Professor Shinobu Yoshimura's C.V. as of 1 March, 2019

1. Position & Affiliation

Professor, Dr., Department of Systems Innovation, School of Engineering, The University of Tokyo (UTokyo)
Vice President in charge of University-Industry Collaboration, UTokyo (2017.4-)
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2. Date of Birth

March, 1959

3. Educational Career

1987.3 Doctor of Eng. received from Dept. Nuclear Eng., School of Eng., UTokyo
1983.3 Master of Eng. received from Dept. Nuclear Eng., School of Eng., UTokyo
1981.3 Bachelor of Eng. received from Dept. Nuclear Eng., School of Eng., UTokyo

4. Academic Career

2019.4-Present Deputy Director, The Division of University Corporate Relations, UTokyo
2017.4-Present Vice President, UTokyo
2015.4-2017.3 Member, The Education and Research Council, UTokyo
2014.4-2017.3 Vice Dean, School of Engineering, UTokyo
2012.4-2014.3 Director, Public Relations Office, UTokyo
2011.4-2012.3, 2014.4-2015.3 Vice Director, Public Relations Office, UTokyo
2009.4-2010.3 Special Staff to the President of UTokyo
2008.4-Present Professor, Dept. Systems Innovation, School of Eng., UTokyo
2005.4-2008.3 Professor, Dept. Quantum Eng. & Systems Science, School of Eng., UTokyo
1999.4-2005.3 Professor, Institute of Environmental Studies, Graduate School of Frontier Sciences, UTokyo
1995.6-1999.3 Associate Professor, Dept. Quantum Eng. & Systems Science, School of Eng., UTokyo
1994.4-1994.10 Visiting Researcher, MPA (State Institute of Materials Testing), University of Stuttgart, Germany
1992.6-1995.5 Associate Professor, RACE (Research into Artifacts, Center for Eng.), UTokyo
1989.4-1992.5 Associate Professor, Dept. Nuclear Eng., UTokyo
1987.4-1989.4 Lecturer, Dept. Nuclear Eng., School of Eng., UTokyo
1985.8-1986.5 Visiting Researcher, Computational Mechanics Center, Georgia Institute of Technology, USA

5. Major Social Activities

1997.8-Present ADVENTURE Project Leader
2018.7-2022.7 IACM (International Association for Computational Mechanics) Vice President
2016.7-2022.7 IACM Executive Council Member
2014.7-Present IACM Fellow
2004.9-Present IACM General Council Member
2018.4-2019.7 APACM (Asian-Pacific Association for Computational Mechanics) Secretary General

2018.4-2019.7 APACM Executive Council Member
2008.8-Present APACM General Council Member
2012.4-2018.3 JACM (Japan Association for Computational Mechanics) President
2002.12-2012.3 JACM Vice President and Secretary General
2007.12-Present JACM Fellow
2015.7-Present ICCES Distinguished Fellow (Int. Conf. on Comp. & Exp. Eng. & Sciences)
2016.4-2018.3 Director of Executive Board of JSME (Japan Society of Mechanical Engineers)
2012.4-2013.3 Chair of Computational Mechanics Division of JSME
2002.3-2009.3 Founding Chair of JSME Certification Program for Comp. Mech. Engineers
2005.3-Present JSME Fellow
2014.10-Present Chair of Atomic Energy Research Committee, JWES (The Japan Welding Engineering Society)
2002.4-Present Chair of PFM (Probabilistic Fracture Mechanics) Subcommittee, JWES
2009.4-2010.3 Chair of Computational Science and Engineering Division of AESJ (Atomic Energy Society of Japan)
2017.4-Present AESJ Fellow
2018.4-Present AESJ Lifetime Member
1995.5-1999.4 Director of JSCES (Japan Society of Computational Engineering and Science)
2007.4-2017.3 Chair of Structural Subcommittee, Nuclear Standards Committee, The Japan Electric Association)
2017.10-2023.9 Member of SCJ (Science Council of Japan)
2017.10-2020.9 Chair of Committee on Comprehensive Synthetic Engineering, SCJ
2006.10-2017.9 Associate Member of SCJ
2014.12-2017.9 Chair of SCJ Committee on Computational Science and Engineering and Its Application to Engineering Design, SCJ
2015.9-Present Member of the Engineering Academy of Japan
2010.10-Present Executive Secretary of Editorial Board of UTokyo Engineering Course
2013.4-2019.3 Associate Editor of International Journal of Computational Methods
2015.7-Present Advisory Board Member of International Journal of Computational Mechanics
2007.9-2010.10 Chair of Steering Committee of IAEA-EBP Project on Seismic Safety of Existing Nuclear Power Plants
2019.3-Present Chair of Academic Advisory Committee of SIC (Systems Innovation Center)
2019.3-Present Member of Executive Board of SIC
2014.4 Co-Chair of COMPSAFE2014 (1st APACM Thematic Conf. & IACM Special Interest Conf.), Sendai, Japan, 2014.4
2007.12 Secretary General of APCOM'07-EPMESC XI, Kyoto, Japan, 2007.12
2013.7 Co-Chair of QR2MSE-ICMR-ICME2013, Emeishan, China, 2013.7
2011.11 Co-Chair of ICMR2011, Busan, Korea, 2011.11

