 2006, , 311.		1
128	Risk based inspection planning for structural systems. Structural Safety, 2005, 27, 335-355.	5.3	177
129	Temporal Variability in Corrosion Modeling and Reliability Updating. , 2005, , 97.		0
130	An Overview of the Reassessment Studies of Fixed Offshore Platforms in the Bay of Campeche, Mexico. , 2005, , 123.		3
131	Risk Based Acceptance Criteria for Joints Subject to Fatigue Deterioration. Journal of Offshore Mechanics and Arctic Engineering, 2005, 127, 150-157.	1.2	20
132	Field Implementation of RBI for Jacket Structures. Journal of Offshore Mechanics and Arctic Engineering, 2005, 127, 220-226.	1.2	33
133	Fatigue Analysis and Risk Based Inspection Planning for Life Extension of Fixed Offshore Platforms. , 2005, , 511.		2
134	System Effects in Generic Risk-Based Inspection Planning. Journal of Offshore Mechanics and Arctic Engineering, 2004, 126, 265-271.	1.2	18
135	Recent Advances in Risk Based Inspection Planning for Structures. , 2004, , 2416-2422.		22
136	Unified Approach to Risk-Based Inspection Planning for Offshore Production Facilities. Journal of Offshore Mechanics and Arctic Engineering, 2003, 125, 126-131.	1.2	18
137	Field Implementation of RBI for Jacket Structures. , 2003, , 295.		5
138	Risk Based Acceptance Criteria for Joints Subject to Fatigue Deterioration. , 2003, , .		4
139	System Effects in Generic Risk Based Inspection Planning. , 2002, , 391.		2
140	Risk-Based Inspection Planning of Offshore Installations. Structural Engineering International: Journal of the International Association for Bridge and Structural Engineering (IABSE), 2002, 12, 200-208.	0.8	27
141	Risk based inspection planning Methodology and application to an offshore structure. Revue Européenne De Génie Civil, 2002, 6, 489-503.	0.0	4
142	Bayesian Test Design for Reliability Assessments of Safety-Relevant Environment Sensors Considering Dependent Failures. , 0, , .		7
143	Validating an Approach to Assess Sensor Perception Reliabilities Without Ground Truth. , 0, , .		0
144	Progress of the COST Action TU1402 on the Quantification of the Value of Structural Health Monitoring. , 0, , .		14

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145	A Stochastic Physical Simulation Framework to Quantify the Effect of Rainfall on Automotive Lidar. SAE International Journal of Advances and Current Practices in Mobility, 0, 1, 531-538.	2.0	9
146	Integrated Life-cycle Decision Framework for Structural Systems. , 0, , .		0