

## CHARBEL FARHAT

Vivian Church Hoff Professor of Aircraft Structures  
Chairman, Department of Aeronautics and Astronautics  
Director, Army High Performance Computing Research Center  
Professor, Department of Mechanical Engineering  
and Institute for Computational and Mathematical Engineering  
William F. Durand Building, Room 257, 496 Lomita Mall  
Stanford University  
Stanford, CA 94305-4035  
Telephone : (650) 723-3840  
FAX : (650) 725-3525  
e-mail : cfarhat@stanford.edu

## RESEARCH INTERESTS

Acoustic Scattering, Aeroelasticity, Aerothermodynamics, Computational Engineering and Computational Mechanics, Coupled Field Problems, Dynamic Data-Driven Systems, Engineering Software Systems, Fluid-Structure Interaction, High Performance Computing, Implosion, Multiscale Analysis, Numerical Analysis, Real-Time Computing, Reduced-Order Modeling, Scientific Visualization, System Identification.

## EDUCATION

B.S. (1983) Ecole Centrale des Arts et Manufactures, France, Diploma of Engineering  
M.S. (1983) Université de Paris VI, France, Applied Mechanics  
M.S. (1984) University of California, Berkeley, Structural Engineering and Structural Mechanics  
M.S. (1986) University of California, Berkeley, Electrical Engineering and Computer Sciences  
Ph.D. (1986) University of California, Berkeley, Civil Engineering

## ACADEMIC EXPERIENCE

2008- **Chairman**, Department of Aeronautics and Astronautics, Stanford University  
2008- **Vivian Church Hoff Professor of Aircraft Structures**, Stanford University  
2007- **Director**, Army High Performance Computing Research Center, Stanford University  
2004- **Professor**, Department of Mechanical Engineering, Institute for Computational and Mathematical Engineering, and Department of Aeronautics and Astronautics (by courtesy), Stanford University  
2000-2004 **Chairman**, Department of Aerospace Engineering Sciences, University of Colorado at Boulder  
1999-2000 **Interim Chair**, Department of Aerospace Engineering Sciences, University of Colorado at Boulder  
1996-2004 **Director**, Center for Aerospace Structures, University of Colorado at Boulder  
1995-2004 **Professor**, Department of Aerospace Engineering Sciences, Center for Aerospace Structures, and Center for Applied Parallel Processing, University of Colorado at Boulder  
1990-1995 **Associate Professor**, Department of Aerospace Engineering Sciences, Center for Aerospace Structures, Center for Space Construction, and Center for Applied Parallel Processing, University of Colorado at Boulder

1987-1990 **Assistant Professor**, Department of Aerospace Engineering Sciences, Center for Space Structures and Controls, Center for Space Construction, and Center for Applied Parallel Processing, University of Colorado at Boulder

## HONORS AND AWARDS

- The John von Neumann Medal (USACM, 2009)
- Highly Cited Researcher in Engineering (ISI, 2009)
- Co-author paper winner of Robert J. Melosh Competition at Duke University (Duke University, 2008)
- Who's Who in Higher Education Engineering (2006)
- Who's Who in Computational Science and Engineering (2005)
- Fellow of the American Society of Mechanical Engineers (ASME, 2003)
- The Subaru Educator Spotlight (Subaru, 2003)
- The Gordon Bell Award (IEEE, 2002)
- The Computational Mechanics Award (IACM, 2002)
- Fellow of the International Association of Computational Mechanics (IACM, 2002)
- Co-author paper winner of Robert J. Melosh Competition at Duke University (Duke University, 2002)
- Fellow of the World Innovation Foundation (WIF, 2001)
- Engineer of the Year (AIAA Rocky Mountain Section, 2001)
- The 2001 Modeling and Simulation Award (Department of Defense, 2001)
- The Computational and Applied Sciences Medal (USACM, 2001)
- Fellow of the US Association of Computational Mechanics (USACM, 2001)
- Fellow of the American Institute of Aeronautics and Astronautics (AIAA, 1999)
- The 1998 International Association of Computational Mechanics Young Investigator Award (IACM, 1998)
- The R. H. Gallagher Special Achievement Award for Young Investigators (USACM, 1997)
- The Sidney Fernbach Award (IEEE, 1997)
- The College of Engineering & Applied Sciences Research Award (University of Colorado, 1996)
- The Sup'Prize Achievement Award (IBM, 1995)
- The ASME Aerospace Structures and Materials Best Paper Award (ASME, 1994)
- The Arch T. Colwell Merit Award (SAE, 1993)
- FNRS Fellowship (Belgian National Science Foundation, 1993)
- Research Featured in Yearbook of Science and the Future (Encyclopaedia Britannica, 1992)
- CRAY Research Gigaflop Performance Award (CRAY Research, 1990)
- TRW Fellowship (TRW Foundation, 1989–1992)
- CRAY Research Award (CRAY Foundation, 1989)
- Presidential Young Investigator Award (National Science Foundation, 1989)
- AGARD Lecturer (1988, 1991, 1993, 1995)
- Junior Faculty Development Award (University of Colorado, 1988)
- PACER Fellowship (Control Data Corporation, 1987–1989)

## VISITING PROFESSOR/SCIENTIST APPOINTMENTS

- Visiting Professor, Mathématiques Appliquées de Bordeaux, Université de Bordeaux I, France, June 1-30 (2000)
- Visiting Professor, LM2S, Ecole Normale Supérieure de Cachan, France, December 1-30 (1997)
- Visiting Professor, CNRS/IUST/Université de Provence, France, June 15-July 15 (1996)
- Visiting Professor, Université de Paris VI, France, and Ecole Normale Supérieure de Cachan, France, September 1-October 7 (1995)
- Visiting Professor, ICASE, NASA Langley Research Center, Hampton, Virginia, October 3-10 (1995)
- Visiting Professor, LTAS, Université de Liège, Belgium, June 1-30 (1993)
- Visiting Professor, Institut National de Recherche en Informatique et en Automatique (INRIA), Sophia-Antipolis, France, July 23 - August 23 (1990)
- Visiting Scientist, ECSEC (IBM Rome), Italy, September 1-30 (1989)

## SHORT COURSES TAUGHT

- ECCOMAS School, Course on “Advanced Computational Methods for Fluid/Structure Interaction,” Ibiza, Spain, May 3-7 (2006)
- Promuval Short Course on “Multidisciplinary Modeling, Simulation and Validation in Aeronautics,” Barcelona, Spain, June 28-29 (2004)
- Ecole d’Eté EDF-CEA-INRIA, “Multiphysics Couplings and Multidomain Methods,” Saint-Lambert-des-Bois, France, June 14-24 (2004)
- “Domain Decomposition Methods for Structural Mechanics and Acoustic Scattering,” Post-Conference Short Course, Fifth U.S. National Congress on Computational Mechanics, Boulder, Colorado, August 4-6 (1999)
- “Strategies and Tools for Parallelising Large Computational Mechanics Codes for Structural, Fluids, Electromagnetics and Multiphysics Analysis,” London, England, November 11-12 (1996)
- Ecole d’Eté CEMRACS sur les “Méthodes de Couplage Fluide/Structure,” Orsay, France, July 14-21 (1996)
- Troisième Ecole d’Eté GUT-CET sur la “Modélisation Numérique en Thermique,” Ile de Porquerolles, France, July 1-6 (1996)
- “Couplage Fluide-Structure,” Ecole Polytechnique de Tunis, La Marsa, Tunisia, March 27-29 (1996)
- “Parallelising Large CFD and Structures Codes,” AIRPORT European Consortium, Maison des Polytechniciens, Paris, France, November 16-17 (1995)
- “Parallel Computing in Computational Fluid Dynamics,” NASA Ames Research Center, Moffett Field, California, October 16-20 (1995)
- “Tutorial sur les Méthodes Numériques pour les Grands Systèmes,” Ecole Polytechnique de Tunis, La Marsa, Tunisia, September 18-19 (1995)
- “Advanced Course on Computational Fluid Dynamics for Industrial Applications,” (COSMASE Course) Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, June 26-30 (1995)

- “Parallel Computing in Computational Fluid Dynamics,” von Kármán Institute for Fluid Dynamics, Belgium, May 15-19 (1995)
- “Parallélisation de Grands Codes: Applications Industrielles et à la Recherche,” CNRS France, June 7-10 (1994)
- “Recent Advances in Iterative Algorithms for Solving Systems and Eigenvalue Problems,” University of Leuven, Belgium, March 22-24 (1994)
- “Domain Decomposition and Parallel Processing in Structural Mechanics,” Université de Liège, Belgium, October 6 - October 8 (1992)
- “An Introduction to Parallel Scientific Computations,” Université de Liège, Belgium, January 28 - February 1st (1991)

## **TEACHING AND TRAINING**

### **The University of Colorado at Boulder**

#### **Undergraduate Curriculum**

- Has designed and developed a new undergraduate course (ASEN 2004) on Aerospace Vehicle Design and Performance that combines analytical, design, and experimental studies.
- Has introduced a new computer-aided structural design course (ASEN 4136) that has consistently attracted more students than the department imposed limit.
- Has developed an original computer visualization software (TOP) to enhance the teaching of stress analysis, structural vibration, and wave propagation. This visualization software is currently used for teaching in this university and for research at over forty major US institutions and industrial companies.
- Has set up, partially funded, and maintained a new departmental undergraduate computer laboratory.
- Has been active as a Structural Advisor of undergraduate students in the Space Grant College Get Away Special (GAS) program, particularly in the structural analysis of the G-285 solar viewing payload that was being readied for a shuttle flight in March 1993.
- Has participated in the development of the Integrated Teaching Laboratory (ITL) as a member of the ITL-HPC Committee.
- Has offered several undergraduate students the opportunity to participate in research projects and has supervised their creative efforts.

#### **Graduate Curriculum**

- Has designed a new course on vibrations and structural dynamics.
- Has introduced a new advanced numerical analysis course for computational engineering. This course has consistently attracted over thirty graduate students from the entire College of Engineering.
- Has developed a new graduate course on Variational Methods in Mechanics that has also attracted graduate students from several other engineering departments.
- Has redesigned the concept and requirements of the Ph.D. Preliminary Exam.
- Has set up a state-of-the-art high-performance computer visualization laboratory that currently supports several research projects.

#### **Courses Taught**

- Advanced Finite Element Seminar - Graduate Level
- Computational Gas Dynamics - Graduate Level

- Mechanical and Structural Vibrations - Graduate Level
- Computational Engineering Software - Graduate Level
- Variational Methods in Mechanics - Graduate Level
- Advanced Numerical Analysis for Computational Mechanics - Graduate Level
- Flight Mechanics - Undergraduate Level
- Structures II - Required, Undergraduate Level
- Analysis and Design of Space Structures - Undergraduate Level
- Introduction to Aerospace Vehicle Design and Performance - Required, Undergraduate Level
- Introduction to Aerospace Engineering - Undergraduate Level

#### **Undergraduate Students Supervised and Supported**

- Thomas Gullaud, Information Technology for Data-Driven Systems (2004)
- Julien Cortial, Time-Decomposed Parallel Solution of Partial Differential Equations (2003-2004)
- Frederic Lechenault, A Data-Driven Environment for Multiphysics Applications (2002-2003)
- Kris van der Zee, Design and Analysis of Partitioned Solution Schemes for the Three-Field Formulation of Aeroelastic Problems (2002)
- Chris Jeppesen, Immersive Visualization of Computational Data (2002)
- Otto Krauss, Adaptive Finite Element Meshing in CFD (2002)
- Jason Lechniak, Finite element modeling of complete F-16 and F-18 aeroelastic configurations (2001-2002)
- Marion Chandesris, Time-parallel Solution of Systems of ODEs (2001-2002)
- Lam Pham, Scientific Visualization and Graphics User Interfaces (1998-2002)
- Ulrich Hetmaniuk, Linearized Aeroelasticity (1998)
- Emily Best, Interactive Two- and Three-dimensional Rendering of Flow Streamlines (1997)
- Matthew Young, Stereoscopy Algorithms for Scientific Visualization and Fast Animation of Contour Plots (1994)
- Chad McArthur, Analysis and Optimization of the Aeroelastic Research Wing ARW-2 (1994)
- Bob Stoner, Object-Oriented Interactive Visualization of Continuum Problems (1992)
- Morgan Jones, Finite Element Modeling and Analysis of a Solar Viewing Payload (1990-1991)
- Malachy Carroll, Finite Element Modeling and Analysis of a Solar Viewing Payload (1990-1991)
- Russell Partch, Scientific and Engineering Visualization (1990)
- William Skaff, Structural Design of a High Speed Civil Transport Wing (1990)
- Rick Stewart, Structural Design of a High Speed Civil Transport Wing (1990)

#### **Master Students Supervised**

- Holly Lewis, High-Fidelity Simulation of Aircraft Trimming (2003-2004)
- Rizwan Ansari, Scientific Visualization (2003)
- Jason Lechniak, Numerical Simulation of the Aeroelastic Behavior of Fighters During High-G Maneuvers (2002-2004)