6. Recent Major Invited Lectures

6.1 Plenary Lectures

2019.3 ICCES2019 (Tokyo, Japan)
2017.10 COMPSAFE2017 (Chengdu, China)
2017.7 ICCM2017 (Guilin, China)
2016.7 ICCMS2016 (Mumbai, India)
2015.5 COMPDYN2015 (Crete, Greece)
2015.3 SIAM CSE2015 (Salt Lake, USA)
2013.12 APCOM-ISCM2013 (Singapore)
2013.6 COMPDYN2013 (Kos, Greece)
2011.11 SMiRT21 (New Delhi, India)

6.2 Semi-plenary Lectures

2019.6 COMPDYN2019 (Crete, Greece, 2019.6)

2015.3 FEF2015 (Taipei, Taiwan, 2015.3)
2014.7 WCCM-ECCM-ECFD2014 (Barcelona, Spain, 2014.7)
2011.5 COMPDYN2011 (Corfu, Greece, 2011.5)

7. Awards

7.1 International

2015.7 ICCES Distinguished Achievement Medal (ICCES2015 (International Conference on Computational & Experimental Engineering & Sciences), Reno, Nevada, USA)
2015.7 ICCES Distinguished Fellow
2014.7 IACM Fellow Award (Int. Association for Computational Mechanics), (Barcelona, Spain)
2014.3 3rd Place for 2014 IEEE Computational Intelligence for Financial Engineering & Economics Best Paper (London, UK)
2013.12 APACM Computational Mechanics Award (Asia-Pacific Association for Computational Mechanics), (Singapore)
2009.8 AIAA Liquid Propulsion Best Paper Award (45th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Denver, USA)
2008.3 The K. Washizu Medal (ICCES'08(International Conference on Computational & Experimental Engineering & Sciences), Hawaii, USA)
2006.11 IEEE/ACM Supercomputing 06 Gordon Bell Award finalist (IEEE/ACM, Tampa, USA)
1991.8 Junior SMiRT Award (11th SMiRT (11th International Conference on Structural Mechanics in Reactor Technology), Tokyo)
1990.11 Cray Gigaflops Performance Award (Cray Research Inc., New York)

7.2 Domestic

2019.3 AESJ Computational Science and Engineering Division Distinguished Achievement Award
2018.6 JSAI2018 Best Presentation Award (The Japanese Society for Artificial Intelligence)
2018.4 AESJ Life Time Member
2018.3 IPSJ Specially Selected Paper Award (Information Processing Society of Japan)
2017.12 UTokyo Executive Vice President's Award on Business Reform (The University of Tokyo)
2017.11 JSME 120th Anniversary Service Award (Japan Society of Mechanical Engineers)
2017.6 JEA Nuclear Standards Committee Award (Japan Electric Association)
2017.3 AESJ Fellow (Atomic Energy Society of Japan)
2016.9 JAWS2016 Best Presentation Award (Joint Agent Workshop and Symposium 2016)
2016.9 JAWS2016 Best Paper Award
2016.5, 2013.5, 2010.6 & 2006.5 JSCES Best Paper Awards (Japan Society of Computational Engineering and Science)
2018.9, 2015.7, 2010.6, 1997.6 JSST Best Paper Awards (Japan Society for Simulation Technology)
2014.12 1st Place of Best CFD Graphics Award, 28th CFD Conference (CFD2014)(The Japan Society of Fluid Mechanics (JSFM))
2014.11 JSME Computational Mechanics Award (Computational Mechanics Division, JSME)
2014.4 JSME Best Paper Award
2013.6 2012 JSAI SIG Research Award (Japan Society of Artificial Intelligence)
2013.5 2012 The Most Interesting Reading Award (Japan Society for Design Engineering)
2012.10 JAWS2012 Industry Award (Joint Agent Workshop and Symposium 2012)
2011.7 JACM Computational Mechanics Award (Japan Association for Comp. Mechanics)
2011.3 AESJ Computational Science and Engineering Division Achievements Award
2011.3 & 1998.3 AESJ Best Paper Awards
2009.4 MEXT Minister Award of Science & Technology (Ministry of Education, Culture, Sports, Science and Technology, Japan)

