

PUBLICATIONS OF PROFESSOR A. NAESS

PEER REVIEWED JOURNAL PAPERS

“Pricing of barrier options under a NIG market model using numerical path integration” (with E.G. Aukrust and S. Westgaard). Journal of Computational Finance. Submitted.

“Response Load Extrapolation for Wind Turbines during Operation based on Average Conditional Exceedance Rates” (with H.S. Toft, N. Saha and J.D. Sørensen). Journal of Wind Energy. Submitted.

“Prediction of Extreme Tether Tension for a TLP” (with C. T. Stansberg and O. Batsevych). Journal of Offshore Mechanics and Arctic Engineering, Transactions of the ASME. Submitted.

“Space-time extreme value statistics of a Gaussian random field”, (with O. Batsevych). Probabilistic Engineering Mechanics. Submitted.

“A Monte Carlo based method for predicting extreme value statistics of uncertain structures” (with N. Saha). Journal of Engineering Mechanics, ASCE, to appear 2010.

“Extreme Value Statistics of Wind Speed Data by the POT and ACER Methods” (with E. Haug). Journal of Offshore Mechanics and Arctic Engineering, Transactions of the ASME, to appear 2010.

“Prediction of extreme response statistics of narrow-band random vibrations” (with O. Gaidai). Journal of Engineering Mechanics, ASCE, to appear 2010.

“Stationary probabilities of ship righting and capsizing: Analytical estimations based on autonomous nonlinear Itô’s stochastic differential equations” (with E. Mamontov). Nonlinear Dynamics, to appear 2010.

“Statistics of Extreme Events in Air Gap Measurements” (with O. Gaidai, C. T. Stansberg and R. Baarholm). Journal of Offshore Mechanics and Arctic Engineering, Transactions of the ASME, Vol. 131, 041107-1 – 8, November 2009.

“System Reliability Analysis by Enhanced Monte Carlo Simulation” (with B. Leira and O. Batsevych). Journal of Structural Safety, Vol. 31, pp. 349-355, 2009. doi:10.1016/j.strusafe.2009.02.004

“Marginal Instability and Intermittency in Stochastic Systems. Part II – Systems with Rapid Random Variations of Parameters”, (with M.F. Dimentberg and A. Hera). Journal of Applied Mechanics, ASME, Vol. 76, 031002-1 – 7, May 2009.

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“Non-smooth dynamics by path integration - an example of stochastic and chaotic response of a meshing gear pair”, (with E. Mo). Journal of Computational and Nonlinear Dynamics, Transactions of ASME, Vol. 4, 034501-1 – 4, 2009.

“Extreme value statistics of combined load effect processes” (with O. Gaidai). Journal of Structural Safety, Vol. 31, pp. 298-305, 2009. doi:10.1016/j.strusafe.2008.09.004

“Estimation of extreme values from sampled time series” (with O. Gaidai). Journal of Structural Safety, Vol. 31, pp. 325-334, 2009. doi:10.1016/j.strusafe.2008.06.021.

“An analytical-numerical method for fast evaluation of probability densities for transient solutions of nonlinear Itô’s stochastic differential equations” (with E. Mamontov). Journal of Engineering Science, Vol. 47, No. 1, pp. 116-130, 2009.

“A numerical study of the existence and stability of some chaotic attractors by path integration”, (with E. Mo). Journal of Vibroengineering, Vol. 10, No. 4, pp. 541-549, 2008.

“Nonlinear vibration of a rotating shaft with broadband random variations of internal damping”, (with M.F. Dimentberg). Nonlinear Dynamics, Vol. 51, No.1-2, pp. 199-205, 2008.

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“Reliability of strongly nonlinear systems by the path integration method”, (with D. Iourtchenko and E. Mo). Journal of Applied Mechanics, Vol. 75, No. 6, 061016, 2008.

“The effect of fatigue-induced crack propagation on the stochastic dynamics of a nonlinear structure”, (with O. Gaidai and K. Sobczyk). Probabilistic Engineering Mechanics, Vol. 23, No. 4, pp. 438-443, 2008.