- Paul Wiedemann-Goiran, Discontinuous Galerkin Methods for the Solution of Acoustic Scattering Problems in the Mid-Frequency Regime (2001-2002)
- Charbel Bou-Mosleh, Arbitrary Finite Element Representation of Rigid Body Modes in Computational Mechanics (2001-2002)
- David Carpenter, The Finite Volume Variational Multiscale Large Eddy Simulation Method (2001-2002)
- Ulrich Hetmaniuk, FETI for Structures with Axisymmetric Components (1999)
- Ben Johanson, Finite Element Modeling of Jet Fighters (1999)
- Chris Saam, Computational Geometry Algorithms for Fluid/Structure Interaction Problems (1997)
- Gregory Brown, M.S. Thesis: Analysis of Inflatable Structures (1994)
- Russell Partch, M.S. Thesis: A Methodology for Finite Element Post-Processing Animation (1991)
- Sophie Zurquiyah, M.S. Thesis: Corotational Formulation of Coupled Fluid/Structure Finite Element Problems (1990)
- Yves Dubois Pélerin, M.S. Thesis: Computational Methods for Two-Way Coupled Thermoelastic Problems (1988)

### **Doctoral Students Supervised**

- Ajaykumar Rajasekharan (2004), Ph. D. Thesis: Variationally Consistent Multiscale Formulations and ALE Time Integrators for Large Eddy Simulation of Turbulent Flows on Dynamic Grids (2008), Product Development Engineer, Seagate
- Charbel Bou-Mosleh, Ph.D. Thesis: Methodologies for Reproducing In-Flight Loads of Aircraft Wings on the Ground and Predicting Their Response to Battle-Induced Damage (2005), Post-Doctoral Assistant, Stanford University
- Chuck Harris, Ph.D. Thesis: Expanding a Flutter Envelope Using Accelerated Flight Data and Application to the F-16 Fighter (2003), Flight Test Engineer, the Edwards Air Force Base
- Ulrich Hetmaniuk, Ph.D. Thesis: Fictitious Domain Decomposition Methods for Partially Axisymmetric Exterior Helmholtz Problems (2002), Research Engineer, the Sandia National Laboratories
- Melike Nikbay, Ph.D. Thesis: Coupled Sensitivity Analysis by Discrete-Analytical Direct and Adjoint Methods with Applications to Aeroelastic Optimization and Sonic Boom Minimization (2002), Assistant Professor of Aeronautics and Astronautics, Istanbul Technical University
- Hai Tran, Ph.D. Thesis: Numerical Simulation of Fluid/Structure Interaction Phenomena in Viscous Dominated Flows (2001), Development Engineer, DuPont, Inc.
- Christoph Degand, Ph.D. Thesis: Moving Grids for Nonlinear Dynamic Aeroelastic Simulations (2001), Software Engineer, CFD Adapco Group (STAR CD)
- Kendall Pierson, Ph.D. Thesis: A Family of Domain Decomposition Methods for the Massively Parallel Solution of Computational Mechanics Problems (2000), Research Engineer, the Sandia National Laboratories
- Antonini Puppini-Macedo, Ph.D. Thesis: Finite Element and Domain Decomposition Methods for Acoustic Scattering Problems (1999), Senior Engineer, Embraer, Inc., Brazil
- Greg Brown, Ph.D. Thesis: The Second Generation Sensitivity Based Element by Element Method for Updating Dynamic Finite Element Models (1999), Computational Mechanics Engineer, SRT, Inc.
- Po-Shu Chen, Ph.D. Thesis: Scalable Substructuring Methods for High Performance Structural Analysis (1997), Research and Development Staff, Ansys, Inc.
- Russell Partch, Ph.D. Thesis: Adaptivity of Space Structures via Thermal Actuators (1995), Staff Scientist, Phillips Laboratory, Edwards Air Force Base, California

- Michel Lesoinne, Ph.D. Thesis: Mathematical Analysis of the Three Field Coupled Aeroelastic Problem (1994), Assistant Professor, Department of Aerospace Engineering Sciences, University of Colorado at Boulder
- Francois Hemez, Ph.D. Thesis: Theoretical and Experimental Correlation between Finite Element Models and Modal Tests for Large Flexible Space Structures (1993), Technical Specialist, Los Alamos National Laboratories
- Paul Stern, Ph.D. Thesis: Unconditionally Stable Staggered Solution Algorithms for Transient Finite Element Analysis of Coupled Thermoelastic Problems (1993), Software Engineer, Fluid Dynamics International, Inc.
- Tzer Yuan Lin, Ph.D. Thesis: A Multiple Frames of Reference Approach to Aeroelastic Computations: Application to Airfoil Flutter Analysis (1990), Deputy Division Chief, AIDC, Taiwan

#### **Post-Doctoral Assistants Supervised**

- Francois Courty (2004)
- Masaki Sato (2003-2004)
- Henri Bavestrello (2002-2004), Post-Doctoral Assistant, Stanford University
- Jing Li (2002-2003), Assistant Professor of Mathematical Sciences, Kent University
- Philip Avery (2001-2004), Post-Doctoral Assistant, Stanford University
- Hai Tran (2001-2003), Development Engineer, DuPont, Inc.
- Gert Rebel (2001-2002), Computational Scientist, Goodyear, Inc.
- Karim Traore (2001)
- Greg Brown (2000-2001), Computational Mechanics Engineer, SRT, Inc.
- Antonini Macedo (2000), Senior Engineer, Embraer, Inc., Brazil
- Philippe Geuzaine (1999-2003), Group Leader, CENAERO, Belgium
- Radek Tezaur (1998-2004), Research Associate, Stanford University
- Rabia Djellouli (1996-2003), Assistant Professor, Department of Mathematics, Northridge University
- Armin Beckert (1999), Research Engineer, the European Aeronautics, Defense, and Space Company, Germany
- Kurt Maute (1998-1999), Assistant Professor, Department of Aerospace Engineering Sciences, University of Colorado at Boulder
- Daniel Rixen (1997-1999), Professor, Mechanical Engineering, Delft University, The Netherlands
- Marcus Sarkis (1997-1998), Assistant Professor, Mathematical Sciences Department, Worcester Polytechnic Institute
- Catherine Lacour (1997), Assistant Professor, Université de Paris VI, France
- Po-Shu Chen (1997), Research and Development Staff, Ansys, Inc.
- Bruno Koobus (1995-1997), Assistant Professor, Université de Montpellier, France
- Michel Lesoinne (1994-1997), Assistant Professor, Department of Aerospace Engineering Sciences, University of Colorado at Boulder
- Paul Stern (1993–1996), Software Development Engineer, Fluid Dynamics International, Inc.
- Francois Hemez (1993-1994), Assistant Professor, Ecole Centrale des Arts et Manufactures, Paris, France
- Nathan Maman (1993-1994), Research and Development Scientist, SIMULOG, Paris, France

- Luis Crivelli (1992-1993), Research and Development Engineer, Hibbitt, Karlsson & Sorensen, Inc.
- Stéphane Lantéri (1992-1993), Chargé de Recherches, INRIA Sophia Antipolis, France
- Florence Roudolff (1992), Senior Research Scientist, ONERA, France
- Eddy Pramono (1990-1992), Senior Engineer, the IC Design Group, Inc.
- Nahil Sobh (1988-1989), Group Leader, Research and Development, ARAMCO

## **Stanford University**

### **Graduate Curriculum**

- Has designed a new course on fluid/structure interactions

### **Courses Taught**

- Computational Methods in Fluid Mechanics - Graduate Level
- Introduction to Numerical Methods for Engineering - Graduate Level
- Finite Element-Based Modeling and Simulation of Linear Fluid/Structure Interaction Problems - Graduate Level

### **Undergraduate Students Supervised and Supported**

- Nicole Spillane, Conjugate Heat Transfer Analysis of Natural Convection Problems (2008-)
- Climène Dastillung, Performance Analysis of Time-Decomposed Parallel Solution Algorithms (2004-2005)
- Thomas Gullaud, Information Technology for Data-Driven Systems (2005)

### **Master Students Supervised**

- Harsh Menon, Unified Discretization of a Class of Nonlinear Aeroelastic Problems (2009-)
- Julie Fournier, Conjugate Heat Transfer Analysis of Hypersonic Systems (2007-2008)
- Dalei Wang, Dynamic Data-Driven Systems (2006-2007)
- Vamshi Kongara, Motion Algorithms for Dynamic Viscous CFD Meshes (2005-2006)
- David Amsallem, Accelerated Snapshot Computation for Reduced-Order Modeling (2005-2006)
- Jean Francois Dord, Underwater Imaging using Time Travel-Based Algorithms (2005-2006)
- Thomas Gullaud, High-Speed Interactive Scientific Visualization (2005-2006)
- Qiqi Wang, Design and Analysis of Kinetic Energy Conserving Arbitrary Lagrangian Eulerian Schemes (2005)
- Fang Sun, Software Architecture for Dynamic Data-Driven Systems (2005)
- Bjarte Haegland, Stability Analysis of Partitioned Procedures for the Solution of Fluid-Structure Interaction Problems (2004-2005)
- Arthur Rallu, Extrapolation Methods for the Treatment of Far-Field Boundary Conditions (2004-2005)

### **Doctoral Students Supervised**

- Sebastien Brogniez (2008-)
- Dalei Wang (2008-)
- Brian Flynt (2007-2008)
- Edmond Chiu (2007-)

- Xianyi Zeng (2007–)
- Kevin Wang (2007–)
- Irina Kalashnikova (2007–)
- Kevin Carlberg (2006–)
- David Amsallem (2006–)
- Julien Cortial (2005–)
- Arthur Rallu, Ph. D. Thesis: A Multiphase Fluid-Structure Computational Framework For Underwater Implosion Problems (2009)
- Jean-Francois Dord, Ph.D. Thesis: High Resolution Underwater Imaging of Complex Objects Using Sparse Sensor Arrays (2009)
- Ajaykumar Rajasekharan, Ph.D. Thesis: Variationally Consistent Multiscale and Arbitrary Lagrangian Eulerian Time-Integrators for Large Eddy Simulations of Turbulent Flows on Dynamic Grids (2008), Seagate
- Charbel Bou-Mosleh, Ph.D. Thesis: Methodologies for Reproducing In-Flight Loads of Aircraft Wings on the Ground and Predicting Their Response to Battle-Induced Damage (2005), Professor, Notre Dame University, Lebanon

#### **Post-Doctoral Assistants Supervised**

- David Powell (2008–)
- Paolo Massimi (2007–)
- Goeric Daeninck (2007)
- Steffen Petersen (2007)
- Charbel Bou-Mosleh (2006-2008)
- Debraj Ghosh (2005-2008)
- Sriram Shankaran (2005-2006)
- Lin Zhang (2005-2006)
- Thuan Lieu (2004-2008)
- Henri Bavestrello (2004-2005)
- Philip Avery (2004-2006)

#### **Research Associates Mentored**

- Charbel Bou-Mosleh (2009–)
- Philip Avery (2006–)
- Radek Tezaur (2004–)

### **UNIVERSITY SERVICE ACTIVITIES**

#### **The University of Colorado at Boulder**

##### **College of Engineering**

- Dean Search Committee (2001-2002)

- Vice-Chancellor Internal Campus Review Committee (1998)
- The First Level Review Committee (1997-1999)
- Academic Representative for the CAS Program Plan at NASA Ames Research Center (1993)
- Executive Committee Member, Center for Space Construction (1992-1994)
- Committee for the Study of the Merger of Aerospace Engineering Sciences and Mechanical Engineering (1988)

#### **Department of Aerospace Engineering Sciences**

- Chair, Faculty Search Committee (1999)
- Space Needs ad hoc Committee (1997-1998)
- Graduate Committee (1991, 1992-1996)
- Faculty Search Committee (1990)
- Budget Committee (1988, 1989, 1991)
- Teaching and Curriculum Committee (1987, 1988, 1992, 1994)

#### **Stanford University**

##### **Office of the Vice Provost and Dean of Research**

- Director of Stanford's Office of Science Outreach Search Committee (2007)

##### **Department of Mechanical Engineering**

- Faculty Reappointment Committee (2004)
- Admissions Committee (2005, 2006)
- Chair, Better Professional Environment Committee (2005-2006)

##### **Institute for Computational and Mathematical Engineering**

- Steering Committee (2005, 2006)
- Graduate Program Committee (2006,2007)

#### **PROFESSIONAL PRACTICE**

##### **Consulting Activities**

- Aerion, Inc.
- ANALATOM, Inc.
- ANSYS, Inc.
- Barron Associates, Inc.
- CFD Research Corporation
- CS Communication et Systèmes, France
- Dassault Aviation, France
- Desktop Aeronautics, Inc.
- D&P, LLC.

