

CV Daniel Straub
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Name: Daniel STRAUB
Date and place of birth: 30 November 1975, Schlieren, Switzerland
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References

Prof. Dr. Armen Der Kiureghian
Taisei Chair of Civil Engineering, University of California, Berkeley
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Prof. Dr. Michael H. Faber
Professor für Risiko und Sicherheit, Departement Bau und Umwelt, ETH Zürich
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Prof. Dr. Marc A. Maes
Professor in Civil Engineering, University of Calgary, Canada
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Further references upon request.

Education

2000 – 2004 PhD degree
University: ETH Zürich (Swiss Federal Institute of Technology)
Subject: Risk and Reliability Analysis in Engineering
Title: “Generic Approaches to Risk Based Inspection Planning for Steel Structures”
Supervisor: Prof. Dr. Michael H. Faber
Degree: Dr. sc. techn. ETH

1995 – 2000 Diploma in Civil Engineering (MSc equivalent)
University: Swiss Federal Institute of Technology (ETH), Zürich, Switzerland
Subject: General civil engineering, with emphasis in Structural Engineering
Degree: Dipl. Bau-Ing. ETH

1990 – 1995 A-levels
School: Gymnasium Zürich-Oerlikon
Degree: Matura

General skills

Languages

German (mother tongue)
English (fluent)
Spanish (fluent)
French (very good)

Computing

Advanced programming skills in: Fortran, Matlab, Visual Basic.
(Development of the inspection planning software iPlan and several Fortran-based structural reliability modules)
Proficiency in various engineering and common office software.
Experience in Web Publishing, incl. HTML.

Management

Experience in the project management of consulting engineering projects & research projects.
Experience in the management of a small consulting company, includes leading technical and administrative part-time staff.
Experience in guiding and leading PhD and MSc students.

Honours

2006 – 2008: SNF (Swiss National Science Foundation) Fellowship for advanced researchers (approx. 125'000SFr.).

Silbermedaille for an outstanding (top 8%) PhD thesis from the Swiss Federal Institute of Technology (ETH Zürich).

René-Hornung-Medal of the Swiss society for nondestructive testing (SGZP), including an amount of 3000 SFr, awarded for the PhD thesis.

Memberships

Member of the Society for Risk Analysis, SRA, since 2005.

Member of the Swiss Association of Engineers and Architects, SIA, since 2001.

Positions held

<u>Period</u>	<u>Institution</u>	<u>Position and main responsibilities</u>
Since Dec. 2008	TU München	<u>Associate Professor (W2)</u> Representing <i>engineering risk and reliability analysis</i> in research and teaching at TUM. Development of and procuring funding for new research projects. Teaching at undergraduate and graduate level. Guidance of PhD and MSc students.
Since 2004 (part-time)	Matrisk, Zürich	<u>Co-founder & Managing Director</u> Engineering and consulting related to the management of technical risks. Company management (2004-2008)
2008 (2 months)	Instituto Mexicano de Petroleo (IMP), Mexico City	<u>Visiting Researcher</u> Development of integral risk assessment procedures for floating production systems.
2006 - 2008	University of California, Berkeley	<u>Postdoctoral Researcher & Lecturer</u> Teaching CEE 193: Engineering risk analysis. Performing independent research related to decision analysis for large and complex engineering systems. Guidance of PhD students. Development of new research projects and proposals
2004 - 2005	ETH Zürich	<u>Research Associate</u> Project management of an interdisciplinary research project on integral natural hazards assessment and management. Development of and procuring funding for new research projects. Supervision of MSc & PhD students and teaching activities.
2001 (6 months)	Bureau Veritas, Paris	<u>Visiting researcher</u> Development of risk based inspection planning procedures.
2000 – 2004	ETH Zürich	<u>Research Assistant</u> Research project on risk based inspection planning for structures, teaching activities.
1998 – 1999	ETH, Zürich	<u>Teaching assistant</u> Teaching exercise classes in structural mechanics and dynamics.