2008.4 JSME Best Technology Award
2007.12 JACM Fellows Award
2007.10 JSME 110th Anniversary Service Award
2007.6 JSST Best Research Award
2005.2 JSME Fellow
2001.11 1st Place of JSME D&S Division Analysis Contest (Design and Systems Division, JSME)
2001.3 JCOT Best Paper Award (Japan Coating Technology Association)
2000.11 JSME Computational Mechanics Achievements Award (Computational Mechanics Division, JSME)
1996.9 JSIAM Best Paper Award (Japan Society for Industrial and Applied Mathematics)
1992.4 JSME Excellent Young Researcher Award
1990.2 Inoue Research Award for Young Scientists (Inoue Science Promotion Foundation)

8. Short Description of Research Areas

Professor Yoshimura has published 265 peer reviewed journal papers, 70 review papers and 7 books. He has been working on High-performance and Intelligent Computational Mechanics with Real World's Applications for 32 years.

Among his wide research activities, the most distinguished and well-recognized achievement is the R&D of the advanced parallel finite element analysis software known as ADVENTURE system (https://adventure.sys.t.u-tokyo.ac.jp) since 1997, leading more than 20 investigators. The ADVENTURE system is very unique open source CAE software that enables very precise analyses of practical structures and machines using over 100 million to billions DOF mesh. Those analyses can be performed very efficiently and easily not only on ordinary PC clusters, but also on latest massively parallel computers such as the Earth simulator, Blue Gene/L and the K-computer. Since Dec. 2002, 43,596 modules of the system have been downloaded by 10,008 registered users worldwide. Its commercial version named ADVENTURECluster has also been widely adopted in automobile, E&E/ICT, heavy, space, material and construction industries. Since January 2015, he has been leading a new national HPC project, i.e. FLAGSHIP20220 Priority Issue 6 (https://postk6.t.u-tokyo.ac.jp/en/), to extend the simulation system towards Exaflops computer to appear in 2020.

Furthermore, Professor Yoshimura has been developing a general-purpose platform of parallel partitioned coupling techniques with nonlinear iterations, named ADVENTURE_Coupler and REVOCAP_Coupler, which ensure accuracy, parallel-efficiency, robustness as well as flexibility. The ADVENTURE's parallel solvers together with the coupling platform enable large-scale parallel coupled analyses of very complicated structures including Fluid-Structure Interaction, Acoustic Fluid-Structure Interaction, Magneto-Structure Interaction and Structure-Structure Interaction. In the FLAGSHIP2020 Priority Issue 6 Project on "Accelerated Development of Innovative Clean Energy Systems", he is developing Multiscale and Multiphysics Integrated Simulators for Coal Gasification Combustion Plants as well as Large Scale Offshore Wind Farms as Digital Twin of such large-scale and complex physical system, fully utilizing the performance of Exaflops computer such as the Post-K computer.

In summary, his achievements include scientific impacts through the R&D of innovative algorithms, engineering impacts through the R&D of practical software, and social impacts through its dissemination to the society as open source as well as the solutions of never solved real world's problems. The technologies he has developed would become de Fact Standard of large scale coupled finite element analyses for high-performance computing of petaflops to exaflops scale.

He was also the founding chair of JSME Certification Program for Computational Mechanics Engineers (http://www.jsme.or.jp/cee/cmnintei.htm), which has already certified 8,971 computational mechanics engineers since 2003.

9. Publications (Books et al.)

(1) "The Finite Element Method", Computational Mechanics and CAE Series, Baifukan, (1991) (G.Yagawa, S.Yoshimura) (in Japanese)

(2) "Elastic-Plastic Fracture Mechanics in Inhomogeneous Materials and Structures", Special Issue, International Journal of Pressure Vessels and Piping, Vol. 63, No. 3, (1995) (G.Yagawa, S.Yoshimura (Ed.))