- European Space Agency, The Netherlands
- Ford Motor Company (CAE Systems)
- GDTech France, Inc.
- Gesellschaft Für Mathematik und Datenverarbeitung, Mbh., Germany
- Goodyear Tire & Rubber Company
- GRI, Inc.
- Lockheed Missiles and Space Company, Inc.
- Lockheed-Martin Aeronautics
- RENAULT (Direction de la Mécanique), France
- RENAULT F1 TEAM, France
- SAMTECH, S.A., Belgium
- Sandia National Laboratories
- Stirling Dynamics, Inc.
- Structural Software Development, Inc.
- Systems Technology, Inc.
- TechnoSoft, Inc.
- Toyota Motor Corporation, Japan

#### **Government Agencies**

- NATO (AGARD)

### **PROFESSIONAL SERVICE ACTIVITIES**

#### **Professional Societies**

- Fellow, International Association of Computational Mechanics (**IACM**)
- Fellow, World Innovation Foundation (**WIF**)
- Fellow, US Association of Computational Mechanics (**USACM**)
- Fellow, American Institute of Aeronautics and Astronautics (**AIAA**)
- Fellow, American Society of Mechanical Engineers (**ASME**)
- Member, Society for Industrial and Applied Mathematics (**SIAM**)
- Member, Selection Committee 2009 Theodore von Karman Prize (**SIAM**)
- Member, General Council, International Association for Computational Mechanics (**IACM, 2009-**)
- Member, Applied Mechanics Division's Committee on Fluid-Structure Interaction (**ASME, 2008-**)
- Corresponding Member, Executive Council, International Association for Computational Mechanics (**IACM, 2006-**)
- Vice-Chair, Society for Industrial and Applied Mathematics' Activity Group on Supercomputing (**SIAG/SC, 2003-2006**)

- Member-at-Large, U. S. Association for Computational Mechanics (**USACM, 1995-2006**)
- Member, General Council, International Association for Computational Mechanics (**IACM, 2000-**)

### **Editorial Boards**

- Editorial Board, Springer's Series on Lecture Notes in Numerical Methods in Engineering and Sciences (2009-)
- Editorial Board, International Journal for Numerical Methods in Biomedical Engineering (2010-)
- Editor, International Journal for Numerical Methods in Engineering (2007-)
- Editorial Board, Mathematical Modelling and Numerical Analysis (M2AN) (2005-)
- Editorial Board, International Journal for Numerical Methods in Fluids (2005-)
- Editorial Board, International Journal of Computational Methods in Engineering Science and Mechanics (2005-)
- Editorial Board, SIAM Series on Computational Science and Engineering (2004-2009)
- Associate Editor, AIAA Journal of Aerospace Computing, Information, and Communication (2003)
- Editorial Board, La Revue Européenne des Eléments Finis (2002-)
- Associate Editor, International Journal for Numerical Methods in Engineering (2001-)
- Editor, Computing and Visualization in Science (1998-)
- Editorial Board, Engineering with Computers (1998-)
- Editorial Board, Communications in Numerical Methods in Engineering (2005-2009)
- Advisory Editorial Board, International Journal for Numerical Methods in Engineering (1998-2001)
- Board of Advisory Editors, Computer Methods in Applied Mechanics and Engineering (1997-)
- Editorial Board, Parallel Computing (1996-2005)
- Editorial Board, SIAM Review (1994-1999)
- Subject Area Editor, The International Journal of High Performance Computing Applications, The MIT Press Journals (1993-)

### **Editorial Work**

- Co-Editor, Proceedings of the Tenth International Meeting on Domain Decomposition Methods for Sciences and Engineering, AMS (1998)
- Co-Editor, Proceedings of the Fourth Copper Mountain Conference on Multigrid Methods, SIAM (1989)

### **Advisory Boards and Committees**

- Sandia National Laboratory, Predictive Engineering Sciences Panel (2009-)
- SIAM, Theodore von Karman Prize Selection Committee (2009)
- U.S. Department of Commerce, U.S. Bureau of Industry and Security's Emerging Technology and Research Advisory Committee (ETRAC) (2008-)
- Institut Universitaire des Systèmes Thermiques Industriels (IUSTI), Evaluation Committee (2006)
- Office National d'Études et de Recherches Aéropatiales (ONERA), High Scientific Council (2006-2012)
- Sandia National Laboratory, Sandia Science Advisory Board (2006-)

- Center for Scientific Computing and Optimization in Multidisciplinary Applications (SCOMA), Jyväskylä, Finland (2005-)
- President's Information Technology Advisory Committee (PITAC), Subcommittee on Computational Science (2004)
- Institut National de Recherche en Informatique et Automatique (INRIA), Thème NumD Panel of Experts (2004)
- National Science Foundation, Simulation-Based Engineering Sciences Initiative Panel (2004)
- National Science Foundation, Information Technology Research Review Panel (2003)
- Sandia National Laboratory, Engineering Sciences Research Foundation's External Review Panel (Chair) (2002-)
- National Research Council (NRC), Army Research Laboratory Technical Assessment Board's Panel on Air and Ground Vehicle Technology (2002-2007)
- The Fourteenth Annual Robert J. Melosh Medal Competition, Duke University (2002)
- National Science Foundation, Advanced Computational Research (2001)
- National Science Foundation, Dynamic Data-Driven Application Systems (2000)
- Ecole Nationale des Ponts et Chaussées, Département de Mathématiques Appliquées (1998)
- IEEE Awards Committee (1998-2004)
- National Science Foundation, New Strategic Initiative for FY2000 and Beyond (1998)
- National Science Foundation, Engineering Research Center Review Panel (1997)
- AIAA Structures Technical Committee (1996-2001)
- National Science Foundation, CAREER Awards (1996-1997)
- Computational Aerosciences Review and Planning, NASA Ames Research Center (1994-1997)
- National Science Foundation, MetaCenter Allocations Committee (1994-1996)
- Joint Pittsburgh/Illinois Supercomputing Peer Review Board (1993-1996)
- National Science Foundation, Division of Electrical Communication Systems (1993)
- National Science Foundation, NYI Awards (1993)
- IBM Academy of Science and Technology Study (1993)
- National Science Foundation, ASC Postdoctoral Research Associateship Program (1991)
- National Science Foundation, ASC SBIR Awards (1990)
- Committee on Parallel Processing and Supercomputing, Aerospace Division of **ASCE** (1987-1989)

#### **Workshop and Conference Committees**

- Scientific Committee Member, 16th U.S. National Congress on Theoretical and Applied Mechanics, Penn State University, Pennsylvania, June 27-July 2 (2010)
- International Advisory Board Member, 4th European Conference on Computational Mechanics, Paris, France, May 17-21 (2010)
- Scientific Committee Member, 19th U.S. National Congress of Computational Mechanics, Ohio State University, Columbus, Ohio, July 16-19 (2009)
- Technical Advisory Panel Member, Marine 2009, III International Conference on Computational Methods in Marine Engineering, Trondheim, Norway, June 15-17 (2009)

medskin

- Technical Advisory Panel Member, Coupled Problems 2009, III International Conference on Computational Methods for Coupled Problems in Science and Engineering, Ischia Island, Italy, June 8-11 (2009)
- Scientific Committee Member, South-East European Conference on Computational Mechanics, Rhodes, Greece, June 22-24 (2009)
- Fifteenth International Conference on Finite Elements in Flow Problems (FEF09), Tokyo, Japan, April 1-3 (2009)
- International Advisory Board Member, 8th World Congress on Computational Mechanics, Venice, Italy, June 30-July 5 (2008)
- Applications Program Committee, Supercomputing 2007 (SC07), Reno, Nevada, November 10-16 (2007)
- Ninth US National Congress on Computational Mechanics, San Francisco, California, July 22-26 (2007)
- International Organizing Committee Member, 14th International Conference on Finite Elements in Flow Problems (FEF07), Santa Fe, New Mexico, March 26-28 (2007)
- Scientific Committee Member, IUTAM Symposium on Discretization Methods for Evolving Discontinuities, INSA de Lyon, Lyon, France, September 4-7 (2006)
- Scientific Advisory Board, Seventh World Congress on Computational Mechanics, Los Angeles, California, July 16-22 (2006)
- Scientific Committee Member, 15th U.S. National Congress on Theoretical and Applied Mechanics, University of Colorado at Boulder, Boulder, Colorado, June 25-30 (2006)
- Co-Chair, SIAM Conference on Parallel Processing for Scientific Computing, San Francisco, California, February 22-24 (2006)
- Scientific Program Committee Member, Eighth US National Congress on Computational Mechanics, Austin, Texas, July 24-28 (2005)
- Technical Advisory Panel Member, Marine 2005, Computational Methods in Marine Engineering, Oslo, Norway, June 27-29 (2005)
- Technical Advisory Panel Member, Computational Methods for Coupled Problems in Science and Engineering, Santorini Island, Greece, May 25-28 (2005)
- International Organizing Committee Member, Thirteen Conference on Finite Elements for Flow Problems (FEF05), Swansea, United Kingdom, April 4-6 (2005)
- Scientific and Industrial Committee Member, Fourth European Congress on Computational Methods in Applied Sciences and Engineering, Jyvaskyla, Finland, July 24-28 (2004)
- Scientific Program Committee Member, Seventh US National Congress on Computational Mechanics, Albuquerque, New Mexico, July 27-31 (2003)
- Local Organizing and Scientific Committee Member, Multiscale Computational Mechanics for Material and Structures, Cachan, France, September 18-20 (2002)
- Scientific Program Committee Member, International Parallel and Distributed Processing Symposium, Ft. Lauderdale, Florida, April 15-19 (2002)
- Scientific Program Committee Member, Sixth US National Congress on Computational Mechanics, Dearborn, Michigan, August 1-4 (2001)
- Scientific Committee Member, Fourth International Colloquium on Computation of Shell and Spatial Structures, Crete, Greece, June 5-7 (2000)
- Organizing Committee Member, Fifth US National Congress on Computational Mechanics, Boulder, Colorado, August 4-6 (1999)

- Program Committee Member, HPC'ASIA 98 Conference and Exhibition, Singapore, September 22-25 (1998)
- Program Committee Member, Fifth International Symposium on Solving Irregularly Structured Problems in Parallel, Berkeley, California, August 9-11 (1998)
- International Advisory Board Member, Sixth International Conference on Numerical Grid Generation and Computational Field Simulation, Greenwich, England, July 6-9 (1998)
- Chairman, Tenth International Conference on Domain Decomposition Methods in Sciences and Engineering, Boulder, Colorado, August 11-14 (1997)
- International Advisory Committee Member for the Fourth U.S. National Congress on Computational Mechanics, San Francisco, California, August 6-8 (1997)
- Program Committee Member, Frontiers' 96, The Sixth Symposium on the Frontiers of Massively Parallel Computation, Annapolis, Maryland, October 27-31 (1996)
- Organizing Committee Member, The 1995 Engineering Mechanics Conference, Boulder, Colorado, May 22-24 (1995)
- Program Committee Member, Frontiers' 95, The Fifth Symposium on the Frontiers of Massively Parallel Computation, McLean, Virginia, February 6-9 (1995)
- Program Committee Member, 8th ACM International Conference on Supercomputing, Manchester, July 11-15 (1994)
- Host and organizer of the biennial NSF Communications and Computational Systems Grantees Meeting, Boulder, Colorado, May 16-18 (1994)
- Editorial Board, The Second International Conference on Computational Structures Technology, Athens, Greece, August 30-September 1 (1994)
- Member, International Scientific Advisory Committee, First International Conference on Parallel Processing for Computational Mechanics, Southampton, England, September 4-6 (1990)
- Member, Technical Committee, First U.S. Conference on Discrete Element Methods, Golden, Colorado, October 17-18 (1989)
- Theme Chairman, Fourth Copper Mountain Conference on Multigrid Methods, Copper Mountain, Colorado, April 9-13 (1989)

## PLENARY LECTURES

- 2009 Symposium of the Netherlands Graduate School of Engineering Mechanics, Lunteren, The Netherlands, October 29-30 (2009)
- Tenth US National Congress on Computational Mechanics, Columbus, Ohio, July 16-19 (2009)
- Marine 2009, Computational Methods in Marine Engineering, Trondheim, Norway, June 15-17 (2009)
- Computational Mechanics: The Next Decade, George Mason University, Washington DC, March 27 (2009)
- First African Conference on Computational Mechanics (AfriComp'09), Sun City, South Africa, January 7-11 (2009)
- Eighth World Congress on Computational Mechanics (WCCM VIII), Venice, Italy, June 30-July 5 (2008)
- Advanced Computational Methods in Engineering (ACOMEN) 2008, Liege, Belgium, May 26-28 (2008)
- Fourteenth International Conference on Finite Elements in Flow Problems, Santa Fe, New Mexico, March 26-28 (2007)

- Seventh World Congress on Computational Mechanics, Los Angeles, California, July 16-22 (2006)
- Challenges in Computational Mechanics, Cachan, France, May 10-12 (2006)
- Septième Colloque de l'Association Calcul de Structures et Modélisations (CSMA), Giens, France, May 17-20 (2005)
- Iberian Congress of Computational Methods in Engineering, Lisbon, Portugal, May 31-June 2 (2004)
- The 2004 SIAM Conference on Parallel Processing for Scientific Computing, San Francisco, California, February 25-27 (2004)
- Third Conference on Numerical Methods in Engineering and Applied Sciences in Latin America, Monterrey, Mexico, January 22-24 (2004)
- CANUM 2000 (32ème Congrès National d'Analyse Numérique), Port d'Albret, France, June 5-9 (2000)
- Fifteenth International Conference on Structural Mechanics in Reactor Technology (SMiRT-15), Seoul, Korea, August 15-20 (1999)
- Fourth European Computational Fluid Dynamics Conference (ECCOMAS), Athens, Greece, September 7-11 (1998)
- Fourth US National Congress on Computational Mechanics, San Francisco, California, August 6-8 (1997)
- 1997 NSF Design and Manufacturing Grantees Conference, Seattle, Washington, January 7-10 (1997)
- IBM STAR Forum, Strategies for Today and Tomorrow, IBM Research Division Headquarters, Yorktown, New York, October 25-27 (1995)
- von Kármán Institute Lecture Series, Belgium, May 15-19 (1995)
- Fifth SIAM Conference on Parallel Processing for Scientific Computing, Houston, Texas, March 25-27 (1991)
- IBM Europe Institute 1988, Supercomputing in Engineering Structures, Oberlech, Austria, July 11-15 (1988)