Supervision of PhD and MSc projects

<u>Year</u>	<u>Student (degree)</u>	<u>Project</u>
Since 2010	Liang Si (PhD)	Reliability of structures with monitoring systems
Since 2009	Johannes Fischer (PhD)	Reliability analysis and life-cycle optimization of large-scale RC structures
Since 2009	Qamar Mahboob (PhD)	Safety and risk analysis of rail systems using BN
Since 2009	Panagiota Papakosta (PhD)	Bayesian decision analysis for natural hazards management
Since 2007	Michelle Bensi (PhD) *	Bayesian networks for near-real-time decision support in civil systems
2004 – 2006	Matthias Schubert (PhD) *	Risk acceptance criteria for exceptional loadings on structures
2005 – 2006	Adrienne Grêt-Regamey (PhD) *	Spatially explicit modelling of natural hazard risks using Bayesian networks
2004 – 2006	Vasiliki Malioka (PhD) *	Spatial variability of concrete properties in structural elements
2004 – 2006	Kazuyoshi Nijishima (PhD) *	Sustainable decision making in engineering
2003 – 2004	Michael Stadelmann (MSc) *	Categorization of influence parameters of fatigue deterioration in railway bridges
2002 – 2003	Daniel Rusch (MSc) *	Spatial simulation of deterioration processes using stochastic finite elements

(* Co-supervised mit Profs. Faber, Der Kiureghian or Schmidt)

Collaborations with postdoctoral researchers

<u>Year</u>	<u>Researcher</u>	<u>Topic</u>
Since 2009	Giulio Cottone	Applications of fractional calculus to reliability analysis

Active participation in research projects and committees

- 2009 – 2010 Development of a methodology for risk-based planning of inspections for roadway bridges, financed by BAST (Bundesanstalt für Strassenwesen), Germany.
- 2005 – 2006 Deputy project manager of “Strategie Naturgefahren Schweiz” (Strategy Natural Hazards for Switzerland) for Planat (the National Platform for Natural Hazards of the Swiss Federal Council).
- 2004 – 2006 Risk Acceptance Criteria for Exceptional Loadings on Structures, research project sponsored by the Swiss Federal Roads Authority.
- 2004 – 2005 Project manager of the “Natural Hazards in an Alpine Valley”, interdisciplinary research project sponsored by ETH Zürich.
- 2001 – 2005 Saferelnet Thematic Network: “Safety and Reliability of Industrial Projects, Systems and Structures”, funded by the European Union.
- 2004 Assessment of flood hazard risks. VAW Zürich.
- 2001 – 2004 CRIS (Corrosion Reliability and Inspection Scheduling) Joint Industrial Project (JIP), lead by Prof. Dr. W.D. Dover, University College London.
- 2001 – 2002 Joint Industrial Project (JIP) “RBI of FPSO” sponsored by the French Government; Project leader Dr. J. Goyet, Bureau Veritas.

Organization of workshops and exhibitions

- 2011 Member of the Organizing Committee of ICASP 11, the 11th International Conference on Applications of Statistics and Probability in Civil Engineering, at ETH Zürich.
- 2011 Member of the Organizing Committee of ISGSR 3, the 3rd International Symposium on Geotechnical Safety and Risk, at TUM.
- 2010 Main organizer and chair of the IFIP 7.5 Working conference on Reliability and Optimization of Structural Systems at TUM.
- 2008 Organization of a special session on at the ASCE Engineering Mechanics (EM'08) conference, on “Probabilistic methods for near-real-time decision support systems”.
- 2005 Main organizer of a one day scientific workshop “Natural Hazards in an Alpine Valley” in Saas Grund, Valais.
- 2004 – 2005 Member of the scientific advisory committee for the “Welten des Wissens” exhibition project for the 150th anniversary of ETH (220'000 visitors), and organizer of a part of the exhibition.
- 2003 Main organizer of a one-day scientific workshop “Natural Hazards in an Alpine Valley” at ETH.

Other contributions to the scientific community

Member of the Joint Committee on Structural Safety (JCSS), since 2009.

Vice Chair (2010-2013) and member (since 2008) of the IFIP WG7.5, on Reliability and Optimization of Structural Systems.

Member of the Probabilistic Methods Committee (PMC) of the American Society of Civil Engineers (ASCE), since 2008.

Member of the fib commission 5 “Structural service life aspects”, since 2008, and the fib commission 2 “Safety and performance concepts”, since 2006.

Member of the Advisory Committee of the International Forum on Engineering Decision Making, IFED, since 2006.