“Lotka-Volterra Systems in Environments with Randomly Disordered Temporal Periodicity” (with M. F. Dimentberg and O. Gaidai). Physical Review E, Vol 78, 021126, 2008.

“Response Statistics of a Moored Structure in Short-Crested Waves” (with P.S.Teigen). Journal of Offshore Mechanics and Arctic Engineering. Transactions of the ASME, to appear.

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“Estimation of extreme deflection for a beam with uncertain parameters” (with N. Saha). Proceedings 10th International Conference on Structural Safety and Reliability (ICOSSAR 2009), Osaka, Japan, September 2009.

“A Monte Carlo based method for system reliability” (with B.J. Leira and O. Batsevych). Proceedings 10th International Conference on Structural Safety and Reliability (ICOSSAR 2009), Osaka, Japan, September 2009.

“Prediction of Extreme Tether Tension for a TLP” (with C. T. Stansberg and O. Batsevych). Paper no. OMAE2009-80169. Proceedings 28th International Conference on Offshore Mechanics and Arctic Engineering (OMAE 2009), Honolulu, USA, June 2009.

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“A Monte Carlo Based Method for Stochastic Load Effect Combination” (with O. Batsevych). Paper no. m3102. Proceedings of the Inaugural International Conference of The Engineering Mechanics Institute, ASCE (EM 2008), Minneapolis, USA, May 2008.

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“Stochastic load effect combinations by Monte Carlo simulation” (with O. Gaidai). Proceedings International Symposium on Recent Advances in Mechanics, Dynamical Systems and Probability Theory. Palermo, Sicily, June 2007.

“Simulation Based Estimation of Extreme Response of Floating Offshore Structures” (with O. Gaidai and P. S. Teigen). Paper no. OMAE2007-29079. Proceedings 26th International Conference on Offshore Mechanics and Arctic Engineering (OMAE 2007), San Diego, California, June 2007.

“Estimating Extreme Response of Drag Dominated Offshore Structures Form Simulated Time Series of Structural Response” (with O. Gaidai and S. Haver). Paper no. OMAE2007-29119. Proceedings 26th International Conference on Offshore Mechanics and Arctic Engineering (OMAE 2007), San Diego, California, June 2007.

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“Response PDF of a stiffness controlled system by the path integration method” (with D.V. Iourtchenko and E. Mo). Proceedings 5th EUROMECH Nonlinear Dynamics Conference (ENOC 2005), Eindhoven, The Netherlands, August 2005.

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“Improved Numerical Calculation of the Crossing Rate of Second Order Stochastic Volterra Systems” (with H.C. Karlsen). Proceedings 9th International Conference on Applications of Statistics and Probability (ICASP9), San Francisco, USA, July 2003.

“Numerical calculation of the level crossing rate of second order stochastic Volterra systems” (with U. Machado). Proc. 4th International Conference on Computational Stochastic Mechanics, Corfu, Greece, June 2002.

“The study of chaotic attractors of nonlinear systems by path integration” (with C. Skaug). Proc. 4th International Conference on Computational Stochastic Mechanics, Corfu, Greece, June 2002.

“The reliability of quadratic dynamic systems”. Communications 3rd International Conference on Mathematical Methods in Reliability, Trondheim, Norway, June 2002.

“The Development of Estimators for the Peaks-Over-Threshold Method” (with P. H. Clausen). Proc. 21st International Conference on Offshore Mechanics and Arctic Engineering (OMAE2002), Oslo, Norway, June 2002.

“Path integration as a tool for investigating chaotic behaviour” (with C. Skaug). Proc. IUTAM Symposium on Nonlinear Stochastic Dynamics, Monticello, IL, USA, August 2002.

“Application of the Peaks-Over-Threshold method for estimating extreme values” (with P.H. Clausen). Proc. 5th European Conference on Structural Dynamics, Munich, Germany, September 2002.

“The Impact of Data Accuracy on the POT Estimates of Long Return Period Design Values” (with P. H. Clausen). Proc. 20th International Conference on Offshore Mechanics and Arctic Engineering (OMAE2001), Rio de Janeiro, Brazil, June 2001.