## KEYNOTE AND INVITED LECTURES

- MUSAF Colloquium: Multiphysics and Unsteady Simulations for Aeronautical Flows, Toulouse, France, September 27-29 (2010)
- Tenth US National Congress on Computational Mechanics, Columbus, Ohio, July 16-19 (2009)
- Aircraft Structural Design: Challenges for the Next Generation – Concept to Disposal, The Foresight Centre, Liverpool, UK, October 14-16 (2008)
- Workshop Fluid-Structure-Interaction: Theory, Numerics and Applications, Munich, Germany, September 29-October 1 (2008)
- Fast Algorithms for Scientific Computing, A Symposium in Honor of Olof B. Widlund on the Occasion of his 70<sup>th</sup> Birthday, New York City, September 19-20 (2008)
- Transforming Engineering through Computational Simulation, A Computation-Based Engineering Summit, National Academy of Engineering, Washington, September 16-18 (2008)
- AFOSR Workshop on Aeroelastic, Unsteady Aerodynamics and Fluid-Structure Interaction, Washington, DC, February 11-12 (2008)
- The KD Wood Colloquium, Boulder, Colorado, January 25 (2008)
- The 2008 AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, January 7-10 (2008)

- Thirty-Second Conference of the Dutch-Flemish Numerical Analysis Communities, Woudschoten, Zeist, October 3-5 (2007)
- Invited Lecture, Collaborative Research Center on “Flow Modulation and Fluid-Structure Interaction at Airplane Wings,” RWTH Aachen University, Aachen, Germany, September 14 (2007)
- Ninth US National Congress on Computational Mechanics, San Francisco, California, July 22-26 (2007)
- International Conference on Computational Methods for Coupled Problems in Science and Engineering, Ibiza, Spain, May 21-23 (2007)
- International Workshop on Higher-Order Finite Element Methods, Herrsching am Ammersee, Germany, May 17-19 (2007)
- XV Congreso Sobre Métodos Numéricos y sus Aplicaciones (ENIEF 2006), Santa Fe, Argentina, November 7-10 (2006)
- Tenth Annual ASME PVP Meeting, Vancouver, Canada, July 25-28 (2006)
- Seventh World Congress on Computational Mechanics, Los Angeles, California, July 16-22 (2006)
- The Fourth International Symposium on Computational Wind Engineering (CWE2006), Yokohama, Japan, July 16-19 (2006)
- Interdisciplinary Multiscale Computational Methodologies, Research Triangle Park, North Carolina, June 14-15 (2006)
- International Meeting on Grid and Parallel Computing, Beirut, Lebanon, January 4-7 (2006)
- First International Seminar on Innovative Scientific Computing for Challenging Multidisciplinary Applications: Methods, Tools and Collaborative Environments, Jyvaskyla, Finland, October 3-5 (2005)
- Eighth US National Conference on Computational Mechanics, Austin, Texas, August 24-28 (2005)
- Third IMACS Conference on Mathematical Modelling and Computational Methods, Pilsen, Czech Republic, July 4-8 (2005)
- Thirteenth Conference on Finite Elements for Flow Problems (FEF05), Swansea, United Kingdom, April 4-6 (2005)
- Sixth World Congress on Computational Mechanics (WCCM VI), Beijing, China, September 5-10 (2004)
- Fourth European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS), Jyvaskyla, Finland, July 24-28 (2004)
- IMET 2004, Iterative Methods, Preconditioning and Numerical PDEs, Prague, Czech Republic, May 25-28 (2004)
- Second Sandia Workshop on PDE-Constrained Optimization: Toward Real-time and Online PDE-constrained Optimization, Santa Fe, New Mexico, May 19-21 (2004)
- Advances in Computational Mechanics, A Conference Celebrating the 60th Birthday of Thomas J. R. Hughes, Houston, Texas, April 7-9 (2004)
- Seventh US National Congress on Computational Mechanics, Albuquerque, New Mexico, July 27-31 (2003)
- Fifteenth International Conference on Domain Decomposition Methods, Berlin, Germany, July 21-25 (2003)
- IMAMM’03, Industrial Mathematics and Mathematical Modeling, Roznov, Czech Republic, June 30-July 4 (2003)
- EuroConference on Problem Solving Environments and the Information Society, Albufeira, Portugal, June 14-19 (2003)

- 50th AGM and Conference of the Canadian Aeronautics and Space Institute, Montréal, Canada, April 28-30 (2003)
- First South-American Congress on Computational Mechanics, Parana, Argentine, October 28-31 (2002)
- Multi-scale Computational Mechanics for Materials and Structures, Cachan, France, September 18-20 (2002)
- International Workshop on Modeling and Simulation of Fluid/Structure/Acoustic Interaction, University of Stuttgart, Germany, September 9-11 (2002)
- PET Workshop on Fluid-Structure Interactions, Mississippi State University, Mississippi, July 30-11 (2002)
- Fifth World Congress on Computational Mechanics (WCCM V), Austria, July 7-12 (2002)
- 2002 PET Frontier Lecture Series, High Performance Technologies, Inc., Aberdeen, Maryland, March 11-12 (2002)
- Iterative Solvers for Large Linear Systems, A Conference Commemorating 50 Years of Conjugate Gradients, ETH Zurich, Switzerland, February 18-21 (2002)
- 40th Aerospace Sciences Meeting and Exhibit (AIAA), Reno, Nevada, January 14-17 (2002)
- 2nd European Conference on Computational Mechanics (ECCM), Solids, Structures, and Coupled Problems in Engineering, Cracow, Poland, June 26-29 (2001)
- Workshop on Domain Decomposition Methods, ETH Zurich, Switzerland, June 7-8 (2001)
- ParCFD2001 (Parallel Computational Fluid Dynamics), Egmond aan Zee, The Netherlands, May 21-23 (2001)
- Second AMIF (Applied Mathematics for Industrial Flows) International Conference, Il Ciocco, Tuscany, Italy, October 12-14 (2000)
- XX CILAMCE (Iberian Latin-American Conference on Computational Methods in Engineering), Sao Paulo, Brasil, November 3-5 (1999)
- Computational Modeling and Applications, LNCC, Petropolis, Rio de Janeiro, Brazil, July 12-15 (1999)
- International Conference on Preconditioning Techniques for Large Sparse Matrix Problems in Industrial Applications, Minneapolis, Minnesota, June 10-12 (1999)
- Fourth Mississippi State Conference on Differential Equations and Computational Simulations, Starkville, Mississippi, May 21-22 (1999)
- ICTCA'99, Fourth International Conference on Theoretical and Computational Acoustics, Trieste, Italy, May 10-14 (1999)
- International Symposium on Computational Methods for Fluid-Structure Interaction, Trondheim, Norway, February 15-17 (1999)
- Workshop on Recent Advances in Computational Structural Dynamics and High Performance Computing, USAE Waterways Experiment Station, Vicksburg, MS, November 3-4 (1998)
- MAPINT'98/MDICE, Wright Patterson Air Force Base, Dayton, Ohio, August 25-27 (1998)
- ICASE/LaRC Aero-Structure Workshop, Hampton, Virginia, August 3-4 (1998)
- Eleventh International Conference on Domain Decomposition Methods, London, England, July 20-24 (1998)
- Fourth World Congress on Computational Mechanics, Buenos Aires, Argentina, June 29-July 2 (1998)
- 29th AIAA Fluid Dynamics Meeting, Albuquerque, NM, June 15-18 (1998)

- Workshop on Domain Decomposition and Multifields in Fluid and Solid Mechanics, Sollerhaus, Austria, April 26-May 2 (1998)
- A Conference on Numerical Analysis and Domain Decomposition in honor of Olof B. Widlund on the Occasion of his 60th Birthday, Courant Institute of Mathematical Sciences, New York, January 23-24 (1998)
- XVIII CILAMCE (Iberian Latin-American Conference on Computational Methods in Engineering), Brasilia, Bresil, October 29-31 (1997)
- Numerical Unsteady Aerodynamic and Aeroelastic Simulation, 85th Meeting of the Structures and Materials Panel, AGARD-NATO, RTO, Aalborg, Denmark, October 14-15 (1997)
- Computational Aerodynamics - Past, Present and Future, The Boeing Company, Seattle, September 26-27 (1997)
- MAPINT'97 (Multi-disciplinary Applications and Interoperable Computing), Science and Engineering, Wright Patterson Air Force Base, Dayton, Ohio, June 16-18 (1997)
- Ninth International Conference on Domain Decomposition Methods in Science and Engineering, Bergen, Norway, June 3-8 (1996)
- Seventh International ANSYS Conference and Exhibition, Pittsburgh, Pennsylvania, May 20-22 (1996)
- Workshop on Recent Advances in Computational Structural Dynamics and High Performance Computing, USAE Waterways Experiment Station, Vicksburg, MS, April 24-26 (1996)
- Couplage Fluide-Structure, Ecole Polytechnique de Tunis, La Marsa, Tunisia, March 27-29 (1996)
- Séminaire sur les Architectures Logicielles, Ecole Nationale Supérieure d'Informatique et d'Analyse de Systèmes, Rabat, Morocco, March 6-9 (1996)
- SUP'EUR 95, High Performance Computing in Europe, Madrid, Spain, September 25-27 (1995)
- ENUMATH 95, The First European Conference on Numerical Mathematics and Advanced Applications, Paris, France, September 18-22 (1995)
- Colloque sur les Modélisations et Méthodes Numériques en Ingénierie Pétrolière, Ecole Polytechnique Tunis, La Marsa, Tunisia, September 20-21 (1995)
- Calcul à Hautes Frequences et Parallelisme en Electromagnetisme, Institut Galilee, Universite Paris XIII, Paris, France, May 22-23 (1995)
- Scientific Computing 95, Baptist University, Hong-Kong, May 12-13 (1995)
- Parallelisme en Mecanique des Solides et des Structures, Paris, France, December 6 (1994)
- IV Argentine Congress of Computational Mechanics (MECOM'94), Mar del Plata, Argentine, November 8-11 (1994)
- Les Premieres Journees Maghrebines de Mathematiques Appliquees, Bizerte, Tunisia, November 1-5 (1994)
- Second European Computational Fluid Dynamics Conference (ECCOMAS), Stuttgart, Germany, September 5-8 (1994)
- Sixth International Conference on Physics Computing, Lugano, Switzerland, August 22-26 (1994)
- Sixth International Congress on Computational and Applied Mathematics (ICCAM 94), Leuven, Belgium, July 25-30 (1994)
- The Eurosim 1994 International Conference on Massively Parallel Processing, Delft, The Netherlands, June 21-23 (1994)
- Workshop on Domain-Based Parallelism and Problem Decomposition Methods in Computational Science and Engineering, Minneapolis, Minnesota, April 25-26 (1994)

- Second Japan-US Symposium on Finite Element Methods for Fluid Dynamics, Tokyo, Japan, March 14-16 (1994)
- Symposium on Parallel Finite Element Computations, Minnesota Supercomputer Institute, Minneapolis, October 25-27 (1993)
- NATO Advanced Study Institute on Computer Aided Analysis of Rigid and Flexible Mechanical Systems, Troia, Portugal, June 27-July 9 (1993)
- PARALLEL CFD'93, Paris, France, May 10-12 (1993)
- BENCHMARK of Concurrent Architectures for their Use in Scientific Engineering (BECAUSE) European Workshop, Sophia-Antipolis, France, October 13-16 (1992)
- Sixth International Conference on Domain Decomposition Methods in Science and Engineering, Como, Italy, June 15-19 (1992)
- Fifth Copper Mountain Conference on Iterative Methods, Copper Mountain, Colorado, April 9-14 (1992)
- Numerical Methods for Parallel Computers, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, February 9-15 (1992)
- Tenth International Conference on Computing Methods in Applied Sciences and Engineering, Paris, France, February 11-14 (1992)
- First GAMNI/CSM Workshop on Large Flexible Space Structures, Paris, France, December 16-17 (1991)
- 1991 International Conference on Supercomputing, Cologne, Germany, June 17-21 (1991)
- Meeting on Domain Decomposition and Parallel Computing for Partial Differential Equations, ICASE, NASA LaRC, September 24-25 (1990)
- First International Conference on Parallel Processing For Computational Mechanics, Southampton, England, September 4-6 (1990)
- Fourth Copper Mountain Conference on Iterative Methods, Copper Mountain, Colorado, April 1-5 (1990)
- SINTEF/RUNIT University of Trondheim, Series of Lectures on Parallel Numerical Algorithms for Computational Mechanics, Trondheim, Norway, March 26-30 (1989)
- Fourth International Symposium on Science and Engineering on CRAY Supercomputers, Minneapolis, Minnesota, October 12-14 (1988)
- Forum on Advanced Computing, Denver, Colorado, April, 23-24 (1987)

## **CONTRACTS AND GRANTS (Funded)**

### **Principal Investigator**

- CFD-Based Nonlinear Aeroelastic Methodologies with Reduced-Order Modeling, The Boeing Company, \$300,000 (2009-2012)
- Computational Mathematics for Reduced-Order Model Databases, King Abdullah University of Science and Technology, \$104,597 (2008-2009)
- High-Order Discontinuous Enrichment Methods for Effective Signature Computations in the Mid-Frequency Regime, Office of Naval Research, \$600,000 (2008-2011)
- A Physics-Based Predictive Computational Model for the High-Performance Analysis of Implodable Payloads, Office of Naval Research, \$4,785,876 (2008-2013)

