

## CURRICULUM VITAE

**STEEN KRENK,**  
**Dr.Techn., Ph.D., M.Eng.**  
**Professor of Structural Mechanics**

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Danish citizen, born 1949 in Odense, Denmark.

### Academic Education and Degrees:

- 1972 M.Sc. Technical University of Denmark (Civil and Structural Engineering)
- 1975 Ph.D. Technical University of Denmark (Crack and Contact Problems in Elasticity Theory).
- 1981 Dr.Techn. Technical University of Denmark (Polynomial Solutions to Singular Integral Equations, with Applications to Elasticity Theory).
- 1984 Course in Reservoir Engineering, Norwegian Institute of Technology.

### Appointments and Visits:

- 1972-74 Graduate student, Structural Research Laboratory, Technical University of Denmark.
- 1972 Research Associate, Department of Mechanical Engineering and Mechanics, Lehigh University, Bethlehem, Pa., U.S.A. (June 2 - Dec 15).
- 1975-80 Part time Lecturer, Structural Research Laboratory, Technical University of Denmark.
- 1975-83 Research Engineer, Structural Mechanics Group, Risø National Laboratory, Denmark.
- 1976 Research Associate, Department of Mechanical Engineering and Mechanics, Lehigh University, Bethlehem, Pa., U.S.A. (May 15 - Aug 6)
- 1978 Visiting Research Assistant Professor, Solid Mechanics Division, University of Waterloo, Waterloo, Ontario, Canada (Sept 1 - Nov 30).
- 1981 Visiting Associate Professor of Applied Mathematics, Department of Applied Mathematics and Computer Science, University of Virginia, Charlottesville, Va., U.S.A. (Jan 16 - May 30).
- 1983-85 Head of Structural Mechanics Group, Risø National Laboratory, Denmark.
- 1985-89 Associate Professor, Department of Structural Engineering, Technical University of Denmark.
- 1986 Visiting Research Professor, Department of Civil Engineering, University of Waterloo, Waterloo, Ontario, Canada (July 1 - Aug 15).
- 1989-95 Professor of Computational Mechanics, Department of Building Technology and Structural Engineering, Aalborg University, Denmark.
- 1993 Visiting Professor, Department of Solid Mechanics, Lund Institute of Technology, Sweden (Feb 1 - March 31).
- 1995-97 Professor of Mechanics, Division of Mechanics, Lund Institute of Technology, Lund University, Sweden.
- 1997-01 Professor of Structural Mechanics, Department of Structural Engineering and Materials, Technical University of Denmark.
- 1997 Visiting Professor, Department of Mechanical Engineering, University of Sussex, England (July 13 - Aug 3).

- 1998 Charles Schmidt Distinguished Visiting Professor, Center for Applied Stochastics Research, Florida Atlantic University, Boca Raton, Florida (Aug. 15 - Sept. 15).
- 1999 Senior Research Associate, Department of Civil Engineering and Geological Sciences, University of Notre Dame, Indiana (July 11 - 25).
- 2000 Visiting Scholar, Department of Civil Engineering and Geological Sciences, University of Notre Dame, Indiana (July 17 – August 1).
- 2001-03 Dean of Research, Technical University of Denmark.
- 2001- Professor of Structural Mechanics, Department of Mechanical Engineering, Technical University of Denmark.
- 2001 Melchor Visiting Professor, Department of Civil Engineering and Geological Sciences, University of Notre Dame, Indiana (Sept. 10 – Nov. 10).
- 2004 Ph.D. course 'Non-Linear Modeling and Analysis of Structures and Solids', Laboratory of Structural Mechanics, Helsinki University of Technology, Aug. 30 – Sept. 3.
- 2005 Ph.D. course 'Non-Linear Modeling and Analysis of Structures and Solids', Department of Civil Engineering, Aalborg University, Jan. 17-19 and Feb. 21 - 23.
- 2005 Visiting Professor, Federico Santa Maria University, Valparaiso, Chile (Nov. 12 - 19).
- 2005 Ph.D. course (with Prof. Matti Ristinmaa) 'Finite element method – Nonlinear systems', Lund Institute of Technology, October-December, 2005.