“Extreme Response of Floating Structures in Combined Wind and Waves” (with P.S.Teigen). Proc. 20th International Conference on Offshore Mechanics and Arctic Engineering (OMAE2001), Rio de Janeiro, Brazil, June 2001.

“Effects of Data Accuracy on the POT Estimates of Extreme Values” (with P. H. Clausen). Proc. ICOSSAR’01, Newport Beach, California, USA, June 2001.

“An Extension of Turkstra’s Rule for Combination of Dependent Load Effects” (with J. Ø. Røyset). Proc. 19th International Conference on Offshore Mechanics and Arctic Engineering (OMAE2000), New Orleans, USA, February 2000.

“Estimating Confidence Intervals of Long Return Period Design Values by Bootstrapping” (with B. Hungnes). Proc. 19th International Conference on Offshore Mechanics and Arctic Engineering (OMAE2000), New Orleans, USA, February 2000.

“Response Statistics of a Moored Structure in Short-Crested Waves” (with P.S.Teigen). Proc. 19th International Conference on Offshore Mechanics and Arctic Engineering (OMAE2000), New Orleans, USA, February 2000.

“Analysis of a Duffing - van der Pol Oscillator Excited by Filtered White Noise using the Path Integral Method” (with C. Skaug). Proc. Euromech 413 – Stochastic Dynamics of Nonlinear Mechanical Systems. Palermo, Italy, June 2000.

“Response Statistics of Linear Dynamic Systems Subjected to Quadratic Transformations of Gaussian Processes” (with U. Machado). Proc. Euromech 413 – Stochastic Dynamics of Nonlinear Mechanical Systems. Palermo, Italy, June 2000.

“Response Statistics by Monte Carlo Simulation of Compliant Offshore Structures” (with P. Teigen). Proc. MCS2000 – International Conference on Monte Carlo Simulation, Monte Carlo, June 2000.

“Long term stochastic modeling for combination of snow and wind load effects” (with B.J. Leira). Proc. 4th International Conference on Snow Engineering, Trondheim, Norway, June 2000.

“The Peaks Over Threshold Method and Bootstrapping for Estimating Long Return Period Design Values” (with P.H. Clausen). Proc. 8th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability, University of Notre Dame, USA, July 2000.

“Response Statistics of Large Compliant Offshore Structures” (with U. Machado). Proc. 8th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability, University of Notre Dame, USA, July 2000.

“Path Integration Methods for Calculating Response Statistics of Nonlinear Oscillators Driven by α -stable Lévy Noise” (with C. Skaug). Proc. IUTAM Symposium on Nonlinearity and Stochastic Structural Dynamics, Chennai, India, January 1999.

“Estimates of failure probability by importance sampling for dynamic systems” (with C. Skaug). Proc. of the 4th European Conference on Structural Dynamics (EURODYN '99), Prague, Czech Republic, June 1999.

“Gust Factor for Complex Terrain” (with P.H. Clausen and R. Sandvik). Proc. of the 10th International Conference on Wind Engineering (10th ICWE), Copenhagen, Denmark, June 1999.

“Statistical Extrapolation and the Peaks Over Threshold Method” (with P.H. Clausen). Proc. 18th International Conference on Offshore Mechanics and Arctic Engineering (OMAE'99), St. Johns, Canada, July 1999.

“Estimation of Extremes of Combination of Stochastic Load Effects by Turkstra's Rule” (with J.Ø. Røyset). Proc. 18th International Conference on Offshore Mechanics and Arctic Engineering (OMAE'99), St. Johns, Canada, July 1999.

“Importance Sampling for Dynamical Systems” (with C. Skaug). Proc. 8th International Conference on Applications of Statistics and Probability (ICASP8), Sydney, Australia, December 1999.

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“Generalized Cell Mapping Versus Path Integration” (with V. Moe). Proc. 3rd International Conference on Computational Stochastic Mechanics, Santorini, June 1998.