- Development of a Reduced-Order Method for the CFD-Based Aerodynamic Performance Analysis of a Formula One Car, Toyota Motor Corporation, \$300,000 (2007-2008)
- Feasibility Study of a Unified CFD-CSD Computational Formulation, NASA Research Announcement, \$150,000 (2007-2008)
- Army High Performance Computing Research Center, US Army Research Laboratory, \$106,608,773 (2007-2012)
- Multidisciplinary Analysis of Hot Aerospace Structures, Air Force Office of Scientific Research, \$300,000 (2007-2010)
- Unsteady CFD Analyses of a Formula One Car, Toyota Motor Corporation, \$150,000 (2006-2007)
- Parameterized Aeroelastic Reduced-Order Modeling of Fighters, Air Force Office of Scientific Research, \$300,000 (2006-2009)
- A Four-Field Computational Framework for the Aerothermomechanical Analysis of Hypersonic Vehicles, Air Force Office of Scientific Research, \$250,000 (2006-2009)
- Physics-Based Multidisciplinary Failure Analysis of Submerged Implodable Volumes, Office of Naval Research, \$3,210,000 (2006-2009)
- Multi-Disciplinary Ship Design Environment, TechnoSoft, Inc., \$315,000 (2006-2008)
- Buffet and Dynamic Loads Analysis, CMSOft, Inc., \$15,302 (2006)
- Implementation of FETI into FEM for CEM Simulation, High Performance Technologies, Inc., \$60,000 (2006)
- Acoustic Signatures of Mines Located Near the Ocean Bottom, High Performance Technologies, Inc., \$165,000 (2005-2006)
- A Dynamic Data-Driven System for Structural Health Monitoring and Critical Event Prediction, National Science Foundation, \$825,000 (2005-2008)
- Aerodynamic/Aeroelastic Effects on a Class of High-Speed Vehicles, Toyota Motor Corporation, \$135,000 (2005-2006)
- High-Resolution Methods for the Solution of Direct and Inverse Acoustic Scattering Problems, Office of Naval Research, \$750,000 (2005-2008)
- A Scalable Solution Methodology for Speeding up the Modeling of Acoustic Signatures, High Performance Technologies, Inc., \$165,000 (2004-2005)
- A Collaborative for Naval Computational Mechanics, Office of Naval Research, \$1,350,000 (2004-2007)
- High Performance Computing Modernization Program - Programming Environment and Training (PET), High Performance Technologies, Inc., \$600,000 (2003-2009)
- Methodologies for Predicting and Testing the Effects of Combat Damage on Flight Envelopes, Air Force Office of Scientific Research, \$1,340,000 (2002-2005)
- Discovery Learning through Multidisciplinary Senior Design Projects, Lockheed-Martin Foundation, \$150,000 (2002-2005)
- A Data-Driven Environment for Multiphysics Applications, National Science Foundation, \$1,579,834 (2002-2005)
- Scalable Substructuring Methods for Linear and Nonlinear Dynamics Problems, Sandia National Laboratories, \$1,100,000 (2002-2008)
- A Scalable Domain Decomposition Method for the Solution of Contact Problems, National Science Foundation, \$41,922 (2002-2004)

- Supersonic Aircraft Shaping Technology for a Constrained Shock Pressure Rise, Nasa Langley Research Center, \$150,000 (2002-2003)
- Identification of a Computational Platform for Whole Ship Modeling, Office of Naval Research, \$8,000 (2002-2003)
- Evaluation of Computational Aeroelastic Technology, Lockheed-Martin Aeronautics, \$20,000 (2002)
- Convergence Analysis of a Component Mode Synthesis Method, Sandia National Laboratories, \$12,560 (2002)
- The Discontinuous Enrichment Method for Wave Propagation, The Binational Science Foundation, \$150,000 (2001-2003)
- A Scalable Method for the Solution of Contact Problems, Sandia National Laboratories, \$75,000 (2001)
- Supersonic Aircraft Shaping Technology for a Constrained Shock Pressure Rise via Structural and Materials Optimization, Defense Advanced Research Projects Agency, \$356,000 (2001)
- High-Performance and Fidelity Multidisciplinary Simulation Methods for Supporting and Innovating Flight Testing, Air Force Office of Scientific Research, \$1,217,000 (2000-2003)
- An Internet-Based Meta-Model Driven Distributed Workbench for MBS, National Science Foundation, \$149,999 (2000-2001)
- Simulation of the Transient Aeroelastic Response of a Realistic Aircraft Configuration During Three-Dimensional High G Maneuvers, Air Force Office of Scientific Research, \$548,820 (1999-2001)
- Sensitivity Analysis and Fast Solution Methods for Direct and Inverse Acoustic Scattering Problems, Office of Naval Research, \$1,133,772 (1998-2004)
- Scalable Algorithms for Massive Parallel Computations, Sandia National Laboratories, \$420,000 (1998-2001)
- High Performance Simulation of Multiphysics Problems in Turbulence, Control, and Structural Design, National Science Foundation, \$4,229,564 (1997-2000)
- Real Time Predictive Flutter Analysis and Continuous Parameter Identification of Accelerating Aircraft, Air Force Office of Scientific Research, \$1,162,672 (1997-2000)
- Numerical Simulation of Three-Dimensional High G Dynamic Maneuvers of a Complete Aircraft Configuration, Air Force Office of Scientific Research, \$483,730 (1997-1998)
- Domain Decomposition Methods for Scientific and Engineering Problems, National Science Foundation, \$31,990 (1997-1998)
- HPCC Methodologies for Structural Design and Analysis on Parallel and Distributed Computing Platforms, NASA Langley Research Center, \$219,000 (1996-1999)
- Domain Decomposition Methods for Scientific and Engineering Problems, National Science Foundation, \$38,000 (1996-1999)
- HPC Methods for Coupled Fluid/Structure/Control Problems, National Science Foundation, \$88,200 (1996-1998)
- Sensitivity Analysis of Coupled Acoustic Problems to Structural Boundary Conditions and Efficient Numerical Solution Algorithms, Office of Naval Research, \$481,000 (1995-1998)
- Domain Decomposition Methods in Science and Engineering, National Science Foundation, \$30,000 (1995-1996)
- High Performance Solution of Three-Dimensional Nonlinear Transient Aeroelastic Problems, National Science Foundation, \$88,200 (1995-1996)
- Supplement to President Young Investigator Award, National Science Foundation, \$29,117 (1995)

- Supplement to President Young Investigator Award, National Science Foundation, \$14,976 (1994)
- Coupled Fields and GAFD Turbulence, National Science Foundation (Grand Challenges Award), \$4,500,000, (15)
- Massively Parallel and Scalable Implicit Time Integration Algorithms for Structural Dynamics, NASA Ames Research Center, \$225,000 (1992-1995)
- High Performance Computational Methods for Structural Mechanics, National Science Foundation, \$96,000 (1992-1994)
- The Front Range Consortium, Defense Advanced Research Projects Agency, \$5,650,000 (1991-1994)
- High Performance Substructuring Algorithms for Massively Parallel Architectures, NASA Langley Research Center, \$270,000 (1991-1994)
- Massively Parallel CFD Computations, National Science Foundation, \$50,000 (1991-1994)
- President Young Investigator Award, National Science Foundation, \$250,000 (1989-1994)
- President Young Investigator Award, Matching Funds from Lockheed M.S.C., CRAY Research Foundation, TRW Research Foundation, Michelin (France), Aerospatiale (France), and Framatome (France), \$250,000 (1989-1994)
- Concurrent Processing Methods for Nonlinear Structural Dynamics, National Science Foundation, \$292,968 (1988-1990)
- Concurrent Finite Element Computations on the Connection Machine, Naval Research Laboratory, \$60,411 (1988-1989)
- Concurrent Finite Element Analysis on the ETA-10, Control Data Corporation, \$50,000 (1987-1989)

#### **Co-Principal Investigator and Percentage**

- Predictive Simulations of Multi-Physics Flow Phenomena with Application to Integrated Hypersonic Systems, Department of Energy, (5%), \$16,000,000 (2008-20013)
- Hybrid Unsteady Simulation for Helicopters, Defense Advanced Research Projects Agency, (25%), \$1,803,472 (2004-2006)
- Collaborative Research: Acquisition of an IBM BlueGene/L Supercomputer, National Science Foundation, (25%), \$1,053,558 (2004-2007)
- High-Performance and High-fidelity Aeroelastic Simulation of Fixed Wing Aircraft with Deployable Control Surfaces, Air Force Office of Scientific Research, \$298,000, (33%), (2004-2007)
- Computational Methods for the Solution of Three-Dimensional Inverse Acoustic and Elastoacoustic Scattering Problems, National Science Foundation, \$221,538, (50%), (2002-2005)
- Simulation Platform for the Earthquake Response of Reinforced Concrete Structures, National Science Foundation, \$150,000, (25%), (2000-2001)
- Development and Applications of the Aerosonde at the University of Colorado, Department of Defense (DURIP), \$370,000, (20%), (2000)
- Numerical Prediction of the Performance of Radial Model Coriolis Flowmeters, Direct Measurement Corporation, \$30,000, (50%), (1998)
- Parallel Computational Methods for Large-Scale Structural Dynamics, Sandia National Laboratories, \$274,957, (33%), (1997-1998)
- Acquisition of a Grand Challenge Data Laboratory, NCSA, University of Illinois (subcontract), \$210,216, (50%), (1996-1997)

- A Matrix-Free Parallel Algorithm for Solving Nonlinear Mechanics Problems, Sandia National Laboratories, \$101,452, (33%), (1996-1997)
- Domain Decomposition and Multi-Level Techniques in Large-Scale Parallel Computing, \$74,000, (33%), (1994-1997)
- High Performance Parallel Analysis of Coupled Problems for Aircraft Propulsion, NASA Lewis Research Center, \$469,848, (33%), (1993-1995)
- Space Structure Concepts, Shimizu Corporation, Japan, \$700,000, (25%), (1991-1994)
- Advanced Methods Development for Computational Structural Mechanics, NASA Langley Research Center, \$697,337, (33%), (1990-1993)
- Parallel Processing and Scientific Applications, Air Force Office of Scientific Research, \$750,000, (50%), (1989-1992)
- Analysis, Preliminary Design and Simulation Systems for Control-Structure Interaction Problems, NASA Langley Research Center, \$371,797, (33%), (1989-1992)
- Numerical Simulation of Transition in a Compressible Boundary Layer on the Connection Machine, National Science Foundation, \$30,000, (50%), (1989-1990)
- Computational Methods and Software Systems for Dynamics and Control of Large Space Structures, NASA Langley Research Center, \$191,345, (50%), (1989-1990)
- Center for Space Construction, NASA Headquarters, \$10,500,000, (6.5%), (1988-1995)

## CONTRACTS AND GRANTS (Pending)

### Co-Principal Investigator and Percentage

## PUBLICATIONS

### Refereed Monographs and Book Chapters

1. J. Michopoulos, P. Tsompanopoulou, E. Houstis, C. Farhat, M. Lesoinne and J. Rice, "Design of a Data-Driven Environment for Multiphysics and Multi-Domain Applications," *Dynamic Data Driven Applications Systems*, ed. F. Darema, Kluwer Academic Publishers, Netherlands, (*in press*)
2. Z. Dostál, V. Vondrák, D. Horák, C. Farhat and P. Avery, "Scalable FETI Algorithms for Frictionless Contact Problems," in: *Domain Decomposition Methods in Sciences and Engineering XVII, Lecture Notes in Computational Science and Engineering (LNCSE)*, eds. U. Langer et al., Springer, Vol. 60, Berlin, pp. 263-270 (2008)
3. J. Cortial, C. Farhat, M. Rajashekhar and L. Guibas, "Compressed Sensing and Time-Parallel Reduced-Order Modeling for Structural Health Monitoring using a DDDAS," *Lecture Notes in Computer Science*, ed. Y. Shi et al., Springer-Verlag, Vol. 4487, pp. 1171-1179 (2007)
4. J. Cortial and C. Farhat, "A Time-Parallel Implicit Methodology for the Near-Real-Time Solution of Systems of Linear Oscillators," *Real-Time PDE-Constrained Optimization*, ed. L. Biegler, O. Ghattas, M. Heinkenschloss, D. Keyes and B. van Bloemen Waanders, Computational Science and Engineering, SIAM (2007)
5. C. Farhat, J. G. Michopoulos, F. K. Chang, L. J. Guibas and A. J. Lew, "Towards a Dynamic Data Driven System for Structural and Material Health Monitoring," *Lecture Notes in Computer Science*, ed. V. N. Alexandrov, G. D. van Albada, P. M.A. Sloot, and J. Dongarra, Springer-Verlag, Vol. 3993, pp. 456-464 (2006)