(3) “Application of Neural Networks to Strength of Materials”, Computational Mechanics Series V, Youkendo, (1997), (G.Yagawa, S.Yoshimura (Ed.)) (in Japanese)
(4) “Design with Sensory Information”, Intelligent Engineering Series, Baifukan, (1999), (G.Yagawa, S.Yoshimura, A.Matsuda) (in Japanese)
(5) “Computational Solid Mechanics”, Modern Fundamental Engineering Series, Iwanami-Shoten, (2001), (G.Yagawa, S.Yoshimura) (in Japanese)
(6) “High-Performance Computing for Structural Mechanics and Earthquake / Tsunami Engineering”, Springer, (2015) (S. Yoshimura, M. Hori, M. Ohsaki)
(7) “Probabilistic Fracture Mechanics for Risk-Informed Activities – Fundamentals and Applications -”, Japan Welding Engineering Society, (2017.9) (S.Yoshimura, Y.Kanto)
http://www-it.jwes.or.jp/ae/index.jsp

10. Publications (Showing International Journal Papers only)

(1) “Nonlinear and Dynamic Fracture of Cracked Structures under Electromagnetic Force”, Nuclear Engineering and Design / Fusion, Vol.2, Nos.1&2, pp.53-63, (1985) (G.Yagawa, S.Yoshimura)
(2) “Dynamic Fracture Mechanics with Electromagnetic Force and Its Application to Fracture Toughness Testing”, Engineering Fracture Mechanics, Vol.23, No.1, pp.265-286, (1986) (G.Yagawa, S.Yoshimura)
(3) “On the Dynamic Fracture Toughness and Crack Tip Strain Behavior of Nuclear Pressure Vessel Steel : Application of Electromagnetic Force”, Nuclear Engineering and Design, Vol.97, No.2, pp.195-209, (1986) (G.Yagawa, S.Yoshimura)
(4) “A Study of Two Alternate Tangent Modulus Formulations and Attendant Implicit Algorithms for Creep as well as High-Strain-Rate Plasticity”, International Journal of Plastcity, Vol.3, pp.391-413, (1987) (S.Yoshimura, K-L.Chen, S.N.Atluri)
(5) “Dynamic Fracture Mechanics under Electromagnetic Force”, Fusion Engineering and Design, Vol.7, pp.269-279, (1989) (G.Yagawa , S.Yoshimura, Y.Akahoshi)
(6) “Generation and Propagation Analyses of High-Strain-Rate Dynamic Crack Propagation in a Visco-Plastic Solid”, Nuclear Engineering and Design, Vol.111, pp.273-289, (1989) (S.Yoshimura, S.N.Atluri, G.Yagawa)
(7) “Finite Element Analysis of Electromagnetic Field for Multidimensional RF Cavities”, Review of Scientific Instruments, Vol.60, No.7, Part2, pp.1740-1743, (1989) (G-W.Ye, Y.Miyauchi, G.Yagawa, S.Yoshimura)
(8) “A Numerical Integration Scheme for Finite Element Method Based on Symbolic Manipulation”, International Journal for Numerical Methods in Engineering, Vol.29, pp.1539-1549, (1990) (G.Yagawa, G-W.Ye, S.Yoshimura)
(9) “Automation of Thermal and Structural Design Using Artificial Intelligence Techniques”, Engineering Analysis with Boundary Elements, Vol.7, No.2, pp.73-77, (1990) (S.Yoshimura, G.Yagawa, Y.Mochizuki)
(10) “An Artificial Intelligence Approach to Efficient Fusion First Wall Design”, Lecture Notes in Computer Science (Computer-Aided Cooperative Product Development), Springer-Verlag, pp.502-521, (1990) (S.Yoshimura, G.Yagawa, Y.Mochizuki)
(11) “A Large Scale Finite Element Analysis Using Domain Decomposition Method on a Parallel Computer”, Computers and Structures, Vol.38, No.5/6, pp.615-625, (1991) (G.Yagawa, N.Soneda, S.Yoshimura)
(12) “Analysis of Growing Ductile Cracks Using Computer Image Processing”, ASTM STP 1131, pp.289-313, (1992) (G.Yagawa, S.Yoshimura, A.Yoshioka, C-R.Pyo)
(13) “Automatic Two- and Three-Dimensional Mesh Generation Based on Fuzzy Knowledge Processing”, Computational Mechanics, Vol.9, No.5, pp.333-346, (1992) (G.Yagawa, S.Yoshimura, N.Soneda, K.Nakao)
(14) “Development of an Automatic Mesh Generation System for Shell Structures Based on Fuzzy Knowledge Processing”, JSAE (Japan Society of Automotive Engineering) Review, Vol.13, No.3, pp.60-64, (1992) (G.Yagawa, S.Yoshimura, K.Nakao, M.Ohji)
(15) “Probabilistic Fracture Mechanics Analysis Based on Three-dimensional J-Integral Database”, Engineering Fracture Mechanics, Vol.44, No.6, pp.887-893, (1993) (G-W.Ye, G.Yagawa, S.Yoshimura)