**Academic Memberships, Committees etc.:**

- 1989- Elected member of the Danish Center for Applied Mathematics and Mechanics.
- 1989-95 Danish board member of Nordic Association for Computational Mechanics, NoACM.
- 1990-96 Danish representative for Eurocode 1: Actions on Structures, and member of Danish Committee for Structural Loads and Safety.
- 1991-00 Member of Danish working group on Wind Loads on Structures.
- 1991- Member of the Danish Academy of the Technical Sciences (Akademiet for de Tekniske Videnskaber, ATV).
- 1995-97 Chairman of ATV committee on Information Technology in Building and Construction.
- 1998-00 Member of the Scientific Council of the Danish Center for Applied Mathematics and Mechanics (DCAMM).
- 1999-02 Vice-chairman of ATV research policy committee.
- 1998-05 Member of the Danish Technical Research Council (STVF).
- 1999-01 Chairman of Program Committee for the Danish Materials Research Program.
- 2000-01 Chairman of the Danish Technical Research Council (STVF).
- 2000-07 Member of the board of the Danish Building Research Institute (SBI).
- 2000-02 Member of Research Forum of the Danish Research Councils (Forskningsforum).
- 2001-06 Chairman of the committee of the Ostenfeld Gold Medal.
- 2002-03 Member of the board of Medicon Valley Academy (MVA).
- 2003- Member of the board of the Dannin Foundation for Scientific Research.
- 2005-06 Member of the Committee for Technical Mechanics of the Swedish Research Council.
- 2005- Member of the Editorial Board of the International Journal of Non-Linear Mechanics.
- 2006- Member of the Scientific Council of the Danish Center for Applied Mathematics and Mechanics.
- 2006- Member of the Committee for Mechanical Engineering of the Research Council of Portugal.

**Awards:**

- 1974 Award from The Timber Information Council for project on fracture toughness of wood.

- 1981 Gorm-Petersen Memorial Award for engineering research.
- 1989 Rockwool Award in recognition of engineering research and for project on acoustic properties of porous fiber materials.
- 1990 Adhesive Award from Kai Hansen Foundation.
- 2001 Engineering consultant on 1<sup>st</sup> and 2<sup>nd</sup> prize projects in open design competition for electricity towers. (Winning project completed)
- 2003 Engineering consultant on dynamics and damping in winning project in open design competition for footbridge at Langelinie, Copenhagen. (Project completed)
- 2005 Senior Research Award of The European Association of Structural Dynamics for 'Basic contributions to nonlinear dynamics'.

**Research Areas:**

Applied Mechanics:

Nonlinear theories of continuum mechanics. Mathematical models for granular materials. Elastic wave scattering and propagation in layered media. Theories for beams including shear deformation, pretwist, deformable joints, instability and finite deformations. Fracture mechanics.

Structural Dynamics:

Time integration algorithms for structural dynamics, Vibrations of cables, Calibration and efficiency of dampers on flexible structures, Radiation boundary conditions for elastic and acoustic waves, Modelling of structural damping. Mathematical models in acoustics including damping of fiber materials.

Computational Mechanics:

Numerical solution algorithms for nonlinear finite element problems, Finite elements for beams and plates, Linear programming and plasticity theory, Object oriented formulation of the finite element method, Singular integral equations and their use in mechanics.

Stochastic Mechanics:

Random load and response models, Nonlinear stochastic response analysis and system identification. Modelling and simulation of turbulent wind. Random fatigue analysis and testing.

**Professional consultancies**

Vejdirektoratet (Crash barriers), Risø/Vestas (Analysis program for stresses in composites), Ødegaard & Danneskiold-Samsøe (Seismic wave computer code OSIRIS, Dynamics and wave propagation from foundations, Computational basis and program for mufflers, Radiation boundary conditions for ground borne vibrations – Malmö Metro), RAMBØLL (Computation of fatigue stresses in offshore tubular nodes, Development of structural collapse program RONJA, Course and development of dynamic computation procedures), Svend Ole Hansen ApS (Extreme wind statistics), Bystrup Arkitekter (Design of power-line towers, Vibration damping of the Langelinie Footbridge), City of Copenhagen (Vibration damping of Ågade Footbridge).