“Extension of the Numerical Path Integration Method to Filtered α -stable Lévy Noise” (with Chr. Skaug). Proc. 3rd International Conference on Computational Stochastic Mechanics, Santorini, June 1998.

“The SRSS Formula for Prediction of Extremes of Linear Combination of Load Effects” (with J.Ø. Røyset). Proc. 17th International Conference on Offshore Mechanics and Arctic Engineering (OMAE'98), Lisboa, Portugal, July 1998.

“Extreme Response of Nonlinear Structures with Low Damping Subjected to Stochastic Loading”. Proc. 17th International Conference on Offshore Mechanics and Arctic Engineering (OMAE'98), Lisboa, Portugal, July 1998.

“Approximations for Extremes of Combinations of Stochastic Load Effects” (with J.Ø. Røyset). Proc. 4th International Conference on Structural Stochastic Dynamics, Notre Dame, USA, August 1998.

“Comments on Importance Sampling for Time Variant Reliability Problems”. Proc. 4th International Conference on Structural Stochastic Dynamics, Notre Dame, USA, August 1998.

"Statistical Extrapolation of Extreme Value Data based on the Peak Over Threshold Method" Proc. 16th International Conference on Offshore Mechanics and Arctic Engineering (OMAE'97), Yokohama, Japan, April 1997, Vol. 2, pp. 113-119.

"Stochastic Response Analysis of Deep Water Structures in Short-Crested Random Seas" (with P. Teigen). Proc. 16th International Conference on Offshore Mechanics and Arctic Engineering (OMAE'97), Yokohama, Japan, April 1997, Vol. 2, pp. 149-155.

"A Critical Look at the Peaks Over Threshold Approach for Statistical Estimation of Extreme Wind Loads". Symposium on Engineering Structures and Extreme Events, Stockholm, May 1997.

"Method for Statistical Extrapolation of Extreme Values", Proc. 51st ISI Session, Istanbul, August 1997.

"Numerical Solution of Nonlinear Stochastic Dynamic Problems by Path Integration". Proc. 51st ISI Session. Invited paper to the IUTAM session on 'Stochastic Mechanics', Istanbul, August 1997.

"Path Integral Solutions of the Random Vibration of Hysteretic Oscillators" (with V. Moe). Euromech 372 Reliability in Nonlinear Structural Mechanics, Clermont-Ferrand, October 1997.

"New Techniques for Path Integral Solutions of the Random Vibration of Nonlinear Oscillators" (with V. Moe). Proc. 7th International Conference on Structural Safety and Reliability (ICOSSAR'97), Kyoto, Japan, November 1997.

"Application of a Modified 'Peaks Over Threshold' Approach for Statistical Estimation of Long Return Period Design Values". Proc. 7th International Conference on Structural Safety and Reliability (ICOSSAR'97), Kyoto, Japan, November 1997.

"A Method for Extrapolation of Extreme Value Data". Proc. 11th ASCE Engineering Mechanics Conference, Ft. Lauderdale, May 1996, Vol. 1, pp. 273-276.

"Statistical Prediction of Long Return Period Design Values" (with H. Storli and L.E. Storm). Proc. 15th International Conference on Offshore Mechanics and Arctic Engineering, Florence, Italy, June 1996, Vol. 2, pp. 17-22.

"Response Statistics of Deep Water Structures in Short-Crested Random Seas" (with P.S. Teigen). Oral presentation at 15th International Conference on Offshore Mechanics and Arctic Engineering, Florence, Italy, June 1996.

"An Alternative Stochastic Representation of Drag Forces on Offshore Structures for Dynamic Analysis" (with L.J. Høegh-Krohn and A.A. Pisano). Proc. 15th International Conference on Offshore Mechanics and Arctic Engineering, Florence, Italy, June 1996, Vol. 2, pp. 87-94.

"An Approximation Method for Estimating Extremes of Narrow-Band Non-Gaussian Random Vibration" (with T.E. Hagen). Proc. 7th ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability, Worcester, USA, August 1996.