6. J. Michopoulos, C. Farhat, E. Houstis, P. Tsompanopoulou, H. Zhang and T. Gullaud, "Dynamic Data Driven Methodologies for Multiphysics System Modeling and Simulation," *Lecture Notes in Computer Science*, ed. V. S. Sunderam, G. D. van Albada, P. M. A. Sloot, et al., Springer-Verlag, Vol. 3515, Part II, pp. 616-623 (2005)
7. C. Farhat, "The Discontinuous Enrichment Method (DEM) for Multiscale Analysis," *Septième Colloque National en Calcul des Structures, Giens 2005*, ed. R. Ohayon, J-P. Grellier, A. Rassineux, Hermès Science Publications, Vol. 1 pp. 33-34 (2005)
8. C. Farhat, J. Li, M. Lesoinne and P. Avery, "A FETI Method for the Solution of a Class of Indefinite or Complex Second- or Fourth-Order Problems," *Lecture Notes in Computational Science and Engineering*, ed. R. Kornhuber, R. H. W. Hoppe, D. E. Keyes, J. Periaux, O. Pironneau and J. Xu, Springer-Verlag, Haidelberg, pp. 19-34 (2004)
9. C. Farhat, "CFD-Based Nonlinear Computational Aeroelasticity," *Encyclopedia of Computational Mechanics*, ed. E. Stein, R. De Borst and T. Hughes, John Wiley & Sons, Vol. 3, (2004)
10. R. Djellouli, R. Tezaur and C. Farhat, "On the Solution of Inverse Obstacle Acoustic Scattering Problems with a Limited Aperture," *Mathematical and Numerical Aspects of Wave Propagation*, ed. G. C. Cohen, E. Heikkola, P. Joly and P. Neittaanmaki, Springer, pp. 625-630 (2003)
11. J. Michopoulos, P. Tsompanopoulou, E. Houstis, J. Rice, C. Farhat, M. Lesoinne and F. Lechenault, "DDEMA: a Data-Driven Environment for Multiphysics Applications," *Lecture Notes in Computer Science*, ed. P. M. A. Sloot, D. Abramson, A. Bogdanov, J. J. Dongarra, A. Zomaya and Y. Gorbachev, Springer-Verlag, Haidelberg, Vol. 2660, Part IV, pp. 309-318 (2003)
12. U. Hetmaniuk and C. Farhat, "A Blended Fictitious/Real Domain Decomposition Method for Partially Axisymmetric Exterior Helmholtz Problems with Dirichlet Boundary Conditions," *Recent Developments in Domain Decomposition Methods*, ed. L. F. Pavarino and A. Toselli, Lecture Notes in Computational Science and Engineering, Springer, Vol. 23, pp. 1-26 (2002)
13. C. Farhat and D. Rixen, "Computational Methods: Linear Algebra, Generalized Inverse, SVD," *Encyclopedia of Vibration*, ed. S. G. Braun, D. J. Ewins and S. S. Rao, Academic Press Ltd, pp. 710-720 (2001)
14. C. Farhat and P. LeTallec, "Vistas in Domain Decomposition and Parallel Processing in Computational Mechanics," *Computer Methods in Applied Mechanics and Engineering*, Vol. 184, Nos. 2-4 (2000)
15. C. Farhat, B. Koobus and H. Tran, "Simulation of Vortex Shedding Dominated Flows Past Rigid and Flexible Structures," *Computational Methods for Fluid-Structure Interaction*, ed. T. Kvamsdal, I. Enevoldsen, K. Herfjord, C. B. Jenssen, K. Mehr and S. Norsett, Tapir, pp. 1-30 (1999)
16. C. Farhat and M. Lesoinne, "Fast Staggered Algorithms for the Solution of Three-Dimensional Nonlinear Aeroelastic Problems," AGARD Report R-822, Numerical Unsteady Aerodynamic and Aeroelastic Simulation (l'Aérodynamique instationnaire numérique et la simulation de l'aéroélasticité), North Atlantic Treaty Organization (NATO), March (1998)
17. C. Farhat, "Parallel and Distributed Solution of Coupled Nonlinear Dynamic Aeroelastic Response Problems," *Solving Large-Scale Problems in Mechanics: Parallel and Distributed Computer Applications*, ed. M. Papadrakakis, J. Wiley, pp. 243-302 (1997)
18. C. Farhat, "High Performance Simulation of Coupled Nonlinear Transient Aeroelastic Problems," AGARD Report R-807, Special Course on Parallel Computing in CFD (l'Aérodynamique numérique et le calcul en parallèle), North Atlantic Treaty Organization (NATO), October (1995)
19. C. Farhat, "Optimizing Substructuring Methods for Repeated Right Hand Sides, Scalable Parallel Coarse Solvers, and Global/Local Analysis," *Domain-Based Parallelism and Problem Decomposition Methods in Computational Science and Engineering*, ed. D. Keyes, Y. Saad and D. G. Truhlar, SIAM, pp. 141-160 (1995)
20. C. Farhat and F. X. Roux, "Implicit Parallel Processing in Structural Mechanics," *Computational Mechanics Advances*, Vol. II, No. 1, pp. 1-124 (1994)
21. C. Farhat, "Domain Decomposition and Parallel Processing," *Postgraduate Studies in Supercomputing*, ed. FNRS/NFWO, Université de Liège, Belgium (1992)

22. C. Farhat, "An Introduction to Parallel Scientific Computations," *Postgraduate Studies in Supercomputing*, ed. FNRS/NFWO, Université de Liège, Belgium (1991)
23. C. Farhat, "Finite Element Analysis on Concurrent Machines," *Parallel Processing in Computational Mechanics*, ed. H. Adeli, Marcel Dekker, Inc., New York, pp. 183-218 (1991)

### Refereed Journals

1. D. Amsallem, J. Cortial and C. Farhat, "Towards Real-Time CFD-Based Aeroelastic Computations Using a Database of Reduced-Order Models," *AIAA Journal*, (submitted for publication)
2. B. Danowsky, P. Thompson, C. Farhat, T. Lieu, C. Harris and J. Lechniak, "A Complete Aeroseroelastic Model: Incorporation of Oscillation-Reduction-Control into a High-Order CFD/FEM Fighter Aircraft Model," *Journal of Guidance, Control, and Dynamics*, (submitted for publication)
3. B. Danowsky, J. Chrstos, D. Klyde, C. Farhat and M. Brenner, "Application of Multiple Methods for Aeroelastic Uncertainty Analysis," *Journal of Aircraft*, (submitted for publication)
4. J. F. Dord and C. Farhat, "A Hybrid Kirchhoff Migration-Direction of Arrival Method for Underwater Imaging of Complex Objects Using Sparse Sensor Arrays," *Journal of the Acoustical Society of America*, (submitted for publication)
5. C. Farhat, I. Kalashnikova and R. Tezaur, "A Higher-Order DEM for Unstructured Mesh High Péclet Advection-Diffusion Problems," *International Journal for Numerical Methods in Engineering*, (in press)
6. D. Amsallem, K. Carlberg, J. Cortial and C. Farhat, "A Method for Interpolating on Manifolds Structural Dynamics Reduced-Order Models," *International Journal for Numerical Methods in Engineering*, (in press)
7. D. Ghosh, P. Avery and C. Farhat, "A FETI-Preconditioned Conjugate Gradient Method for Large-Scale Stochastic Finite Element Problems," *International Journal for Numerical Methods in Engineering*, (in press)
8. P. Avery, C. Farhat and U. Hetmaniuk, "A Padé-Based Factorization-Free Algorithm for Identifying the Eigenvalues Missed by a Generalized Symmetric Eigensolver," *International Journal for Numerical Methods in Engineering*, (in press)
9. C. Farhat, R. Tezaur and J. Toivanen, "A Domain Decomposition Method for Discontinuous Galerkin Discretizations of Helmholtz Problems with Plane Waves and Lagrange Multipliers," *International Journal for Numerical Methods in Engineering*, (in press)
10. J. Cortial and C. Farhat, "A Time-Parallel Implicit Method for Accelerating the Solution of Nonlinear Structural Dynamics Problems," *International Journal for Numerical Methods in Engineering*, (in press)
11. B. Argrow, K. Maute, G. Dickinson, C. Farhat and M. Nikbay-Bayraktar, "F-Function Lobe Balancing for Sonic Boom Minimization," *Frontiers of Computational Fluid Dynamics*, (in press)
12. S. Petersen, C. Farhat and R. Tezaur, "A Space-Time Discontinuous Galerkin Method for the Solution of the Wave Equation in the Time-Domain," *International Journal for Numerical Methods in Engineering*, Vol. 78, pp. 275-295 (2009)
13. P. Avery and C. Farhat, "The FETI Family of Domain Decomposition Methods for Inequality-Constrained Quadratic Programming: Application to Contact Problems with Conforming and Nonconforming Interfaces," *Computer Methods in Applied Mechanics and Engineering*, Vol. 198, pp. 1673-1683 (2009)
14. A. Rajasekharan and C. Farhat, "Applications of a Variational Multiscale Method for Large Eddy Simulation of Turbulent Flows on Moving/Deforming Unstructured Grids," *Finite Elements in Analysis and Design*, Vol. 45, pp. 272-279 (2009)
15. I. Kalashnikova, C. Farhat and R. Tezaur, "A Discontinuous Enrichment Method for the Finite Element Solution of High Peclet Advection-Diffusion Problems," *Finite Elements in Analysis and Design*, Vol.45, pp. 238-250 (2009)
16. M. Amara, R. Djellouli and C. Farhat, "Convergence Analysis of a Discontinuous Galerkin Method with Plane Waves and Lagrange Multipliers for the Solution of Helmholtz Problems," *SIAM Journal on Numerical Analysis*, Vol.47, pp. 1038-1066 (2009)

17. D. Amsallem and C. Farhat, "An Interpolation Method for Adapting Reduced-Order Models and Application to Aeroelasticity," *AIAA Journal*, Vol. 46, pp. 1803-1813 (2008)
18. P. Massimi, R. Tezaur and C. Farhat, "A Discontinuous Enrichment Method for Three-Dimensional Multiscale Harmonic Wave Propagation Problems in Multi-Fluid and Fluid-Solid Media," *International Journal for Numerical Methods in Engineering*, Vol. 76, pp. 400-425 (2008)
19. C. Farhat, A. Rallu and S. Shankaran, "A Higher-Order Generalized Ghost Fluid Method for the Poor for the Three-Dimensional Two-Phase Flow Computation of Underwater Implosions," *Journal of Computational Physics*, Vol. 227, pp. 7674-7700 (2008)
20. D. Ghosh and C. Farhat, "Strain and Stress Computations in Stochastic Finite Element Methods," *International Journal for Numerical Methods in Engineering*, Vol. 74, pp. 1219-1239 (2008)
21. C. Bou-Mosleh and C. Farhat, "Stress-Based Optimization Method for Reproducing In-Flight Loads Using Concentrated Forces," *AIAA Journal*, Vol. 46, pp. 1273-1277 (2008)
22. R. Tezaur, L. Zhang and C. Farhat, "A Discontinuous Enrichment Method for Capturing Evanescent Waves in Multiscale Fluid and Fluid/Solid Problems," *Computer Methods in Applied Mechanics and Engineering*, Vol. 197, pp. 1680-1698 (2008)
23. K. Maute, C. Farhat, B. Argrow and M. Nikbay, "Sonic Boom Mitigation via Shape Optimization using an Adjoint Method and Application to a Supersonic Fighter Aircraft," *Revue Européenne de Mécanique Numérique (European Journal of Computational Mechanics)*, Vol. 17, pp. 217-243 (2008)
24. T. Lieu and C. Farhat, "Adaptation of Aeroelastic Reduced-Order Models and Application to an F-16 Configuration," *AIAA Journal*, Vol. 45, pp. 1244-1269 (2007)
25. C. Farhat, K. Maute, B. Argrow and M. Nikbay, "A Shape Optimization Methodology for Reducing the Sonic Boom Initial Pressure Rise," *AIAA Journal of Aircraft*, Vol. 45, pp. 1007-1018 (2007)
26. H. Bavestrello, P. Avery and C. Farhat, "Incorporation of Linear Multipoint Constraints in Domain-Decomposition-Based Iterative Solvers - Part II: Blending FETI-DP and Mortar Methods and Assembling Floating Substructures," *Computer Methods in Applied Mechanics and Engineering*, Vol. 86, pp. 1347-1368 (2007)
27. P. Avery, C. Farhat and G. Reese, "Fast Frequency Sweep Computations Using a Multi-point Padé-Based Reconstruction Method and an Efficient Iterative Solver," *International Journal for Numerical Methods in Engineering*, Vol. 69, pp. 2848-2875 (2007)
28. C. Farhat, J. Cortial, C. Dastillung and H. Bavestrello, "Time-Parallel Implicit Integrators for the Near-Real-Time Prediction of Linear Structural Dynamic Responses," *International Journal for Numerical Methods in Engineering*, Vol. 67, pp. 697-724 (2006)
29. T. Lieu, C. Farhat and M. Lesoinne, "Reduced-Order Fluid/Structure Modeling of a Complete Aircraft Configuration," *Computer Methods in Applied Mechanics and Engineering*, Vol. 195, pp. 5730-5742 (2006)
30. L. Zhang, R. Tezaur and C. Farhat, "The Discontinuous Enrichment Method for Elastic Wave Propagation in the Medium-Frequency Regime," *International Journal for Numerical Methods in Engineering*, Vol. 66, pp. 2086-2114 (2006)
31. R. Tezaur and C. Farhat, "Three-Dimensional Discontinuous Galerkin Elements with Plane Waves and Lagrange Multipliers for the Solution of Mid-Frequency Helmholtz Problems," *International Journal for Numerical Methods in Engineering*, Vol. 66, pp. 796-815 (2006)
32. I. Harari, R. Tezaur and C. Farhat, "A Study of Higher-Order Discontinuous Galerkin and Quadratic Least-Squares Stabilized Finite Element Computations for Acoustics," *Journal of Computational Acoustics*, Vol. 14, pp. 1-19 (2006)
33. C. Farhat, A. Rajasekharan and B. Koobus, "A Dynamic Variational Multiscale Method for Large Eddy Simulations on Unstructured Meshes," *Computer Methods in Applied Mechanics and Engineering*, Vol. 195, pp. 1667-1691 (2006)
34. C. Farhat, K. G. van der Zee and P. Geuzaine, "Provably Second-Order Time-Accurate Loosely-Coupled Solution Algorithms for Transient Nonlinear Computational Aeroelasticity," *Computer Methods in Applied Mechanics and Engineering*, Vol. 195, pp. 1973-2001 (2006)