**Appointment Committees, Editor and Review Assignments:**

Professor appointments/promotions:

Aalborg University (1994/2005/2005); Linköping University (1996); Technical University of Denmark (1997); Chalmers Institute of Technology (1998/1998/2006/2007); King Abdulaziz University (1999); University of Notre Dame, Indiana (1999); Lund University (1999); Royal Institute of Technology, Stockholm (2000), Aalborg University (2001), Royal Institute of Technology, Stockholm (2001/2001/2001), Helsinki University of Technology (2006).

Editor (with A. Naess), *Advances in Nonlinear Stochastic Mechanics*, Kluwer, Dordrecht, 1996.

Editor, *Civil and Structural Engineering Series*, Research Studies Press, 1997-99.

Guest Editor (with O. Ditlevsen), Special issue of *Probabilistic Engineering Mechanics*, 1999.

Guest Editor (with P. Friis-Hansen), Special issue of *Probabilistic Engineering Mechanics*, 2007.

Reviews for the U.S. National Science Foundation.

Reviews for Springer Verlag (1989).

Reviews for the Swedish Council for Building Research (1995)  
Reviewer for the Research Council of Norway (1997 - )  
Reviewer for the Swedish Technical Research Council (1998,2004,2007)  
Reviewer for the Italian Ministry of University and Scientific Research. (1998-2004)  
Reviews for Netherlands Organisation for Scientific Research (2002,2003)  
Review for Research Commission of Swiss Federal Institute of Technology Zurich (ETH) (2005)

Review assignments for:

*AIAA Journal, Applied Mechanics Reviews, Coastal Engineering, Coastal Engineering Journal, Computer Methods in Applied Mechanics and Engineering, Computers & Fluids, Computers & Structures, Control Engineering Practice, Earthquake Engineering and Structural Dynamics, Engineering Fracture Mechanics, European Journal of Mechanics, International Journal for Numerical and Analytical Methods in Geomechanics, International Journal for Numerical Methods in Engineering, International Journal of Engineering Science, International Journal of Fracture, International Journal of Heat and Mass Transfer, International Journal of Mechanical Sciences, International Journal of Solids and Structures, ISET Journal of Earthquake Technology, Journal of Applied Mechanics, Journal of Cohesive and Friction Materials, Journal of Computational Physics, Journal of Engineering Mechanics, Journal of Fluids and Structures, Journal of Nonlinear Dynamics, Journal of Non-Linear Mechanics, Journal of Offshore Mechanics and Arctic Engineering, Journal of Sound and Vibration, Journal of Structural Engineering, Journal of Vibration and Acoustics, Journal of Wind Engineering & Industrial Aerodynamics, Materials and Structures, Mathematical Reviews, Mechanics Based Design of Structures and Machines, Physica Scripta, Probabilistic Engineering Mechanics, Proceedings of the Royal Society London, Structural Engineering and Mechanics, Wind and Structures.*

#### **Ph.D. Supervision**

Peter H. Madsen, *Stochastic Response Analysis and First-Passage Probabilities*, Risø National Laboratory, 1983.

Henrik Jensen, *Calculations for Piezoelectric Ultrasonic Transducers*, Risø National Laboratory, 1986.

Jeppe Jønsson, *Recursive Finite Elements for Buckling of Thin-Walled Beams*, Department of Structural Engineering, Technical University of Denmark, 1990.

Henrik Gluwer, *Simulation and Analysis of Random Fatigue Load Histories*, Department of Structural Engineering, Technical University of Denmark, 1992.

Frank Mathiesen, *Stability Analysis of Thin-Walled Non-Symmetric Steel Beams*, Department of Building Technology and Structural Engineering, Aalborg University, 1993.

Ole Hededal, *Object-Oriented Structuring of Finite Elements*, Department of Building Technology and Structural Engineering, Aalborg University, 1994.

Steffen Vissing, *Dynamic Analysis of Structures by Mode Reduction Techniques*, Department of Building Technology and Structural Engineering, Aalborg University, 1996.