Acting as a scientific reviewer for several journals and conferences, including

- *ASCE Journal of Engineering Mechanics*
- *ASCE Journal of Structural Engineering*
- *Bulletin of the Seismological Society of America*
- *Canadian Geotechnical Journal*
- *Civil Engineering and Environmental Systems*
- *Cold Regions Science and Technology*
- *Computer-Aided Civil and Infrastructure Engineering*
- *Corrosion Science*
- *International Journal of Approximate Reasoning*
- *International Journal of Systems Science*
- *Journal of Hazardous Materials*
- *Materials and Structures*
- *Natural Hazards*
- *Natural Hazards and Earth System Science*
- *Probabilistic Engineering Mechanics*
- *Reliability Engineering & System Safety*
- *Structural Safety*
- *Structure and Infrastructure Engineering*

List of selected industrial projects

<u>Year</u>	<u>Client</u>	<u>Project</u>
2010	TNO, Netherlands	Risk analysis for computer facilities of the European Patent Office.
2010	Amprion (RWE), Germany	Verification of methodology and software for reliability assessment of overhead line towers.
2008-2009	Pemex, Mexico	Risk based inspection planning for fixed offshore structures (32 structures in the Bay of Campeche).
2007	Instituto Mexicano del Petróleo (IMP), Mexico	Risk analysis and reliability-based calibration of design criteria for FPSOs (Floating Production Storage and Offloading Units) in the Gulf of Mexico.
2006	Pemex, Mexico	Development of a methodology and a IT tool for risk based prioritization of repair actions on offshore structures and systems: Consultant to IMP Mexico.
2005 - 2006	COMIMSA, Saltillo, Mexico	Risk based inspection planning for process equipment offshore – Consulting, course activities and software development.
since 2001	Bureau Veritas (Marine Departement), Paris	Consultant for the development of commercial RBI applications. Development of software for inspector planning services.
2005	DNV Denmark	Reliability assessment and RBI study for critical joints in an offshore steel platform.
2004 - 2005	Instituto Mexicano del Petróleo (IMP), Mexico	Inspection Planning Philosophy: Development of a general inspection planning procedure for all types of hazards and deterioration modes on offshore platforms using Bayesian nets.
2004 - 2005	COWI Denmark / Danish Road Directory	Development and implementation of a strategy for the risk based asset integrity management of concrete surfaces subject to corrosion of the reinforcement.
2002 - 2004	Pemex, Ciudad del Carmen, Mexico	Risk Based Inspection Planning for Jacket structures – Pilot study and extension: Consulting and development of iPlan software for Pemex.
2002 - 2003	Maersk Oil & Gas, Esbjerg, Denmark	Development and extension of a Risk Based Inspection Planning software (iPlan).
1998	Electrowatt Engineering, Zürich	Assistant in the Project Management Team for the AlpTransit Gotthard Tunnel Construction Project (Internship).
1998	Basler & Hofmann, Consulting Engineers, Zürich	Structural design and evaluation of the earthquake resistance of the Kappeli housing estate (Internship)

Publications

Submitted

- a. Straub D. (2009). Reliability updating with equality information. Submitted to *Probabilistic Engineering Mechanics*.
- b. Straub D. (2009). Quantitative modeling of inspection quality for spatially distributed defects. Submitted to *Structural Safety*.
- c. Straub D., Der Kiureghian A. (2009). Reliability Acceptance Criteria for Deteriorating Elements of Structural Systems. Submitted to *Journal of Structural Engineering*, Trans. ASCE.