(16) “A Parallel Finite Element Method with a Supercomputer Network”, Computers and Structures, Vol.47, No.3, pp.407-418, (1993) (G.Yagawa, A.Yoshioka, S.Yoshimura, N.Soneda)
(17) “Applications of Probabilistic Fracture Mechanics to FBR Components”, Nuclear Engineering and Design, Vol.142, pp.43-49, (1993) (K.Hojo, M.Takenaka, H.Kaguchi, G.Yagawa, S.Yoshimura)
(18) “Finite Element Analysis of Gas-Lubricated Grooved Journal Bearings (Analysis Method)”, JSME International Journal, Series C, Vol.39, No.1, pp.123-129, (1996) (K.Kinouchi, K.Tanaka, S.Yoshimura, G.Yagawa)
(19) “Finite Element Analyses of Three Dimensional Fully Plastic Solutions Using Quasi-nonsteady Algorithm and Tetrahedral Elements”, Computational Mechanics, Vol.14, pp. 128-139, (1994) (S.Yoshimura, C-R.Pyo, G.Yagawa, H.Kawai)
(20) “Development of User-Friendly Structural Design System for Pressure Vessels”, JSME International Journal, Series A, Vol.39, No.3, pp.354-361, (1996) (T.Sato, T.Nomoto, K.Kado, G.Yagawa, S.Yoshimura)
(21) “Simplified Stable Crack Growth Analyses of Welded CT Specimens-Comparison Study of GE/EPRI, Reference Stress and R6 Methods”, International Journal of Pressure Vessels and Piping, Vol.63, pp.293-302, (1995) (S.Yoshimura, G.Yagawa, C-R.Pyo, K.Kashima, T.Shimakawa, S.Takamatsu)
(22) “Neural Network Approach to Estimate Stable Crack Growth in Welded Specimens”, International Journal of Pressure Vessels and Piping, Vol. 63, pp.303-313, (1995) (G.Yagawa, A.Matsuda, H.Kawate, S.Yoshimura)
(23) “Study on Life Extension of Aged RPV Material Based on Probabilistic Fracture Mechanics : Japanese Round Robin”, Transactions of ASME, Journal of Pressure Vessel Technology, Vol.117, pp.7-13, (1995) (G.Yagawa, S.Yoshimura, N.Handa, T.Uno, K.Watashi, T.Fujioka, H.Ueda, M.Uno, K.Hojo, S.Ueda)
(24) “Quantitative Nondestructive Evaluation with Ultrasonic Method Using Neural Networks and Computational Mechanics”, Computational Mechanics, Vol.15, pp.521-523, (1995) (A.Oishi, K.Yamada, S.Yoshimura, G.Yagawa)
(25) “Life Extension Simulation of Aged Reactor Pressure Vessel Material Using Probabilistic Fracture Mechanics Analysis on a Massively Parallel Computer”, Nuclear Engineering and Design, Vol.158, pp.341-350, (1995) (S.Yoshimura, M-Y.Zhang, G.Yagawa)
(26) “Automated Structural Design Based on Knowledge Engineering and Fuzzy Control”, Engineering Computations, Vol.12, No.7, pp.593-608, (1995) (S.Yoshimura, Y.Mochizuki, G.Yagawa)
(27) “Automatic Mesh Generation of Complex Geometries Based on Fuzzy Knowledge Processing and Computational Geometry”, Integrated Computer-Aided Engineering, Vol.2, No.4, pp.265-280, (1995) (G.Yagawa, S.Yoshimura, K.Nakao)
(28) “A CAE System for Micromachines: Its Application to Electrostatic Micro Wobble Actuator”, Sensors and Actuators, Ser.A, No.50, pp.209-221, (1995) (J-S.Lee, S.Yoshimura, G.Yagawa, N.Shibaike)
(29) “Direct Analysis Method for Probabilistic Fracture Mechanics”, Nuclear Engineering and Design, Vol.160, pp.347-362, (1996) (H.Akiba, S.Yoshimura, G.Yagawa)
(30) “Analyses of Possible Failure Mechanisms and Root Failure Causes in Power Plant Components Using Neural Networks and Structural Failure Database”, Transactions of ASME, Journal of Pressure Vessel Technology, Vol.118, pp.237-246 (1996) (S.Yoshimura, A.S.Jovanovic)
(31) “Mesh-Invisible Finite Element Analysis in a Virtual Reality Environment”, Computer Modeling and Simulation in Engineering, Vol.1, No.2, pp.289-314, (1996) (G.Yagawa, H.Kawai, S.Yoshimura, A.Yoshioka)
(32) “New Regularization by Transformation for Neural Network Based Inverse Analyses and Its Application to Structure Identification”, International Journal for Numerical Methods in Engineering, Vol.39, pp.3953-3968, (1996) (S.Yoshimura, A.Matsuda, G.Yagawa)
(33) “Identification of Two Dissimilar Surface Cracks Hidden in Solid Using Neural Networks and Computational Mechanics”, Computer Modeling and Simulation in Engineering, Vol.1, pp.477-491, (1996) (S.Yoshimura, Y.Saito, G.Yagawa)
(34) “Performance Study of the Domain Decomposition Method with Direct Equation Solver for Parallel Finite Element Analysis”, Computational Mechanics, Vol.19, pp.84-93, (1996) (G.P.Nikishkov, A.Makinouchi, G.Yagawa, S.Yoshimura)