Finn Raun Gottfredsen, *Structural Capacity of Combination Walls*, Danish Building Research Institute and Aalborg University, 1996.

Aylin Ahadi, *Constitutive Modelling of Friction Materials*, Division of Mechanics, Lund University, Licentiate June 1999, Tekn.Dr. February 2004.

Finn Rüdinger, *Modelling and Estimation of Damping in Non-Linear Stochastic Dynamics*, Department of Mechanical Engineering, Technical University of Denmark, December 2002.

Jan Riess Høgsberg, *Modelling of Dampers and Damping in Structures*, Department of Mechanical Engineering, Technical University of Denmark, March 2006.

#### **Doctor Opponent and Committees**

Henrik Overgaard Madsen, *Load Models and Load Combinations*, Department of Structural Engineering, Technical University of Denmark, 1979. (Lic.Techn.)

Göran Sandberg, *Finite Element Modeling of Fluid Structure Interaction*, Department of Structural Mechanics, Lund Institute of Technology, 1986. (Tekn.Dr.) (Committee)

Hao Jin, *A Study of the Boundary Element Method Applied to Nonlinear Problems*, Department of Structural Mechanics, Chalmers Institute of Technology, 1987. (Tekn.Dr.) (Opponent)

Lars Peterson, *Acoustic and Elastodynamic Scattering by Thin, Three-Dimensional Objects*, Department of Mechanics, Chalmers Institute of Technology, 1989. (Tekn.Dr.)

Karl Kristian Strømsem, *Dynamic Behavior of Riser Systems Exposed to Internal Fluid Flow - An Analytical Approach*, Norwegian Institute of Technology, 1989. (Dr.Ing.) (Opponent)

Carl Andreas Holm, *Reliability Analysis of Structural Systems Using Nonlinear Finite Element Methods*, Norwegian Institute of Technology, 1990. (Dr.Ing.) (Opponent)

Erland Johnson, *Modelling Transient Crack Growth*, Department of Solid Mechanics, Lund Institute of Technology, 1991. (Tekn.Dr.)(Committee)

Håkan Carlsson, *Analysis of Interacting Structural-Acoustic Systems: Formulations and Solution Strategies*, Department of Structural Mechanics, Lund Institute of Technology, 1992. (Tekn.Dr.) (Committee)

John Magne Johnsen, *Response Statistics of Nonlinear Dynamic Systems*, Norwegian Institute of Technology, 1992, (Dr.Ing.) (Opponent)

Matti Ristinmaa, *Cyclic Plasticity and its Numerical Treatment*, Department of Solid Mechanics, Lund Institute of Technology, 1993. (Tekn.Dr.) (Opponent)

Leif Kristensen, *The Cup Anemometer and Other Exciting Instruments*, Technical University of Denmark, 1993. (Dr.Techn.)(Committee and opponent)

Niels Jørgen Wulff Jensen, *Finite Elements and Discontinuities in Soil*, Department of Civil Engineering, Aalborg University, 1993. (Ph.D.)

Knut Morten Okstad, *Adaptive Methods for Non-Linear Finite Element Analysis of Shell Structures*, Department of Structural Engineering, Norwegian Institute of Technology, 1994. (Dr.Ing.)

Per-Åke Jansson, *Rough Scatterers in Acoustics and Elastodynamics*, Department of Theoretical and Applied Mechanics, Chalmers Institute of Technology, 1995. (Tekn.Dr.) (Committee)

Anders Boe Hauggaard-Nielsen, *Computational Methods for Concrete Structures*, Department of Structural Engineering, Technical University of Denmark, 1996. (Ph.D. Exam)

Torbjörn Lidström, *Computational Methods for Finite Element Instability Analyses*, Department of Structural Engineering, Royal Institute of Technology, Stockholm, 1996. (Tekn.Dr.)(Committee)

Mikael Enelund, *Fractional Calculus and Linear Viscoelasticity in Structural Dynamics*, Department of Solid Mechanics, Chalmers Institute of Technology, 1996. (Tekn.Dr.) (Committee)

Claus F. Christensen, *Wind-Induced Stochastic Oscillations*, Department of Structural Engineering and Materials, Technical University of Denmark, 1996. (Ph.D.)