Referred journal publications

1. Straub D., Der Kiureghian A. (2010). Bayesian Network Enhanced with Structural Reliability Methods. Part A: Theory. Accepted in *Journal of Engineering Mechanics*, Trans. ASCE.
2. Straub D., Der Kiureghian A. (2010). Bayesian Network Enhanced with Structural Reliability Methods. Part B: Applications. Accepted in *Journal of Engineering Mechanics*, Trans. ASCE.
3. Straub D. (2009). Stochastic modeling of deterioration processes through dynamic Bayesian networks. *Journal of Engineering Mechanics*, Trans. ASCE, **135**(10), pp. 1089-1099.
4. Straub D., Malioka V., Faber M.H. (2009). A framework for the asset integrity management of large deteriorating concrete structures. *Structure and Infrastructure Engineering*, **5**(3) pp. 199 - 213.
5. Montes-Iturrizaga R., Heredia-Zavoni E., Vargas F., Faber M.H., Straub D., De la O J. (2009). Risk Based Structural Integrity Management Using Bayesian Probabilistic Nets. *Journal of Offshore Mechanics and Arctic Engineering*, Trans. ASME, **131**(1).
6. Straub D., Der Kiureghian A. (2008). Improved Seismic Fragility Modeling from Empirical Data. *Structural Safety*, **30**(4), pp. 320-336.
7. Straub D., Schubert M. (2008). Modelling and managing uncertainty in rock-fall hazards. *Georisk*, **2**(1), pp. 1-15.
8. Nishijima K., Faber M.H., Straub D., (2008). Sustainable decisions for life-cycle based design and maintenance. *Australian Journal of Civil Engineering*, **4**(1), pp. 59-72.
9. Straub D., Faber M.H. (2007). Temporal Variability in Corrosion Modeling and Reliability Updating. *Journal of Offshore Mechanics and Arctic Engineering*, Trans. ASME, **129**(4), pp. 265-272.
10. Nishijima K., Straub D., Faber M.H. (2007). Inter-generational distribution of the life-cycle cost of an engineering facility. *Journal of Reliability of Structures and Materials*, **3**(1), pp. 33-46.
11. Straub D., Grêt-Regamey A. (2006). A Bayesian probabilistic framework for avalanche modelling based on observations. *Cold Regions Science and Technology*, **46**(3), pp. 192-203.
12. Grêt-Regamey A., Straub D. (2006). Spatially explicit avalanche risk assessment linking Bayesian networks to a GIS. *Natural Hazards and Earth System Sciences*, **6**(6), pp. 911-926.
13. Straub D., Faber M.H. (2006). Computational Aspects of Risk Based Inspection Planning. *Computer-Aided Civil and Infrastructure Engineering*, **21**(3), pp. 179-192.
14. Faber M.H., Straub D., Maes M.A. (2006). A Computational Framework for Risk Assessment of RC Structures Using Indicators. *Computer-Aided Civil and Infrastructure Engineering*, **21**(3), pp. 216-230.

15. Straub D., Faber M.H. (2005). Risk Based Inspection Planning for Structural Systems. *Structural Safety*, **27**(4), pp 335-355.
16. Straub D., Faber M.H. (2005). Risk Based Acceptance Criteria for Joints Subject to Fatigue Deterioration. *Journal of Offshore Mechanics and Arctic Engineering*, Trans. ASME, **127**(2), pp. 150-157.
17. Faber M.H., Sørensen J.D., Tychsen J., Straub D. (2005). Field Implementation of RBI for Jacket Structures. *Journal of Offshore Mechanics and Arctic Engineering*, Trans. ASME, **127**(3), pp. 220-226.
18. Straub D., Faber M.H. (2004). System Effects in Generic Risk Based Inspection Planning. *Journal of Offshore Mechanics and Arctic Engineering*, Trans. ASME, **126**(3), pp. 265-271.
19. Faber M.H., Straub D., Goyet J. (2003). Unified Approach to Risk Based Inspection Planning for Offshore Production Facilities. *Journal of Offshore Mechanics and Arctic Engineering*, Trans. ASME, **125**(2), pp 126-131.
20. Goyet J., Straub D., Faber M.H. (2002). Risk Based Inspection Planning for Offshore Installations. *Structural Engineering International*, **12**(3), pp. 200-208.
21. Goyet J., Straub D., Faber M.H. (2002). Risk Based Inspection Planning - Methodology and Application to an Offshore Structure. *Revue Française de Génie Civil*, **6**(3), pp. 489-503.

Non-archival journal articles

22. Straub D., Faber M.H. (2006). Inspektionsstrategien für den optimalen Unterhalt von Tragwerken. *Stahlbau*, **75**(5), pp. 389-396.
23. Straub D., Faber M.H. (2005). Die Planung und der Wert von Inspektionen für Bauwerke. *Der Bauingenieur*, Springer, **1**(6), pp. 24-29.
24. Straub D., Faber M.H. (2004). On the Relation between Inspection Quality and Quantity. *e-Journal of Nondestructive Testing*, **9**(7), www.ndt.net.

