

CURRICULUM VITAE

Dr. Kazuyoshi Nishijima

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PERSONAL INFORMATION

Name	NISHIJIMA, Kazuyoshi
Office address	Matrisk GmbH Am Boertli 17, P.O. Box 469, CH-8049 Zurich, Switzerland
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E-mail	nishijima@matrisk.com
Homepage	http://www.matrisk.com
Nationality	Japan
Date of birth	13 August 1978

WORK EXPERIENCE

Occupation/position	Scientific research associate (Oberassistent)
Employer	Institute of Structural Engineering, ETH Zurich
Dates	Since 04.2009
Type of sector	University
Main activities and responsibilities	Research, supervision of PhD students, and teaching
Occupation/position	Scientific research assistant / PhD
Employer	Institute of Structural Engineering, ETH Zurich
Dates	12.2004 – 03.2009
Type of sector	University
Main activities and responsibilities	Research and teaching assistant
Occupation/position	Consulting engineer, director
Employer	Matrisk GmbH, Zurich, Switzerland
Dates	Since 2007
Type of sector	Company
Main activities and responsibilities	Consulting

WORK EXPERIENCE

Occupation/position	Working student
Employer	Munich Re, Munich, Germany
Dates	09.2004 - 11.2004
Type of sector	Company
Main activities and responsibilities	Business assistance

EDUCATION

Title of qualification	Doctor of Sciences (Dr. sc. ETH Zurich)
Dates	12.2004 – 03.2009
Organization	Institute of Structural Engineering, ETH Zurich
Principal subjects	Civil engineering, sustainability
Position	PhD student
Dates	04.2003 – 11.2004
Organization	Graduate School of Frontier Sciences, University of Tokyo
Principal subjects	Civil engineering
Title of qualification	Master of Environmental Studies
Dates	04.2001 – 03.2003
Organization	Graduate School of Frontier Sciences, University of Tokyo
Principal subjects	Civil engineering, natural hazards

PERSONAL SKILLS

Mother tongue	Japanese
Other languages	English (Excellent) German (Good)

AWARDS AND GRANTS

Award	Wind Engineering Award (shourei-sho)
Date	2005
Organization	Japan Association for Wind Engineering (JAWE)
Award	Award for excellent master thesis
Date	2003
Organization	University of Tokyo
Grant	Research fellowship for young scientists, DC1
Dates	04.2003 – 08.2004
Organization	Japan Society for the Promotion of Science (JSPS)

AWARDS AND GRANTS

Grant	Scholarship student
Dates	04.1997 – 03.2001
Organization	Kinoshita scholarship foundation

RESEARCH PROJECTS

Title	Projection of the change in future weather extremes using super-high-resolution atmospheric models
Dates	Since 04.2010
Fund organization	Kakushin program, Ministry of Education, Culture, Sports, Science & Technology, Japan
Responsibilities	Research

Title	Real time decision support in the face of evolving natural hazards
Dates	Since 08.2009
Fund organization	Swiss National Science Foundation (SNF), Switzerland
Responsibilities	Project management, supervision of a PhD student, and research

Title	Development of stochastic typhoon model in Northwest Pacific region and its application to portfolio loss estimation
Dates	01.2007 – 09.2009
Fund organization	AON Benfield, Japan
Responsibilities	Project management, supervision of a PhD student, and research

Title	Decision theoretical framework for sustainable decision making in civil engineering
Dates	10.2006 – 09.2009
Fund organization	Swiss National Science Foundation (SNF), Switzerland
Responsibilities	Research

TEACHING ACTIVITIES

Course title	PhD seminar: Bayesian networks and Bayesian hierarchical analysis in engineering
Place	Institute of Structural Engineering, ETH Zurich
Dates	2009

Course title	PhD seminar: Probabilistic approach to natural hazards assessment
Place	Institute of Structural Engineering, ETH Zurich
Dates	2008

TEACHING ACTIVITIES

Course title	Method of finite elements (exercises)
Place	Institute of Structural Engineering, ETH Zurich
Dates	2008
Course title	PhD seminar: The probabilistic analysis of systems in engineering
Place	Institute of Structural Engineering, ETH Zurich
Dates	2007
Course title	Statistics and probability theory (exercises)
Place	Institute of Structural Engineering, ETH Zurich
Dates	2005-2007

ACTIVITIES WITHIN ACADEMIC SOCIETY

Membership in professional organizations	IFIP WG 7.5: International Federation for Information Processing, Working Group 7.5, Reliability and Optimization of Structural Systems, scientific and technical committee member since 2010 AIJ: Architectural Institute of Japan, member since 2001 JAWE: Japan Association for Wind Engineering, member since 2003
Academic, scientific and technical committees	ICASP11: 11 th International Conference on Applications of Statistics and Probability in Civil Engineering, organizing committee member

INVITED PRESENTATIONS, LECTURES AND COURSES

2008	Course at AON Re Tokyo, Use of probabilistic typhoon model, Japan, December 2008.
2007	Invited presentation at Kyoto University, Bayesian approach for typhoon risk modeling, Kyoto, Japan, 09.08.2007. Invited seminar at AON Re Tokyo, Development of typhoon risk model, Japan, August-September 2007.
2004	Invited presentation at Cherry Bud workshop, modeling of strong wind speed driven by typhoon and its spatial dependency with multivariate extreme value distribution, Yokohama, Japan, March 2004.