Erik Adolfsson, *Matrix Cracking in Composite Laminates*, Department of Solid Mechanics, Royal Institute of Technology, Stockholm, 1996. (Tekn.Dr.) (Committee)

Hans Christian Lybye, *Spatial Variability of Soil Properties*, Department of Geology and Geotechnical Engineering, Technical University of Denmark, 1997. (Ph.D.)

Guy L. Larose, *Dynamic Action of Gusty Wind on Long-Span Bridges*, Department of Structural Engineering and Materials, Technical University of Denmark, and Danish Maritime Institute, 1997. (Ph.D.)

Lars Christian Gaarn-Larsen, *Soil Mechanics and Object-Oriented Finite Elements*, Department of Geology and Geotechnical Engineering, Technical University of Denmark, 1997. (Ph.D.)

Thomas Probert, *The Underground as a Storage Facility, Modelling of Nuclear Waste Repositories and Aquifer Thermal Energy Stores*, Department of Mathematical Physics, Lund Institute of Technology, 1997. (Tekn. Dr.) (Committee)

Lindita Kellezi, *Dynamic Soil-Structure Interaction*, Department of Structural Engineering and Materials, Technical University of Denmark, 1998. (Ph.D.)

Thomas Kieler, *Particulate Materials*, Department of Planning, Technical University of Denmark, 1998. (Ph.D.)

Peter Göransson, *Numerical Modelling of the Dynamics of Light Porous Materials*, Division of Technical Acoustics, Lund Institute of Technology, 1998. (Tekn. Dr.) (Committee)

Reijo Kouhia, *Techniques for the Analysis of Non-linear Systems*, Helsinki University of Technology, 1999. (Doctor of Technology) (Committee)

Miguel Ángel Gutierrez de la Merced, *Objective Simulation of Failure in Heterogeneous Softening Solids*, Delft University of Technology, 1999. (Doctor of Technology) (Opponent)

Klaus Munk Rasmussen, *Stress Wave Propagation in Soils Modelled by the Boundary Element Method*, Aalborg University, 1999. (Ph.D.)

Lars Andersen, *Wave Propagation in Infinite Structures and Media*, Aalborg University, 2002 (Ph.D.)

Jon Juel Thomsen, *Dynamic Effects of Nonlinearity and Fast Vibrations: Stiffening, Biasing, Smoothing, Chaos*. Technical University of Denmark, 2002 (Dr. Techn.) (Committee chairman)

Brian Nyvang Legarth, *Fracture and Damage with Plastic Anisotropy*, Technical University of Denmark, 2004. (Ph.D.)

Karl-Gunnar Olsson, *Strukturmekanik och Arkitektur*, Chalmers Tekniska Högskola, 2004. (Tekn. Dr.) (Opponent)

Jesper Winther Larsen, *Nonlinear Dynamics of Wind Turbine Wings*, Aalborg University, 2005 (Ph.D.)

Alan Needleman. Technical University of Denmark, 2006. Doctor Technices Honoris Causa (Dr. techn. h.c.) (Committee chairman)

Anna Ivanova Olsen, *Time-Variant Reliability of Dynamic Systems by Importance Sampling and Probabilistic Analysis of Ice Loads*, Norwegian University of Science and Technology, 2006. (Dr. Ing.)(Opponent)

Niels Leergaard Pedersen, *Optimal Design of Plates for Control of Static and Dynamic Characteristics*. Technical University of Denmark, 2006 (Dr. Techn.) (Committee chairman)

Paul Håkansson, *Modeling of Coupled Thermoplasticity at Finite Strains*, Lund Institute of Technology, 2007. (Tekn. Dr.)(Opponent)

Bjarne Skovmose Kallesøe, *Aeroservoelasticity of Wind Turbines*, Technical University of Denmark, 2007. (Ph.D.)