Referred conference papers

25. Straub D. (2009). An efficient computational framework for probabilistic deterioration modeling and reliability updating. Proc. *ICOSSAR 2009*, Osaka, Japan.
26. Straub D., Der Kiureghian A. (2009). Bayesian networks as a framework for structural reliability in infrastructure systems. Proc. *ICOSSAR 2009*, Osaka, Japan.
27. Bensi M.T., Straub D., Friis-Hansen P., Der Kiureghian A. (2009). Modeling infrastructure system performance using BN. Proc. *ICOSSAR 2009*, Osaka, Japan.
28. Roberto Montes-Iturrizaga R., Inda-Sarmiento G., Vázquez-Hernández O., Silva-González F., Heredia-Zavoni E., Morandi A., Abu-Odeh I., Straub D. (2009). Reliability Analysis of FPSO Components and Calibration of Safety Factors using Response Surfaces. Proc. *28th International Conference on Offshore Mechanics and Arctic Engineering (OMAE 2009)*, Honolulu, Hawaii.
29. Silva-González F., Heredia-Zavoni E., Straub D. (2009). Reliability Based Calibration of Fatigue Design Factors for FPSO Systems. Proc. *28th International Conference on Offshore Mechanics and Arctic Engineering (OMAE 2009)*, Honolulu, Hawaii.
30. Faber M.H., Straub D., Roberto Montes-Iturrizaga R., Heredia-Zavoni E., (2009). FPSO Risk Assessment and Acceptance Criteria with Application to FPSO Mooring Systems. Proc. *28th International Conference on Offshore Mechanics and Arctic Engineering (OMAE 2009)*, Honolulu, Hawaii.
31. Straub D., Der Kiureghian A. (2007). Seismic reliability of infrastructure systems based on fragility models. Proc. *ICASP 2007*, Tokyo.
32. Straub D., Goyet J., Sørensen J.D., Faber M.H. (2006). Benefits of risk based inspection planning for offshore structures. Proc. *OMAE'06*, Hamburg.
33. Faber M.H., Maes M.A., Straub D., Baker J.W. (2006). On the Quantification of Robustness of Structures. Proc. *OMAE'06*, Hamburg.

34. Montes-Iturrizaga R., Heredia-Zavoni E., Marcial-Martínez E., Faber M.H., Straub D., De la O J. (2006). Risk Based Structural Integrity Management Using Bayesian Probabilistic Nets. *Proc. OMAE'06*, Hamburg.
35. Straub D., Faber M.H. (2005). Reliability Updating for Structures Subject to Localized Corrosion Defects. *Safety and Reliability of Engineering Systems and Structures (Proc. ICOSSAR 05, Rome)*, Augusti et al. (eds), Millpress, pp. 843-850.
36. Straub D. (2005). Natural hazards risk assessment using Bayesian networks. *Safety and Reliability of Engineering Systems and Structures (Proc. ICOSSAR 05, Rome)*, Augusti et al. (eds), Millpress, pp. 2535-2542.
37. Schubert M., Straub D., Faber M.H. (2005). Reliability of rock fall protection galleries – A case study with a special focus on the uncertainty modelling. *Safety and Reliability of Engineering Systems and Structures (Proc. ICOSSAR 05, Rome)*, Augusti et al. (eds), Millpress, pp. 1333-1340.
38. Sørensen J.D., Straub D., Faber M.H. (2005). Generic Reliability-Based Inspection Planning for Fatigue Sensitive Details – with Modification of Fatigue Load. *Safety and Reliability of Engineering Systems and Structures (Proc. ICOSSAR 05, Rome)*, Augusti et al. (eds), Millpress, pp. 1063-1070.
39. Nishijima K., Straub D., Faber M.H. (2005). The Effect of Changing Decision Makers on the Optimal Service Life Design of Concrete Structures. *Proc. 4th International Workshop on Life-Cycle Cost Analysis and Design of Civil Infrastructure Systems*, Florida, USA.
40. Faber M.H., Straub D., Chakrabarti P., Abu-Odeh I., De la O J. (2005). Fatigue Analysis and Risk Based Inspection Planning for Life Extension of Fixed Offshore Platforms. *Proc. OMAE05*, Greece.
41. Chakrabarti P., Mukkamala A., Abu-Odeh I., Majumdar B., Faber M.H., Straub D., De la O J. (2005). An Overview of the Reassessment Studies of Fixed Offshore Platforms in the Bay of Campeche, Mexico. *Proc. OMAE05*, Greece.
42. Straub D., Faber M.H. (2003). Modeling Dependency in Inspection Performance. *Applications of Statistics and Probability in Civil Engineering*, Der Kiureghian, Madanat & Pestana (eds), Millpress, pp. 1123 – 1130.
43. Straub D. (2002). Probabilistic Modeling of Non-Destructive Testing of Steel Structures. *Proc. 4th International Ph.D. Symposium in Civil Engineering*, Munich, Vol.2, pp. 311-320.
44. Goyet J., Straub D., Faber M.H. (2001). Planning d'inspection basé sur l'analyse de risque: méthodologie d'ensemble et application aux structures offshore. *Proc. 3^{ème} Conférence Nationale Fiabilité des Matériaux et des Structures*, Bordeaux.