35. C. Farhat, "CFD on Moving Grids: From Theory to Realistic Flutter, Maneuvering, and Multidisciplinary Optimization," *International Journal of CFD*, Vol. 19, pp. 595-603 (2005)
36. C. Farhat, P. Avery, R. Tezaur and J. Li, "FETI-DPH: A Dual-Primal Domain Decomposition Method for Acoustic Scattering," *Journal of Computational Acoustics*, Vol. 13, pp. 499-524 (2005)
37. J. Michopoulos, C. Farhat and J. Fish, "Modeling and Simulation of Multiphysics Systems," *Transactions of the ASME, Journal of Computing & Information Science in Engineering*, Vol. 5, pp. 169-263 (2005)
38. C. Farhat and J. Li, "An Iterative Domain Decomposition Method for the Solution of a Class of Indefinite Problems in Computational Structural Dynamics," *IMACS Journal of Applied Numerical Mathematics*, Vol. 54, pp. 150-166 (2005)
39. C. Farhat, J. Li and P. Avery, "A FETI-DP Method for the Parallel Iterative Solution of Indefinite and Complex-Valued Solid and Shell Vibration Problems," *International Journal for Numerical Methods in Engineering*, Vol. 63, pp. 398-427 (2005)
40. J. Michopoulos, P. Tsompanopoulou, E. Houstis, C. Farhat, M. Lesoinne, J. Rice and A. Joshi, "On a Data-Driven Environment for Multiphysics Applications," *Future Generation Computer Systems*, Vol. 21, (2005)
41. C. Farhat, B. Argrow, M. Nikbay and K. Maute, "Shape Optimization with F-Function Balancing for Reducing the Sonic Boom Initial Shock Pressure Rise", *The International Journal of Aeroacoustics*, Vol. 3, pp. 361-377 (2004)
42. C. Farhat, R. Tezaur and P. Wiedemann-Goiran, "Higher-Order Extensions of a Discontinuous Galerkin Method for Mid-Frequency Helmholtz Problems," *International Journal for Numerical Methods in Engineering*, Vol. 61, pp. 1938-1956 (2004)
43. C. Farhat, P. Wiedemann-Goiran and R. Tezaur, "A Discontinuous Galerkin Method with Plane Waves and Lagrange Multipliers for the Solution of Short Wave Exterior Helmholtz Problems on Unstructured Meshes," *Journal of Wave Motion*, Vol. 39, pp. 307-317 (2004)
44. C. Farhat and P. Geuzaine, "Design and Analysis of Robust ALE Time-Integrators for the Solution of Unsteady Flow Problems on Moving Grids," *Computer Methods in Applied Mechanics and Engineering*, Vol. 193, pp. 4073-4095 (2004)
45. P. Avery, G. Rebel, M. Lesoinne and C. Farhat, "A Numerically Scalable Dual-Primal Substructuring Method for the Solution of Contact Problems - Part I: the Frictionless Case," *Computer Methods in Applied Mechanics and Engineering*, Vol. 193, pp. 2403-2426 (2004)
46. B. Koobus and C. Farhat, "A Variational Multiscale Method for the Large Eddy Simulation of Compressible Turbulent Flows on Unstructured Meshes – Application to Vortex Shedding," *Computer Methods in Applied Mechanics and Engineering*, Vol. 193, pp. 1367-1384 (2004)
47. E. Turkel, C. Farhat and U. Hetmaniuk, "Improved accuracy for the Helmholtz equation in unbounded domains," *International Journal for Numerical Methods in Engineering*, Vol. 59, pp. 1963-1988 (2004)
48. A. Dervieux, B. Koobus, E. Schall, R. Lardat and C. Farhat, "Application of Unsteady Fluid-Structure Methods to Problems in Aeronautics and Space," *Notes on Numerical Fluid Mechanics and Multidisciplinary Design*, ed. N. Barton and J. Periaux, Springer Verlag (2003)
49. C. Farhat and M. Chandesris, "Time-Decomposed Parallel Time-Integrators: Theory and Feasibility Studies for Fluid, Structure, and Fluid-Structure Applications," *International Journal for Numerical Methods in Engineering*, Vol. 58, pp. 1397-1434 (2003)
50. U. Hetmaniuk and C. Farhat, "A Fictitious Domain Decomposition Method for the Solution of Partially Axisymmetric Acoustic Scattering Problems - Part II: Neumann Boundary Conditions," *International Journal for Numerical Methods in Engineering*, Vol. 58, pp. 63-81 (2003)
51. P. Geuzaine, C. Grandmont and C. Farhat, "Design and Analysis of ALE Schemes with Provable Second-Order Time-Accuracy for Inviscid and Viscous Flow Simulations," *Journal of Computational Physics*, Vol. 191, pp. 206-227 (2003)
52. C. Farhat, I. Harari and U. Hetmaniuk, "The Discontinuous Enrichment Method for Multiscale Analysis," *Computer Methods in Applied Mechanics and Engineering*, Vol. 192, pp. 3195-3210 (2003)

53. I. Harari, C. Farhat and U. Hetmaniuk, "Multiple-Stencil Dispersion Analysis of the Lagrange Multipliers in a Discontinuous Galerkin Method for the Helmholtz Equation," *Journal of Computational Acoustics*, Vol. 11, pp. 239-254 (2003)
54. U. Hetmaniuk and C. Farhat, "A Finite Element-Based Fictitious Domain Decomposition Method for the Fast Solution of Partially Axisymmetric Sound-Hard Acoustic Scattering Problems," *Finite Elements in Analysis and Design*, Vol. 39, pp. 707-725 (2003)
55. P. Geuzaine, G. Brown, C. Harris and C. Farhat, "Aeroelastic Dynamic Analysis of a Full F-16 Configuration for Various Flight Conditions," *AIAA Journal*, Vol. 41, pp. 363-371 (2003)
56. C. Farhat, I. Harari and U. Hetmaniuk, "A Discontinuous Galerkin Method with Lagrange Multipliers for the Solution of Helmholtz Problems in the Mid-Frequency Regime," *Computer Methods in Applied Mechanics and Engineering*, Vol. 192, pp. 1389-1419 (2003)
57. K. Maute, M. Nikbay and C. Farhat, "Sensitivity Analysis and Design Optimization of Three-Dimensional Nonlinear Aeroelastic Systems by the Adjoint Method," *International Journal for Numerical Methods in Engineering*, Vol. 56, pp. 911-933 (2003)
58. C. Farhat, P. Geuzaine and G. Brown, "Application of a Three-Field Nonlinear Fluid-Structure Formulation to the Prediction of the Aeroelastic Parameters of an F-16 Fighter," *Computers and Fluids*, Vol. 32, pp. 3-29 (2003)
59. C. Farhat, R. Tezaur and R. Djellouli, "On the Solution of Three-Dimensional Inverse Obstacle Acoustic Scattering Problems by a Regularized Newton Method," *Inverse Problems*, Vol. 18, pp. 1229-1246 (2002)
60. C. Farhat and U. Hetmaniuk, "A Fictitious Domain Decomposition Method for the Solution of Partially Axisymmetric Acoustic Scattering Problems – Part I: Dirichlet Boundary Conditions," *International Journal for Numerical Methods in Engineering*, Vol. 54, pp. 1309-1332 (2002)
61. C. Degand and C. Farhat, "A Three-Dimensional Torsional Spring Analogy Method for Unstructured Dynamic Meshes," *Computers and Structures*, Vol. 80, pp. 305-316 (2002)
62. R. Tezaur, A. Macedo, C. Farhat and R. Djellouli, "Three-Dimensional Finite Element Calculations in Acoustic Scattering Using Arbitrarily Shaped Convex Artificial Boundaries," *International Journal for Numerical Methods in Engineering*, Vol. 53, pp. 1461-1476 (2002)
63. C. Farhat, P. Geuzaine and C. Grandmont, "The Discrete Geometric Conservation Law and the Non-linear Stability of ALE Schemes for the Solution of Flow Problems on Moving Grids," *Journal of Computational Physics*, Vol. 174, pp. 669-694 (2001)
64. K. Maute, M. Nikbay and C. Farhat, "Coupled Analytical Sensitivity Analysis and Optimization of Three-Dimensional Nonlinear Aeroelastic Systems," *AIAA Journal*, Vol. 39, pp. 2051-2061 (2001)
65. C. Farhat, I. Harari and L. Franca, "The Discontinuous Enrichment Method," *Computer Methods in Applied Mechanics and Engineering*, Vol. 190, pp. 6455-6479 (2001)
66. R. Tezaur, A. Macedo and C. Farhat, "Iterative Solution of Large-Scale Acoustic Scattering Problems with Multiple Right Hand-Sides by a Domain Decomposition Method with Lagrange Multipliers," *International Journal for Numerical Methods in Engineering*, Vol. 51, pp. 1175-1193 (2001)
67. M. Lesoinne and C. Farhat, "A CFD Based Method for Solving Aeroelastic Eigenproblems in the Subsonic, Transonic, and Supersonic Regimes," *AIAA Journal of Aircraft*, Vol. 38, pp. 628-635 (2001)
68. R. Djellouli, C. Farhat and R. Tezaur, "A Fast Method for Solving Acoustic Scattering Problems in Frequency Bands," *Journal of Computational Physics*, Vol. 168, pp. 412-432 (2001)
69. C. Farhat, K. Pierson and C. Degand, "Multidisciplinary Simulation of the Maneuvering of an Aircraft," *Engineering with Computers*, Vol. 17, pp. 16-27 (2001)
70. D. Dureisseix and C. Farhat, "A Numerically Scalable Domain Decomposition Method for the Solution of Frictionless Contact Problems," *International Journal for Numerical Methods in Engineering*, Vol. 50, pp. 2643-2666 (2001)
71. C. Felippa, K. C. Park and C. Farhat, "Partitioned Analysis of Coupled Mechanical Systems," *Computer Methods in Applied Mechanics and Engineering*, Vol. 190, pp. 3247-3270 (2001)

72. S. Piperno and C. Farhat, "Partitioned Procedures for the Transient Solution of Coupled Aeroelastic Problems - Part II: Energy Transfer Analysis and Three-Dimensional Applications," *Computer Methods in Applied Mechanics and Engineering*, Vol. 190, pp. 3147-3170 (2001)
73. M. Lesoinne, M. Sarkis, U. Hetmaniuk and C. Farhat, "A Linearized Method For the Frequency Analysis of Three-Dimensional Fluid/Structure Interaction Problems in all Flow Regimes," *Computer Methods in Applied Mechanics and Engineering*, Vol. 190, pp. 3121-3146 (2001)
74. C. Farhat, M. Lesoinne, P. LeTallec, K. Pierson and D. Rixen, "FETI-DP: A Dual-Primal Unified FETI Method - Part I: A Faster Alternative to the Two-Level FETI Method," *International Journal for Numerical Methods in Engineering*, Vol. 50, pp. 1523-1544 (2001)
75. B. Koobus, H. Tran and C. Farhat, "Computation of Unsteady Viscous Flows Around Moving Bodies Using the  $k-\varepsilon$  Turbulence Model on Unstructured Dynamic Grids," *Computer Methods in Applied Mechanics and Engineering*, Vol. 190, pp. 1441-1466 (2000)
76. H. Guillard and C. Farhat, "On the Significance of the Geometric Conservation Law for Flow Computations on Moving Meshes," *Computer Methods in Applied Mechanics and Engineering*, Vol. 190, pp. 1467-1482 (2000)
77. R. Lardat, R. Carpentier, B. Koobus, E. Schall, A. Dervieux, C. Farhat, J.-F. Guery and P. Della Pietra, "Interaction Between a Pulsating Flow and a Perforated Membrane," *La Revue Européenne des Eléments Finis*, Vol. 9, No. 6/7, pp. 805-817 (2000)
78. R. Lardat, B. Koobus, E. Schall, A. Dervieux and C. Farhat, "Analysis of a Possible Coupling in a Thrust Inverter," *La Revue Européenne des Eléments Finis*, Vol. 9, No. 6/7, pp. 819-834 (2000)
79. E. Shall, R. Lardat, A. Dervieux, B. Koobus and C. Farhat, "Aeroelastic Coupling Between a Thin Divergent and High Pressure Jets," *La Revue Européenne des Eléments Finis*, Vol. 9, No. 6/7, pp. 835-851 (2000)
80. C. Farhat, M. Lesoinne and K. Pierson, "A Scalable Dual-Primal Domain Decomposition Method," *Numerical Linear Algebra with Applications*, Vol. 7, pp. 687-714 (2000)
81. C. Farhat, A. Macedo and M. Lesoinne, "A Two-Level Domain Decomposition Method for the Iterative Solution of High Frequency Exterior Helmholtz Problems," *Numerische Mathematik*, Vol. 85, pp. 283-308 (2000)
82. R. Djellouli, C. Farhat, A. Macedo and R. Tezaur, "Finite Element Solution of Two-Dimensional Acoustic Scattering Problems Using Arbitrarily Shaped Convex Artificial Boundaries," *Journal of Computational Acoustics*, Vol. 8, pp. 81-100 (2000)
83. S. Piperno and C. Farhat, "Design of Efficient Partitioned Procedures for the Transient Solution of Aeroelastic Problems," *La Revue Européenne des Eléments Finis*, Vol. 9, No. 6/7, pp. 655-680 (2000)
84. C. Farhat, A. Macedo, M. Lesoinne, F. X. Roux, F. Magoulès and A. de La Bourdonnaie, "Two-Level Domain Decomposition Methods With Lagrange Multipliers for the Fast Iterative Solution of Acoustic Scattering Problems," *Computer Methods in Applied Mechanics and Engineering*, Vol. 184, pp. 213-240 (2000)
85. C. Farhat, K. Pierson and M. Lesoinne, "The Second Generation of FETI Methods and their Application to the Parallel Solution of Large-Scale Linear and Geometrically Nonlinear Structural Analysis Problems," *Computer Methods in Applied Mechanics and Engineering*, Vol. 184, pp. 333-374 (2000)
86. C. Farhat and M. Lesoinne, "Two Efficient Staggered Procedures for the Serial and Parallel Solution of Three-Dimensional Nonlinear Transient Aeroelastic Problems," *Computer Methods in Applied Mechanics and Engineering*, Vol. 182, pp. 499-516 (2000)
87. M. Bhardwaj, D. Day, C. Farhat, M. Lesoinne, K. Pierson and D. Rixen, "Application of the FETI Method to ASCI Problems: Scalability Results on One-Thousand Processors and Discussion of Highly Heterogeneous Problems," *International Journal for Numerical Methods in Engineering*, Vol. 47, pp. 513-536 (2000)
88. R. Djellouli and C. Farhat, "On the Characterization of the Fréchet Derivative with Respect to a Lipschitz Domain of the Acoustic Scattered Field," *Journal of Mathematical Analysis and Applications*, Vol. 238, pp. 259-276 (1999)