(35) “Recursive Distribution Method for Probabilistic Fracture Mechanics”, Computational Mechanics, Vol.18, pp.175-185, (1996) (H.Akiba, S.Yoshimura, G.Yagawa)
(36) “Automated System for Structural Design Using Design Window Search Approach: Its Application to Fusion First Wall Design”, Advances in Engineering Software, Vol.28, pp.103-113, (1997) (Y.Mochizuki, S.Yoshimura, G.Yagawa)
(37) “Automated System for Analyzing Stress Intensity Factors of Three-Dimensional Cracks: Its Application to Analyses of Two Dissimilar Semi-Elliptical Surface Cracks in Plate”, Transactions of ASME, Journal of Pressure Vessel Technology, Vol.119, pp.18-26, (1997) (S.Yoshimura, J-S.Lee, G.Yagawa)
(38) “A Study on Probabilistic Fracture Mechanics for Nuclear Pressure Vessels and Piping”, International Journal of Pressure Vessels and Piping, Vol.73, pp.97-107, (1997) (G.Yagawa, S.Yoshimura)
(39) “Probabilistic Fracture Mechanics Analyses of Nuclear Pressure Vessels under PTS Events”, Nuclear Engineering and Design, Vol.174, pp.91-100, (1997) (G.Yagawa, S.Yoshimura, N.Soneda, M.Hirano)
(40) “Neural Network Based Parameter Estimation for Nonlinear Finite Element Analyses”, Engineering Computations, Vol.15, pp.103-138, (1998) (A.Matsuda, H.Okuda, S.Yoshimura, G.Yagawa)
(41) “A CAE System for Multidisciplinary Design and Its Interface in Internet”, Internet Journal of Japan Society of Computational Engineering and Science, No.19980004, (1998) (S.Yoshimura, T.Kowalczyk, Y.Wada, G.Yagawa)
(42) “Porting the Industrial Sheet Metal Forming Code to Parallel Computer”, Computers and Structures, Vol.67, pp.439-449, (1998) (G.P.Nikishkov, M.Kawka, A.Makinouchi, G.Yagawa, S.Yoshimura)
(43) “An Algorithm for Domain Partitioning with Load Balancing”, Engineering Computations, Vol.16, No.1, pp.120-135, (1999) (G.P.Nikishkov, A.Makinouchi, G.Yagawa, S.Yoshimura)
(44) “Load Balancing and Tuning the Shur Complement Computations in Parallel Finite Element Analysis”, Computer Modeling and Simulation in Engineering, Vol.4, No.1, pp.12-18, (1999) (G.P.Nikishkov, N.Makinouchi, G.Yagawa, S.Yoshimura)
(45) “Automatic Mesh Generation of Quadrilateral Elements Using Intelligent Local Approach”, Computer Methods in Applied Mechanics and Engineering, Vol.179, pp.125-138, (1999) (S.Yoshimura, Y.Wada, G.Yagawa)
(46) “Probabilistic Fracture Mechanics of Nuclear Structural Components : Consideration of Transition from Embedded Crack to Surface Crack”, Nuclear Engineering and Design, Vol.191, pp.263-273, (1999) (G.Yagawa, Y.Kanto, S.Yoshimura)
(47) “A PC-based System for Evaluation of Three-dimensional Stress Intensity Factors”, International Journal of Pressure Vessels and Piping, Vol.76, pp.495-501, (1999) (S.Yoshimura, H.Kawate, Y.Wada, G.Yagawa)
(48) “Risk-Benefit Analyses of SG Tube Maintenance Based on Probabilistic Fracture Mechanics”, Nuclear Engineering and Design, Vol.207, pp.287-298, (2001) (Y.Isobe, M.Sagisaka, S.Yoshimura, G.Yagawa)
(49) “Probabilistic Fracture Mechanics Analysis of Nuclear Structural Components : A Review of Recent Japanese Activities”, Nuclear Engineering and Design, Vol.207, No.3, pp.269-286, (2001) (G.Yagawa, Y.Kanto, S.Yoshimura, H.Machida, K.Shibata)
(50) “Neural Network Based Inverse Analysis for Defect Identification with Laser Ultrasonics”, Research in Nondestructive Examination, pp.79-95 (2001) (A.Oishi, K.Yamada, S.Yoshimura, G.Yagawa, S.Nagai, Y.Matsuda)
(51) “Advanced General-purpose Computational Mechanics System for Large Scale Analysis and Design”, Journal of Computational and Applied Mathematics, Vol.149, pp.279-296, (2002) (S.Yoshimura, R.Shioya, H.Noguchi, T.Miyamura)
(52) “Domain Decomposition Based Parallel Contact Algorithm and Its Implementation to Explicit Finite Element Analysis Code”, JSME International Journal, Vol.45A, No.2, pp.123-130, (2002) (A.Oishi, S.Yoshimura, G.Yagawa)
(53) “Optimization of Operation and Maintenance of Nuclear Power Plant by Probabilistic Fracture Mechanics”, Nuclear Engineering and Design, Vol.214, No.1-2, pp.1-12, (2002) (N.Maeda, S.Nakagawa, G.Yagawa, S.Yoshimura)
(54) “Elastic-Plastic Analysis of Nuclear Structures with Millions of DOFs Using the Hierarchical