## PUBLICATIONS

### 1 Publications in Scientific Journals

- 1.1 S. Krenk, Differensoperatorer til skiveberegning (Difference operators for plate analysis), *Bygningsstatistiske Meddelelser*, Vol. 44, 51-62, 1973.
- 1.2 S. Krenk, On the use of the interpolation polynomial for solutions of singular integral equations, *Quart. Appl. Math.*, Vol. 32, 479-484, 1975.
- 1.3 S. Krenk, On quadrature formulas for singular integral equations of the first and the second kind, *Quart. Appl. Math.*, Vol. 33, 225-232, 1975.
- 1.4 S. Krenk, The stress distribution in an infinite anisotropic plate with colinear cracks, *Int. J. Solids Structures*, Vol. 11, 449-460, 1975.
- 1.5 S. Krenk, On the elastic strip with an internal crack, *Int. J. Solids Structures*, Vol. 11, 693-708, 1975.
- 1.6 S. Krenk & M. Bakioglu, Transverse cracks in a strip with reinforced surfaces, *Int. Journ. of Fracture*, Vol. 11, 441-446, 1975.
- 1.7 S. Krenk, Periodic contact and crack problems in plane elasticity, *Letters in Applied and Engineering Sciences*, Vol. 4, 343-353, 1976.
- 1.8 S. Krenk, Influence of transverse shear on an axial crack in a cylindrical shell, *Int. Journ. of Fracture*, Vol. 14, 123-143, 1978.
- 1.9 S. Krenk, Numerical quadrature of periodic singular integral equations, *J. Inst. Maths. Applics.*, Vol. 21, 181-187, 1978.
- 1.10 S. Krenk, Quadrature formulae of closed type for solution of singular integral equations, *J. Inst. Maths. Applics.*, Vol. 22, 99-107, 1978.
- 1.11 E. Byskov & S. Krenk, Konstruktionstræs brudmekaniske styrke (Fracture toughness of wood), *Bygningsstatistiske Meddelelser*, Vol. 49, 93-111, 1978.
- 1.12 S. Krenk, Internally pressurized spherical and cylindrical cavities in rock salt, *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 15, 219-224, 1978.
- 1.13 S. Krenk, Plasticity around an axial surface crack in a cylindrical shell, *Int. J. Pres. Ves. & Piping*, Vol. 7, 1-11, 1979.
- 1.14 S. Krenk, On the elastic constants of plane orthotropic elasticity, *J. Composite Materials*, Vol. 13, 118-116, 1979.
- 1.15 S. Krenk, Stress concentration around holes in anisotropic sheets, *Appl. Math Modelling*, Vol. 13, 137-142, 1979.
- 1.16 N.S. Ottosen & S. Krenk, Nonlinear analysis of cavities in rock salt, *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 16, 245-252, 1979.
- 1.17 S. Krenk, A circular crack under asymmetric loads and some related integral equations, *J. Appl. Mech.*, Vol. 46, 821-826, 1979.
- 1.18 S. Krenk, Nonstationary narrow-band response and first-passage probability, *J. Appl. Mech.*, Vol. 46, 919-924, 1979.
- 1.19 S. Krenk, Periodic stress concentration problems of plane orthotropic elasticity, *ZAMM*, Vol. 60, 709-717, 1980.
- 1.20 S. Krenk & H. Schmidt, Vibration of an elastic circular plate on an elastic half space. A direct approach, *J. Appl. Mech.*, Vol. 48, 161-168, 1981.
- 1.21 S. Krenk & O. Gunneskov, Statics of thin walled pretwisted beams, *Int. J. Num Meth. Engng.*, Vol. 17, 1407-1426, 1981.
- 1.22 S. Krenk, Creeping viscous flow around a heat-generating solid sphere, *J. Appl. Mech.*, Vol. 48, 239-242, 1981.
- 1.23 S. Krenk, Theories for elastic plates via orthogonal polynomials, *J. Appl. Mech.*, Vol. 48, 900-904, 1981.
- 1.24 H. Schmidt & S. Krenk, Asymmetric vibrations of a circular elastic plate on an elastic half space, *Int. J. Solids Structures*, Vol. 18, 91-105, 1982.
- 1.25 S. Krenk, Some integral relations of Hankel transform type and applications to elasticity theory, *Integral*