"Random Vibration of a Hysteretic Oscillator" (with V. Moe). Proc. 7th ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability, Worcester, USA, August 1996.

"The Effect of Springing Response of a TLP on Tether Fatigue". Proc. 14th International Conference on Offshore Mechanics and Arctic Engineering, Copenhagen, Denmark, June 1995.

"Random vibration of ship hulls". Presented at the IUTAM Symposium on Advances in Nonlinear Stochastic Mechanics, Trondheim, Norway, July 1995.

"A Stochastic Model for Drag Forces on Marine Structures for Dynamic Analyses" (with S.C.S. Yim. Proc. 7th International Conference on Applications of Statistics and Probability, Paris, July 1995.

"Stochastic fatigue analysis of the tethers of a tension leg platform" (with A.J. Berstad and L.A. Moen). Presented at 2nd International Conference on Computational Stochastic Mechanics, Athens, Greece, June 1994.

"Statistics of Combined Linear and Quadratic Springing Response of a TLP in Random Waves". Proc. 12th International Conference on Offshore Mechanics and Arctic Engineering, Glasgow, UK, June 1993.

"Stochastic Linearization as a Tool for Fatigue Damage Estimation" (with S.R. Winterstein). Proc. 12th International Conference on Offshore Mechanics and Arctic Engineering, Glasgow, UK, June 1993.

"The Effect of Coulomb Damping on the Response Statistics of a SDOF Oscillator Subjected to White Noise Excitation" (with J.M. Johnsen). Proceedings 2nd European Conference on Structural Dynamics (Eurodyn '93), Trondheim, Norway, June 1993.

"Statistical Linearization Methods for Prediction of Extreme Response of Nonlinear Structures". Presented at 6th International Conference on Structural Safety and Reliability (ICOSSAR '93), Innsbruck, Austria, August 1993.

"Prediction of Extreme Response of Nonlinear Oscillators subjected to Random Loading using the Path Integral Solution Technique". Presented at Conference on Extreme Value Theory and its Applications, Gaithersburg, Maryland, May 1993.

"Fatigue Specific Linearization Methods" (with S.R. Winterstein). Presented at IUTAM Symposium on Probabilistic Structural Mechanics: Advances in Structural Reliability Methods, San Antonio, Texas, June 1993.

"The Statistics of Springing Response of a TLP" (with G. Moe). Proc. 11th International Conference on Offshore Mechanics and Arctic Engineering, Calgary, Canada, June 1992.

"Prediction of Extremes related to the Second-Order, Sum-Frequency Response of a TLP". Proc. 2nd International Offshore and Polar Engineering Conference, San Francisco, June 1992.

"An Efficient Numerical Method for Calculating the Statistical Distribution of Combined First-Order and Wave-Drift Response" (with J. M. Johnsen). Proc. 10th International Offshore Mechanics and Arctic Engineering Symposium (OMAE'91), Stavanger, Norway, June 1991.

"Response Statistics of Nonlinear Dynamic Systems by Path Integration" (with J. M. Johnsen). Presented at IUTAM Symposium on Nonlinear Stochastic Mechanics, Torino, Italy, July 1991.

"Time Variant Wave-Drift Damping and its Effect on the Response Statistics of Moored Offshore Structures" (with J. M. Johnsen). Proc. 1st Int. Conf. on Offshore and Polar Engineering (ISOPE'91), Edinburgh, Scotland, August 1991.

"The Path Integral Solution Technique applied to the Random Vibration of Hysteretic Systems" (with J. M. Johnsen). Proc. 1st Int Conf. on Computational Stochastic Mechanics, Corfu, Greece, September 1991.

"Springing Response Statistics of Tension Leg Platforms". Proc. Scandinavian Forum for Stochastic Mechanics II, University of Aalborg, November 1991.

"Prediction of Extreme Response of Nonlinear Structures by Stochastic Linearization". Proc. Scandinavian Forum for Stochastic Mechanics II, University of Aalborg, November 1991.

"Statistical Analysis of Wave-Drift Response in Short-Crested Random Seas". Proc. 1st Pacific/Asia Offshore Mechanics Symposium (PACOMS'90), Seoul, South-Korea, June 1990.