PUBLICATIONS

Dissertations

PhD thesis

Nishijima, K. (2009). Issues of sustainability in engineering decision analysis, ETH Zurich, Zurich.

Master thesis

Nishijima, K. (2003). Multi-site Hazard Analysis for Optimal Design of Building Portfolio, University of Tokyo, Tokyo (in Japanese).

Refereed journal papers

2009

Graf, M., Nishijima, K., and Faber, M. H. (2009). Bayesian updating in natural hazard risk assessment. *Australian Journal of Structural Engineering*, 9(1), 35-44.

Nishijima, K., and Faber, M. H. (2009). A budget management approach for societal infrastructure projects. *Structure and Infrastructure Engineering*, 5(1), 41-47.

Nishijima, K., and Faber, M. H. (2009). Societal performance of infrastructure subject to natural hazards. *Australian Journal of Structural Engineering*, 9(1), 9-16.

Nishijima, K., Maes, M. A., Goyet, J., and Faber, M. H. (2009). Constrained optimization of component reliabilities in complex systems. *Structural Safety*, 31, 168-178.

2007

Nishijima, K., and Faber, M. H. (2007). Bayesian approach to proof loading of quasi-identical multi-components structural systems. *Civil Engineering and Environmental Systems*, 24(2), 111-121.

Nishijima, K., Straub, D., and 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), 33-46.

Nishijima, K., Straub, D., and Faber, M. H. (2007). Sustainable decision for life-cycle based design and maintenance. *Australian Journal of Civil Engineering*, 4(1), pp. 59-72.

2004

Kanda, J., and Nishijima, K. (2004). Multi-site Wind and Earthquake Hazard Analysis via Multivariate Extreme Value Distribution. *Proceedings of the Institute of Statistical Mathematics*, 52(1), 151-173 (in Japanese).

Nishijima, K., and Kanda, J. (2004). A Multi-point Model for Annual Maximum Wind Speed via Max-Stable Process. *Journal of Wind Engineering, JAWE*, 99, 215-226 (in Japanese).

Nishijima, K., and Kanda, J. (2004). An optimum design approach for building portfolio. *Journal of Structural and Construction Engineering, AIJ*, 579, 125-132 (in Japanese).

2003

Nishijima, K., and Kanda, J. (2003). An attempt for probabilistic seismic hazard analysis considering spatial correlation of seismic intensities at two sites. *Journal of Structural Engineering*, 49B, 351-358.

2002

Nishijima, K., Kanda, J., and Choi, H. (2002). Estimation of Peak Factor for Non-Gaussian Wind Pressure. *Journal of Structural and Construction Engineering, AIJ*, 557, 79-84 (in Japanese).

Conference papers

2010

Nishijima, K., Qin, J., and Faber, M.H. (2010). A scalable parametric approximation to multi-normal probability integrals. *IFIP WG7.5 Working Conference on Reliability and Optimization of Structural Systems*, Munich, Germany.