Domain Decomposition Method", Nuclear Engineering and Design, Vol.212, pp.335-355, (2002) (T.Miyamura, H.Noguchi, R.Shioya, S.Yoshimura, G.Yagawa)
(55) "Hexahedral Mesh Generation of Nuclear Structures Using Intelligent Local Approach", Nuclear Engineering and Design, Vol.212, pp.321-333, (2002) (Y.Wada, S.Yoshimura)
(56) "Pareto-based Continuous Evolutionary Algorithms for Multiobjective Optimization", Evolutionary Computation, Vol.19, No.1, pp.22-48, (2002) (M-B.Shim, M-W.Suh, T.Furukawa, G.Yagawa, S.Yoshimura)
(57) "Automated System of Simulation and Parameter Identification of Inelastic Constitutive Models", Computer Methods in Applied Mechanics and Engineering, Vol.191, pp.2235-2260, (2002) (T.Furukawa, T.Sugata, S.Yoshimura, M.Hoffmann)
(58) "Direct Design Window Search Method and Its Application to Micro Electrostatic Actuator", Computers and Structures, Vol.80, pp.2469-2481, (2002) (D.Ishihara, M-J.Jeong, S.Yoshimura, G.Yagawa)
(59) "Probabilistic Fracture Mechanics Analysis of Nuclear Piping Considering Dispersion in Seismic Loading", International Journal of Pressure Vessels and Piping, Vol.79, pp.193-202, (2002) (H.Machida, S.Yoshimura)
(60) "Thermoelasticity Optimization of 3-D Serpentine Cooling Passages in Turbine Blades", International Journal of Turbo and Jet-Engines, Vol.21, No.1, pp.57-68, (2004) (B.H.Dennis, I.N.Egorov, H.Sobieczky, G.S.Dulikravich, S.Yoshimura)
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