"Stochastic Linearization Method for Prediction of Extreme Response" (with F. Galeazzi and M. Dogliani). Proc. 1st European Offshore Mechanics Symposium, Trondheim, Norway, August 1990.

"Direct Numerical Simulation of the Response Statistics of Nonlinear Dynamic Systems" (with J. M. Johnsen). Proc. Scandinavian Forum for Stochastic Mechanics, Lund University of Technology, August 1990. Published by Swedish Council for Building Research, Stockholm, Document D7:1991.

"A Critical Assessment of Turkstra's Rule related to the Reliability of Offshore Structures". Proc. Int. Conf. Environmental Forces on Offshore Structures and their Prediction. Advances in Underwater Technology, Ocean Science and Offshore Engineering, Kluwer Academic Publishers, London, 1990.

"A Study of the Design Basis pertaining to Nonlinear Combination of Stress Loads" (with J. M. Johnsen). Proc. 4th Int. Symp. on Practical Design of Ships and Mobile Units (PRADS'89), Varna, Bulgaria, October 1989.

"The Effect of Correlation on Extreme Slow-Drift Response. Proc. 8th International Offshore Mechanics and Arctic Engineering Symposium (OMAE'89), The Hague, The Netherlands, 1989.

"Prediction of Extremes of Linear Combination of Load Effects". Proc. 2nd IFIP Working Conference on Reliability and Optimization of Structural Systems, London, September 1988. Lecture Notes in Engineering 48, Springer Verlag, 1989.

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"Nonlinear stochastic problems pertaining to response predictions of offshore structures". Proc. Research Workshop on Stochastic Mechanics, September 1988, (Editors O. Ditlevsen and S. Krenk) Report Serie R, No. 244, Department of Structural Engineering, Technical University of Denmark, Lyngby.

"Reliability Estimates by Quadratic Approximation of the Limit State Surface". Proc. 1st IFIP Working Conference on Reliability and Optimization of Structural Systems. Aalborg, Denmark, May 1987. Lecture Notes in Engineering 33, Springer Verlag 1987.

"Methods for Predicting the Extreme Response of Moored Offshore Structures". Proc. International Symposium on Offshore Engineering. Brasil Offshore '87, Rio de Janeiro, Brasil, August 1987.

"On the Statistical Analysis of Slow-Drift Forces and Motions of Floating Offshore Structures". Proc. 5th International Offshore Mechanics and Arctic Engineering Symposium (OMAE'86), Tokyo, Japan, April 1986.

"Statistical Analysis of some Quadratic Load Models". Proc. Application of Probabilistic Methods in the Design of Structures. Chalmers University of Technology, Gothenburg, Sweden, June 1986.

"Extreme Value Properties of Quadratic Filters". Lecture & notes presented at Nordic Research Course on Statistical Extreme Value Theory, 6.-16. August 1986, Båstad, Sweden.

"Modelling of the Dynamic Behaviour of Damaged Platforms by Time Simulation Methods and Model Tests" (with K. Herfjord and J. R. Hoff). Proc. 4th International Conference on Behaviour of Offshore Structures (BOSS'85), Delft, The Netherlands, July 1985.

"Dynamic Response of a Heavily Listed Semi-Submersible Platform" (with X. Huang). Proc. Second International Symposium on Ocean Engineering and Ship Handling, March 1983, SSPA, Gothenburg, Sweden.

"The Effect of Correlation on the Prediction of Extreme Values". Proc. 4th ASCE Engineering Mechanics Division Specialty Conference, May 1983. Purdue University, West Lafayette, Indiana.

"On the Prediction of Extreme Forces on Coastal Structures". Proc. IAHR Seminar on Hydrodynamics of Waves in Coastal Areas, September 1983, Moscow, USSR.

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"On the prediction of extreme responses by the envelope method". Proc. Third International Conference on Behaviour of Offshore Structures (BOSS'82), Vol. 1, pp. 516-525, August 1982, MIT, Cambridge, Massachusetts.

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