- Equations and Operator Theory*, Vol. 5, 548-561, 1982.
- 1.26 P.H. Madsen & S. Krenk, Stationary and transient response statistics, *J. Eng. Mech. Div., Proc. ASCE*, Vol. 108, EM4, 622-635, 1982.
  - 1.27 S. Krenk & H. Schmidt, Elastic wave scattering by a circular crack, *Phil. Trans. Roy. Soc., London*, Vol. A308, 167-198, 1982.
  - 1.28 N.S. Ottosen & S. Krenk, Mechanics of gas and oil cavities in rock salt, *Bygningsstatistiske Meddelelser*, Vol. 53, 1-56, 1982.
  - 1.29 S. Krenk, H.O. Madsen & P.H. Madsen, Stationary and transient response envelopes, *J. Eng. Mech.*, Vol. 109, 263-278, 1983.
  - 1.30 S. Krenk, The torsion-extension coupling in pretwisted elastic beams, *Int. J. Solids Structures*, Vol. 19, 67-72, 1983.
  - 1.31 S. Krenk, A linear theory for pretwisted elastic beams, *J. Appl. Mech.*, Vol. 50, 137-142, 1983.
  - 1.32 S. Krenk, Geometrical aspects of acoustic radiation from a shallow spherical cap, *J. Acoust. Soc. Am.*, Vol. 74, 1617-1622, 1983.
  - 1.33 P.H. Madsen & S. Krenk, An integral equation method for the first-passage problem in random vibration, *J. Appl. Mech.*, Vol. 51, 674-679, 1984.
  - 1.34 S. Krenk, The triangular elastic ring element with linear displacements, *Computers & Structures*, Vol. 21, 737-740, 1985.
  - 1.35 S. Krenk & O. Gunneskov, Pretwist and shear flexibility in vibration of turbine blades, *J. Appl. Mech.*, Vol. 52, 409-415, 1985.
  - 1.36 S. Krenk & O. Gunneskov, A triangulation procedure for elastic cross sections with moderate wall thickness, *Computers & Structures*, Vol. 24, 1-12, 1986.
  - 1.37 P.S. Christiansen & S. Krenk, A recursive finite element technique for acoustic fields in pipes with absorption, *Journal of Sound and Vibration*, Vol. 122, 107-118, 1988.
  - 1.38 P. Bjerager & S. Krenk, Parametric sensitivity in first order reliability analysis, *J. Eng. Mech.*, Vol. 115, 1577-1582, 1989.
  - 1.39 S. Krenk & B. Jeppesen, Finite elements for beam cross sections of moderate wall thickness, *Computers & Structures*, Vol. 32, 1035-1043, 1989.
  - 1.40 S. Krenk & H. Gluwer, A Markov matrix for fatigue load simulation and rainflow range evaluation, *Structural Safety*, Vol. 6, 247-258, 1989.
  - 1.41 S. Krenk, Constrained lateral buckling of I-beam gable frames, *J. Eng. Mech.*, Vol. 116, 3268-3284, 1990.
  - 1.42 S. Krenk & L. Damkilde, Warping of joints in I-beam assemblages, *J. Eng. Mech.*, Vol. 117, 2457-2474, 1991.
  - 1.43 S. Krenk & L. Damkilde, Verformung und Steifigkeit von I-Trägerverbindungen, *Stahlbau*, Vol. 61, 173-178, 1992.
  - 1.44 S. Krenk, Energy release rate of symmetric adhesive joints, *Engng. Fracture Mech.*, Vol. 43, 549-559, 1992.
  - 1.45 R. Brincker, S. Krenk, P.H. Kirkegaard & A. Rytter, Identification of dynamical properties from correlation function estimates, *Bygningsstatistiske Meddelelser*, Vol. 63, 1-38, 1992.
  - 1.46 S. Krenk, Kraftoptagelse i afstivede rammehjørner (Forces in stiffened joints), *Bygningsstatistiske Meddelelser*, Vol. 63, 49-58, 1992.
  - 1.47 J. Jönsson, S. Krenk & L. Damkilde, A hybrid displacement plate element for bending and stability analysis, *Computers & Structures*, Vol. 48, 1125-1136, 1993.
  - 1.48 Z. Zembaty & S. Krenk, On the spatial seismic excitations and response spectra, *J. Eng. Mech.*, Vol. 119, 2449-2460, 1993.
  - 1.49 S. Krenk, S. Vissing & C. Vissing-Jørgensen, A finite step updating method for elasto-plastic analysis of frames, *J. Eng. Mech.*, Vol. 119, 2478-2495, 1993.
  - 1.50 J. Jönsson, S. Krenk & L. Damkilde, The Semi-Loof element for plate instability, *Comm. in Num. Meth. Engng.*, Vol. 10, 11-19, 1994.