Others, including research reports

45. Straub D. (2010). Reliability updating with measurements in spatially distributed systems using stochastic simulation. *Proc. IFIP WG7.5 Working Conference on Reliability and Optimization of Structural Systems*, Munich, Germany.
46. Bensi M.T., Straub D., Der Kiureghian A. (2010). Efficient Bayesian network formulations for modeling system performance. *Proc. IFIP WG7.5 Working Conference on Reliability and Optimization of Structural Systems*, Munich, Germany.
47. Papaioannou I., Straub D. (2010). Geotechnical reliability updating using stochastic FEM. *Proc. IFIP WG7.5 Working Conference on Reliability and Optimization of Structural Systems*, Munich, Germany.
48. Der Kiureghian, A., Bensi M., Straub D. (2009). Bayesian network methodology for post-earthquake infrastructure risk management. Chapter 9 in *Frontier Technologies for Infrastructures Engineering*, S-S. Chen and A. H-S. Ang (Editors), CRC Press, Taylor & Francis Group, London, U.K.
49. Bensi M.T., Straub D., Der Kiureghian A. (2009). A Bayesian Network Framework for Post-earthquake Infrastructure System Performance Assessment. *Proc. TCLEE conference - Lifeline Earthquake Engineering in a Multihazard Environment*, Oakland, CA.

50. Zintel M., Gehlen C., Straub D., Mayer T.F. (2009). Zustandsbasierte Inspektionsplanung – Möglichkeiten für ein optimiertes Erhaltungsmanagement von Infrastrukturbauten. *Tagungsband, 50. Forschungskolloquium des DAfStb*, TU München. [in German].
51. Montes Iturrizaga R., Heredia Zavoni E., Faber M.H., Straub D. (2009). *Redes Bayesianas para Análisis de Riesgo Estructural de Sistemas FPSO y su Aplicación en la Generación de Criterios de Diseño Metoceánico*. Technical Report, Instituto Mexicano del Petróleo [in Spanish].
52. Montes Iturrizaga R., Silva González F., Heredia Zavoni E., Inda Sarmiento G., Straub D., Faber M.H. (2009). *Análisis de Confiabilidad Estructural de Sistemas FPSO y su Aplicación en la Calibración de Factores de Seguridad para Criterios de Diseño Metoceánico*. Technical Report, Instituto Mexicano del Petróleo [in Spanish].
53. Straub D. (2008). Modeling inspections for pipelines and process equipment. *Proc. 6th International Probabilistic Workshop*, TU Darmstadt, Germany.
54. Straub D., Bensi M., Der Kiureghian A. (2008). Spatial Modeling of Earthquake Hazard and Infrastructure Performance Through Bayesian Networks. *Proc. EM'08*, University of Minnesota, Minneapolis.
55. Straub D., Der Kiureghian A. (2008). An investigation into the combination of Bayesian network with structural reliability methods. *Proc. IFIP WG 7.5 Working conference 2008, Mexico City*.
56. Silva-González F.L., Straub D., Heredia-Zavoni E. (2008). Calibration of Fatigue Design Factors for Mooring Lines of an FPSO. *Proc. IFIP WG 7.5 Working conference 2008, Mexico City*.
57. Montes-Iturrizaga R., Heredia-Zavoni E., Straub D., Faber M.H. (2008). Optimum and Minimum Acceptable Reliability Indexes for Mooring Line Design in FPSO Systems. *Proc. IFIP WG 7.5 Working conference 2008, Mexico City*.
58. Montes-Iturrizaga R., Silva-González F.L., Heredia-Zavoni E., Inda G., Straub D. (2008). Calibration of Safety Factors for Mooring Lines. *Proc. IFIP WG 7.5 Working conference 2008, Mexico City*.
59. Straub D., Der Kiureghian A. (2007). Risk acceptance in deteriorating structural systems. *Proc. JCSS Workshop on Risk Acceptance and Risk Communication*, Stanford, CA.
60. Straub D. (2007). An Overview on Risk Based Inspection Planning for Structures. To appear in: *Safety and Performance Concepts*, fib bulletin, Bergmeister K. (ed.).
61. Grêt-Regamey A., Straub D. (2006). Integrating Bayesian Networks into a GIS for avalanche risk assessment. *Proc. 4th Probabilistic Workshop*, BAM, Berlin.
62. Baker J.W., Straub D., Nishijima K., Faber M.H. (2005). On the Assessment of Robustness I: A General Framework. *Proc. JCSS Workshop on Robustness of Structures*, BRE, Watford, UK.
63. Schubert M., Straub D., Baker J.W., Faber M.H. (2005). On the Assessment of Robustness II: Numerical Investigations. *Proc. JCSS Workshop on Robustness of Structures*, BRE, Watford, UK.
64. Stern B., Trau J., Freimark H., Straub D., Gogu R., Hurni L. (2005). Development of a Web-Mapping Expert Tool for Hazard Assessment in Alpine Valleys. *Proc. XXII International Cartographic Conference*, A Coruna, Spain.
65. Straub D., Faber M.H. (2004). Computational Aspects of Generic Risk Based Inspection Planning. Keynote lecture, *Proc. 2nd ASRANet Colloquium*, Barcelona.
66. Straub D. (2004). *Generic Approaches to Risk Based Inspection Planning for Steel Structures*. IBK Bericht 284, VdF Verlag, Zürich.
67. Straub D., Faber M.H. (2004). Recent Developments in Risk Based Inspection Planning for Structures. *Proc. PSAM 7 Probabilistic Safety Assessment and Management*, Berlin.
68. Straub D. (2003). Accounting for Dependencies in Inspection Planning for Steel Structures. *Proc. Workshop on Risk-Based Maintenance*, TU Delft, pp. 54-61.
69. Straub D. (2001). *Detailed Risk Based Inspection Planning for FPSO Components Subject to Fatigue*. Bureau Veritas, Technical Note #2682, ATA 818A.