Conference papers

- 2009** Graf, M., Nishijima, K. and Faber, M.H. (2009). A probabilistic typhoon model for the northwest Pacific region. Proceedings of the 7th Asia-Pacific Conference on Wind Engineering, APCWE7, Taipei, Taiwan.
- Nishijima, K., Graf, M., and Faber, M.H. (2009). Optimal evacuation and shut-down decisions in the face of emerging natural hazards. Proceedings of the 10th International Conference on Structural Safety and Reliability, ICOSSAR2009, Osaka, Japan.
- 2008** Graf, M., Nishijima, K., and Faber, M.H. (2008). Adaptation of typhoon risk modelling to climate changes. International Disaster and Risk Conference, IDRC, Davos, Switzerland.
- Nishijima, K., Maes, M., and Faber, M.H. (2008). Probabilistic assessment of extreme events subject to epistemic uncertainties. Proceedings of the ASME 27th International Conference on Offshore Mechanics and Arctic Engineering, OMAE2008, Estoril, Portugal.
- Nishijima, K., and Faber, M.H. (2008). Implicit proof-load effect in life-cycle assessment of structural performance. IFIP WG7.5, Reliability and optimization of structural systems, Mexico.
- 2007** Faber, M. H., Bayraktarli, Y., and Nishijima, K. (2007). Recent Developments in the Management of Risks Due to Large Scale Natural Hazards. XVI Congreso Nacional Ingenieria Sismica, Ixtapa-Zihuatanejo, Mexico.
- Nishijima, K., and Faber, M. H. (2007). A Bayesian framework for typhoon risk management. 12th International Conference on Wind Engineering, 12ICWE, Cairns, Australia.
- Nishijima, K., and Faber, M. H. (2007). On Structural Performance vs. Societal Economic Growth. 10th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP10, Kashiwa, Japan.
- 2006** Nishijima, K., and Faber, M. H. (2006). A Budget Management Approach for Societal Infrastructure Projects. IABMAS'06, 3rd International Conference on Bridge Maintenance, Safety and Management, Porto, Portugal.
- Nishijima, K., and Faber, M. H. (2006). Optimal condition control of systems comprised of multiple homogenous components. 13th IFIP TC7 WG 7.5 Working Conference on Reliability and Optimization of Structural Systems, Kobe, Japan.
- 2005** Nishijima, K., Straub, D., and Faber, M. H. (2005). The Effect of Changing Decision Makers on the Optimal Service Life Design of Concrete Structures. Proceedings of the 4th International Workshop on Life-Cycle Cost Analysis and Design of Civil Infrastructures Systems, Cocoa Beach, Florida, 325-333.
- 2004** Faber, M. H., Maes, M. A., and Nishijima, K. (2004). Optimal Design and Portfolio Risk Management for Groups of Structures. Proceedings OMAE2004, 23rd International Conference on Offshore Mechanics and Arctic Engineering, Vancouver, British Columbia, Canada, [OMAE2004-51430].
- Faber, M. H., and Nishijima, K. (2004). Aspects of Sustainability in Engineering Decision Analysis. Proceedings 9th ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability, Albuquerque, New Mexico, USA.
- 2003** Nishijima, K., and Kanda, J. (2003). Optimum Reliability for Building Portfolio Considering Spatial Correlation of Loads. 9th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP9, San Francisco, USA, 719-723.

Conference papers

- 2003 Nishijima, K., and Kanda, J. (2003). A risk management approach for the design of building portfolios. 11th IFIP WG7.5 Working Conference on Reliability and Optimization of Structural Systems, Banff, Canada, 369-376.
- 2002 Kanda, J., and Nishijima, K. (2002). Wind loads and Earthquake Ground Motions as Stochastic Processes. 1st International ASRANet Colloquium, Glasgow, UK.

Workshop papers

- 2009 Nishijima, K. and Faber, M. H. (2009). A macroeconomic decision framework for sustainable design and maintenance policy making for civil infrastructure. International Forum on Engineering Decision Making, Fourth IFED Forum, Hakone, Japan.
- 2008 Nishijima, K., Graf, M., and Faber, M. H. (2008). From Near-real-time Information Processing to Near-real-time Decision Making in Risk Management of Natural Hazards. Inaugural International Conference of the Engineering Mechanics Institute, EM08, University of Minnesota, Minneapolis, Minnesota.
- 2007 Graf, M., Nishijima, K., and Faber, M. H. (2007). Bayesian updating in natural hazard risk assessment. International Forum on Engineering Decision Making, Third IFED Forum, Shoal Bay, Australia.
Nishijima, K., and Faber, M. H. (2007). Societal optimal performance of infrastructure subject to natural hazards. International Forum on Engineering Decision Making, IFED, Shoal Bay, Australia.
Nishijima, K., Maes, M. A., Goyet, J., and Faber, M. H. (2007). Optimal Reliability of Components of Complex Systems Using Hierarchical System Models. Special Workshop on Risk Acceptance and Risk Communication, Stanford University, California, USA.
- 2006 Nishijima, K., and Faber, M. H. (2006). Optimal proof load testing of large quasi-identical component systems. International Forum on Engineering Decision Making, Lake Louise, Canada.
- 2005 Baker, J. W., Straub, D., Nishijima, K., and Faber, M. H. (2005). On the Assessment of Robustness I: A General Framework. Workshop Robustness of Structures, Garston, Watford, England.
- 2004 Kanda, J., and Nishijima, K. (2004). Scope of Insurance Premium for Residential Houses against Seismic Risk in Japan. First Forum on Engineering Decision Making, IFED, Stoos, Switzerland.
Nishijima, K., Straub, D., and Faber, M. H. (2004). Sustainable decisions for Life-Cycle Based Design and Maintenance. First Forum on Engineering Decision Making, IFED, Stoos, Switzerland.

Research reports and other publications

- 2009 Nishijima, K., Graf, M., and Faber, M. H. (2009). Technical note on Development of stochastic typhoon model in Northwest Pacific region and its application to portfolio loss estimation. AON Re Tokyo.
Graf, M., Nishijima, K., and Faber, M. H. (2009). User manual for Typhoon Risk Analysis. AON Re Tokyo.
- 2005 Nishijima, K. (2005). Probabilistic Modeling of Maximum Wind Field due to Typhoon. Natural Hazards in an Alpine Valley PhD-Workshop, Saas Tal, Switzerland.