- 1.51 S. Krenk, L. Damkilde & O. Høyer, Limit analysis and optimal design of plates with triangular equilibrium elements, *J. Eng. Mech.*, Vol. 120, No. 6, 1237-1254, 1994.
- 1.52 S. Krenk, A general format for curved and nonhomogeneous beam elements, *Computers & Structures*, Vol. 50, 449-454, 1994.
- 1.53 L. Damkilde, O. Høyer & S. Krenk, A direct linear programming solver in C for structural applications, *Computers & Structures*, Vol. 52, 511-528, 1994.
- 1.54 O. Hededal & S. Krenk, A profile solver in C for finite element equations, *Computers & Structures*, Vol. 52, 743-748, 1994.
- 1.55 J. Jönsson, S. Krenk & L. Damkilde, Recursive substructuring of finite elements, *Computers & Structures*, Vol. 54, 395-404, 1995.
- 1.56 S. Krenk, An orthogonal residual procedure for nonlinear finite element equations, *Int. J. Num. Meth. Engng.*, Vol. 38, 823-839, 1995.
- 1.57 S. Krenk & O. Hededal, A dual orthogonality procedure for non-linear finite element equations, *Comput. Methods Appl. Mech. Engng.*, Vol. 123, 95-107, 1995.
- 1.58 J.P. Ulfkjær, S. Krenk & R. Brincker, Analytical model for fictitious crack propagation in concrete beams, *J. Eng. Mech.*, Vol. 121, 7-15, 1995.
- 1.59 S. Krenk, Family of invariant stress surfaces, *J. Eng. Mech.*, Vol. 122, 201-208, 1996.
- 1.60 S. Krenk, J. Jönsson & L.P. Hansen, Fatigue analysis and testing of adhesive joints, *Engng. Fracture Mech.*, Vol.53, 859-872, 1996.
- 1.61 L. Damkilde & S. Krenk, Limits - a system for limit state analysis and optimal material layout, *Computers & Structures*, Vol. 64, 709-718, 1997.
- 1.62 S. Krenk & S.R.K. Nielsen, Energy balanced double oscillator model for vortex-induced vibrations, *J. Eng. Mech.*, Vol. 125, 263-271, 1999
- 1.63 S. Krenk & J.B. Roberts, Local similarity in non-linear random vibration. *Journal of Applied Mechanics*, Vol. 66, 225-235, 1999.
- 1.64 S. Krenk, C. Vissing-Jørgensen & L. Thesbjerg, Efficient collapse analysis techniques for framed structures. *Computers & Structures*, Vol. 72, 481-496, 1999.
- 1.65 S.O. Hansen & S. Krenk, Dynamic along-wind response of simple structures, *J Wind Engng. and Ind. Aerod.*, Vol. 82, 147-171, 1999.
- 1.66 S. Krenk, Characteristic state plasticity for granular materials, Part 1: Basic theory, *Int. J. Solids Structures*, Vol. 37, 6343-6360, 2000.
- 1.67 A. Ahadi & S. Krenk, Characteristic state plasticity for granular materials, Part 2: Model calibration and results, *Int. J. Solids Structures*, Vol. 37, 6361-6380, 2000.
- 1.68 S. Krenk, Vibrations of a taut cable with an external damper, *Journal of Applied Mechanics*, Vol. 67, 772-776, 2000.
- 1.69 F. Rüdinger & S. Krenk, Non-parametric system identification from non-linear stochastic response. *Probabilistic Engineering Mechanics*. Vol. 16, 233-243, 2001.
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