70. Straub D. (2001). *Generic Risk Based Inspection Planning – An Introductory Example*. Bureau Veritas, Technical Note #2657, ATA 818A.
71. Straub D., Faber M.H. (2000). Generic Risk Based Inspection Planning for Components Subject to Corrosion. *Proc. ESRA Workshop on Risk Based Inspection Planning*, Zürich, pp. 129-138.
72. Schulte O., Straub D. (2000). *Schubversuche an der Platzertobelbrücke*. Diploma Thesis, Institute of Structural Engineering, ETH Zürich.

Presentations and lectures held

In addition to the invited presentations listed below, I gave 20+ presentations at international scientific conferences.

Invited lectures

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|----------------|--|
| June, 2010 | “Information updating in engineering risk analysis: Opportunities, challenges and recent developments”, Keynote lecture, ASRANET conference, Edinburgh, UK. |
| March 10, 2010 | “Reliability Updating with Equality Information”, Reliability Seminars Series, University of California, Berkeley. |
| Jan. 10, 2010 | “Bayesian Approaches to Engineering Risk Analysis”, Workshop on Statistical Methods, TUM Institute of Advanced Studies, Munich. |
| Nov. 6, 2009 | “Probabilistic modeling and reliability of deteriorating RC structures”, DFG FOR 537 Scientific Workshop, TU München. |
| July 4, 2009 | “Near-Real-Time Decision Support for Infrastructure Subject to Earthquake Hazard”, Invited lecture at the Workshop on Performance Based Earthquake Engineering, Università degli Studi di Napoli Federico II, Italy. |
| March 9, 2009 | “Enhanced Bayesian Networks: Theory and Application”, Reliability Seminars Series, University of California, Berkeley. |
| July 31, 2008 | “Engineering Risk Analysis – From Theory to Practice”, Universidad Nacional Autonoma de Mexico (UNAM). |
| Apr. 10, 2008 | “Information Updating in Infrastructure Systems Subject to Multiple Hazards”, Structures Seminar, University of Washington, Seattle. |
| Mar. 4, 2008 | “Bayesian Approaches to Engineering Risk Analysis”, University of Illinois at Urbana-Champaign. |
| Jan. 29, 2008 | “Decisions in Complex Systems under Uncertainty: An Engineering Challenge”, Technical University Munich, Germany (held in German). |
| Jan. 16, 2008 | “Risk Analysis in Engineering Practice”, Structural Engineering and Geomechanics Seminar, Stanford University. |
| Oct. 8, 2007 | “From Structural Reliability to Risk Analysis: Applications of Probabilistic Methods in Engineering Practice”, SEMM Seminar, UC Berkeley. |
| May 18, 2007 | “The potential of Bayesian networks for assessing catastrophe risks”, Lecture at Risk Management Solutions RMS, Newark, CA. |
| Apr. 13, 2007 | “Uncertainty in seismic fragility models and its effects on infrastructure system reliability”, IBK Seminar, ETH Zürich. |
| 2006 – 2008 | 11 seminars as part of the UC Berkeley Reliability Seminars, on various subjects. |
| Nov. 10, 2005 | „Der Wert von zerstörungsfreier Prüfung“, SGZP Kolloquium, Fachhochschule Aarau. |
| May 3, 2005 | “Inspektionsstrategien für den optimalen Unterhalt von Bauwerken”, IBK Kolloquium, ETH Zürich. |

- Nov. 20, 2004 “Modelling and Managing Uncertainties in Natural Hazards”, presented at the 2nd Swiss Geoscience meeting, University of Lausanne, Switzerland.
- July 2004 “Computational Aspects of Generic Risk Based Inspection Planning”, Keynote lecture, 2nd ASRANet Colloquium, Barcelona.

Academic teaching: Courses introduced and taught at TUM

- Since 2010 Structural Reliability Methods. Course for MSc students, 2 hours per week.
- Since 2010 Risk Analysis 2 (Decisions, optimization and management). Course for MSc students, 3 hours per week.
- Since 2009 Risk Analysis 1 (Uncertainty, information and prediction). Course for MSc students, 4 hours per week.
- Since 2009 Zuverlässigkeit und Lastannahmen (Reliability and Load Modeling). Course for BSc students of civil engineering, 2 hours per week.
- Since 2009 Einführung in das Risikomanagement (Introduction to Risk Management). Course for BSc students of environmental engineering, 2 hours per week.
- Since 2009 PhD Seminar in Risk and Reliability, 2 hours per week, offered every semester.

Academic teaching (excluding classes at TUM)

- 2010 “Bayesian methods for model selection and model fusion”, One-day course, DFG Summer school, Bauhaus Universität Weimar, Germany.
- 2009 5 day course “Análisis de riesgo y confiabilidad y planeación de inspecciones para estructuras marinas fijas”, with Prof. M.H. Faber. Universidad Autónoma de Ciudad del Carmen, Mexico.
- 2008 Substitute lecturer for CE93 “Engineering Data Analysis” at UC Berkeley (6 lectures).
- 2007 CE193 “Engineering Risk Analysis” at UC Berkeley (overall evaluation: 6.7 out of 7)
- 2006 Lecture series on “Bayesian networks for engineering risk analysis” at UC Berkeley.
- 2000 – 2005 A number of lectures at ETH Zürich (Topics: Risk and reliability in civil engineering).
6. 2004 “Reliability Based Assessment of Pipeline Integrity”, 1-day Workshop, University College London, Mechanical Engineering Department.
- 2003 10 lectures as part of a course on Risk Analysis and Inspection Planning at the Universidad Autónoma de Ciudad del Carmen, Mexico.
- 1998 – 1999 Exercise classes in Mechanics (Dynamics), ETH Zurich.

Industrial courses

- 2007 3 day course on Reliability Based Code Calibration, together with Prof. M.H. Faber. Client: IMP, Mexico City.
- 2007 3 day course on Risk Analysis, together with Prof. M.H. Faber. Client: IMP, Mexico City.
- 2006 4 day course on Risk Analysis, together with Prof. M.H. Faber. Client: COMIMSA, Villahermosa, Mexico (in Spanish).
- 2005 4 day course on Risk Based Inspection Planning, together with Prof. M.H. Faber. Client: Pemex, Ciudad del Carmen, Mexico (in Spanish).

Commercial presentations

2001 – date Various presentations held to clients, related to the consulting projects previously listed, in English, German, Spanish and French.