89. J. Mandel, R. Tezaur and C. Farhat, "A Scalable Substructuring Method by Lagrange Multipliers for Plate Bending Problems," *SIAM Journal on Numerical Analysis*, Vol. 36, pp. 1370-1391 (1999)
90. D. Rixen, C. Farhat, R. Tezaur and J. Mandel, "Theoretical Comparison of the FETI and Algebraically Partitioned FETI Methods, and Performance Comparisons with a Direct Sparse Solver," *International Journal for Numerical Methods in Engineering*, Vol. 46, pp. 501-534 (1999)
91. R. Djellouli, C. Farhat, J. Mandel and P. Vaněk, "Continuous Fréchet Differentiability with Respect to a Lipschitz Domain and a Stability Estimate for Direct Acoustic Scattering Problems," *IMA Journal of Applied Mathematics*, Vol. 63, pp. 51-69 (1999)
92. B. Koobus and C. Farhat, "On the Implicit Time-Integration of Semidiscrete Viscous Fluxes on Unstructured Dynamic Meshes," *International Journal for Numerical Methods in Fluids*, Vol. 29, No. 8, pp. 975-996 (1999)
93. B. Koobus and C. Farhat, "Second-Order Time-Accurate and Geometrically Conservative Implicit Schemes for Flow Computations on Unstructured Dynamic Meshes," *Computer Methods in Applied Mechanics and Engineering*, Vol. 170, pp. 103-130 (1999)
94. D. Rixen and C. Farhat, "A Simple and Efficient Extension of a Class of Substructure Based Preconditioners to Heterogeneous Structural Mechanics Problems," *International Journal for Numerical Methods in Engineering*, Vol. 44, pp. 489-516 (1999)
95. C. Farhat, C. Degand, B. Koobus and M. Lesoinne, "Torsional Springs for Two-Dimensional Dynamic Unstructured Fluid Meshes," *Computer Methods in Applied Mechanics and Engineering*, Vol. 163, pp. 231-245 (1998)
96. C. Farhat, C. Lacour and D. Rixen, "Incorporation of Linear Multipoint Constraints in Substructure Based Iterative Solvers - Part I: a Numerically Scalable Algorithm," *International Journal for Numerical Methods in Engineering*, Vol. 43, pp. 997-1016 (1998)
97. M. Lesoinne and C. Farhat, "A Higher-Order Subiteration Free Staggered Algorithm for Nonlinear Transient Aeroelastic Problems," *AIAA Journal*, Vol. 36, No. 9, pp. 1754-1756 (1998)
98. C. Farhat, M. Lesoinne and P. LeTallec, "Load and Motion Transfer Algorithms for Fluid/Structure Interaction Problems with Non-Matching Discrete Interfaces: Momentum and Energy Conservation, Optimal Discretization and Application to Aeroelasticity," *Computer Methods in Applied Mechanics and Engineering*, Vol. 157, pp. 95-114 (1998)
99. C. Farhat, P. S. Chen, F. Risler and F. X. Roux, "A Unified Framework for Accelerating the Convergence of Iterative Substructuring Methods with Lagrange Multipliers," *International Journal for Numerical Methods in Engineering*, Vol. 42, pp. 257-288 (1998)
100. C. Farhat, P. S. Chen, J. Mandel and F. X. Roux, "The Two-Level FETI Method - Part II: Extension to Shell Problems, Parallel Implementation and Performance Results," *Computer Methods in Applied Mechanics and Engineering*, Vol. 155, pp. 153-180 (1998)
101. C. Farhat and J. Mandel, "The Two-Level FETI Method for Static and Dynamic Plate Problems - Part I: an Optimal Iterative Solver for Biharmonic Systems," *Computer Methods in Applied Mechanics and Engineering*, Vol. 155, pp. 129-152 (1998)
102. D. Rixen, C. Farhat and M. Géradin, "A Two-Step, Two-Field Hybrid Method for the Static and Dynamic Analysis of Substructure Problems with Conforming and Non-Conforming Interfaces," *Computer Methods in Applied Mechanics and Engineering*, Vol. 154, pp. 229-264 (1998)
103. X.-C. Cai, C. Farhat and M. Sarkis, "A Minimum Overlap Restricted Additive Schwarz Preconditioner and Applications in 3D Flow Simulations," *Contemporary Mathematics*, Vol. 218, pp. 478-484 (1998)
104. A. de La Bourdonnaye, C. Farhat, A. Macedo, F. Magoulès and F. X. Roux, "A Non-Overlapping Domain Decomposition Method for the Exterior Helmholtz Problem," *Contemporary Mathematics*, Vol. 218, pp. 42-66 (1998)
105. F. X. Roux and C. Farhat, "Parallel Implementation of Direct Solution Strategies for the Coarse Grid Solvers in 2-Level FETI Methods," *Contemporary Mathematics*, Vol. 218, pp. 158-173 (1998)

106. H. Tran, B. Koobus and C. Farhat, "Numerical Simulation of Vortex Shedding Flows Past Moving Obstacles Using the  $k$ - $\epsilon$  Turbulence Model on Unstructured Dynamic Meshes," *La Revue Européenne des Eléments Finis*, Vol. 6, No. 5/6, pp. 611-642 (1998)
107. C. Farhat and M. G eradin, "On the General Solution by a Direct Method of a Large-Scale Singular System of Linear Equations: Application to the Analysis of Floating Structures," *International Journal for Numerical Methods in Engineering*, Vol. 41, pp. 675-696 (1998)
108. L. Franca, C. Farhat, M. Lesoinne and A. Russo, "Unusual Stabilized Finite Element Methods and Residual-Free Bubbles," *International Journal for Numerical Methods in Fluids*, Vol. 27, pp. 159-168 (1998)
109. L. Franca, C. Farhat, A. Macedo and M. Lesoinne, "Residual-Free Bubbles for the Helmholtz Equation," *International Journal for Numerical Methods in Engineering*, Vol. 40, pp. 4003-4009 (1997)
110. G. Brown, C. Farhat and F. Hemez, "Extending Sensitivity Based Updating to Lightly Damped Structures," *AIAA Journal*, Vol. 35, No. 8, pp. 1369-1377 (1997)
111. S. W. Doebbling, F. M. Hemez, L. D. Peterson and C. Farhat, "Improved Damage Location Accuracy Using Strain Energy-Based Mode Selection Criteria," *AIAA Journal*, Vol. 35, No. 4, pp. 693-699 (1997)
112. C. Farhat, M. Lesoinne, P. Stern and S. Lant eri, "High Performance Solution of Three-Dimensional Nonlinear Aeroelastic Problems Via Parallel Partitioned Algorithms: Methodology and Preliminary Results," *Advances in Engineering Software*, Vol. 28, pp. 43-61 (1997)
113. M. Lesoinne and C. Farhat, "Geometric Conservation Laws for Flow Problems with Moving Boundaries and Deformable Meshes and Their Impact on Aeroelastic Computations," *Computer Methods in Applied Mechanics and Engineering*, Vol. 134, pp. 71-90 (1996)
114. D. Vanderstraeten, C. Farhat, P. S. Chen, R. Keunings and O. Zone, "A Retrofit and Contraction Based Methodology for the Fast Generation and Optimization of Mesh Partitions: Beyond the Minimum Interface Size Criterion," *Computer Methods in Applied Mechanics and Engineering*, Vol. 133, pp. 25-45 (1996)
115. C. Farhat, M. Lesoinne and N. Maman, "Mixed Explicit/Implicit Time Integration of Coupled Aeroelastic Problems: Three-Field Formulation, Geometric Conservation and Distributed Solution," *International Journal for Numerical Methods in Fluids*, Vol. 21, pp. 807-835 (1995)
116. C. Farhat, P. S. Chen and J. Mandel, "A Scalable Lagrange Multiplier Based Domain Decomposition Method for Implicit Time-Dependent Problems," *International Journal of Numerical Methods in Engineering*, Vol. 38, pp. 3831-3854 (1995)
117. C. Farhat, S. Lant eri and H. D. Simon, "TOP/DOMDEC, A Software Tool for Mesh Partitioning and Parallel Processing," *Journal of Computing Systems in Engineering*, Vol. 6, No. 1, pp. 13-26 (1995)
118. C. Farhat, L. Crivelli and M. G eradin, "Implicit Time Integration of a Class of Constrained Hybrid Formulations - Part I: Spectral Stability Theory," *Computer Methods in Applied Mechanics and Engineering*, Vol. 125, pp. 71-107 (1995)
119. F. Hemez and C. Farhat, "Structural Damage Detection via a Finite Element Model Updating Methodology," *Modal Analysis*, Vol. 10, No. 3, pp. 152-166 (1995)
120. C. Farhat, "Large, out-of-core calculation runs on the IBM SP2," *Leading article NAS NEWS*, Vol. 2, No. 1, July-August (1995)
121. S. Piperno, C. Farhat and B. Larrouturou, "Partitioned Procedures for the Transient Solution of Coupled Aeroelastic Problems - Part I: Model Problem, Theory, and Two-Dimensional Application," *Computer Methods in Applied Mechanics and Engineering*, Vol. 124, Nos. 1-2, pp. 79-112 (1995)
122. F. Hemez and C. Farhat, "Bypassing the Numerical Difficulties Associated with Updating Simultaneously Mass and Stiffness Matrices," *AIAA Journal*, Vol. 33, No. 3, pp. 539-546 (1995)
123. L. P. Franca and C. Farhat, "Bubble Functions Prompt Unusual Stabilized Finite Element Methods," *Computer Methods in Applied Mechanics and Engineering*, Vol. 123, pp. 299-308 (1995)
124. C. Farhat, N. Maman and G. Brown, "Mesh Partitioning for Implicit Computations via Iterative Domain Decomposition: Impact and Optimization of the Subdomain Aspect Ratio," *International Journal for Numerical Methods in Engineering*, Vol. 38, pp. 989-1000 (1995)

125. N. Maman and C. Farhat, "Matching Fluid and Structure Meshes for Aeroelastic Computations: A Parallel Approach," *Computers & Structures*, Vol. 54, No. 4, pp. 779-785 (1995)
126. D. Vanderstraeten, R. Keunings and C. Farhat, "Beyond Conventional Mesh Partitioning Algorithms and the Minimum Edge Cut Criterion: Impact on Realistic Applications," *Parallel Processing for Scientific Computing*, ed. D. Bailey *et. al.*, SIAM, pp. 611-614 (1995)
127. D. Vanderstraeten, R. Keunings and C. Farhat, "Optimization of Mesh Partitions and Impact on Parallel CFD, Parallel Computational Fluid Dynamics," *New Trends and Advances*, ed. A. Ecer, J. Hauser, P. Leca, J. Périaux, North-Holland, pp. 233-239 (1995)
128. C. Farhat, P. S. Chen and P. Stern, "Towards the Ultimate Iterative Substructuring Method: Combined Numerical and Parallel Scalability, and Multiple Load Cases," *Journal of Computing Systems in Engineering*, Vol. 5, No. 4-6, pp. 337-350 (1995)
129. C. Farhat and P. S. Chen, "Tailoring Domain Decomposition Methods for Efficient Parallel Coarse Grid Solution and for Systems with Many Right Hand Sides," *Contemporary Mathematics*, Vol. 180, pp. 401-406 (1994)
130. C. Farhat and S. Lantéri, "Simulation of Compressible Viscous Flows on a Variety of MPPs: Computational Algorithms for Unstructured Dynamic Meshes and Performance Results," *Computer Methods in Applied Mechanics and Engineering*, Vol. 119, pp. 35-60 (1994)
131. C. Farhat and M. Géraudin, "On a Component Mode Synthesis Method and its Application to Incompatible Substructures," *Computers & Structures*, Vol. 51, pp. 459-473 (1994)
132. C. Farhat and L. P. Franca, "On the Limitations of Bubble Functions," *Computer Methods in Applied Mechanics and Engineering*, Vol. 117, pp. 225-230 (1994)
133. C. Farhat, L. Crivelli and F. X. Roux, "Extending Substructure Based Iterative Solvers to Multiple Load and Repeated Analyses," *Computer Methods in Applied Mechanics and Engineering*, Vol. 117, pp. 195-209 (1994)
134. C. Farhat, J. Mandel and F. X. Roux, "Optimal Convergence Properties of the FETI Domain Decomposition Method," *Computer Methods in Applied Mechanics and Engineering*, Vol. 115, pp. 367-388 (1994)
135. C. Farhat, "Fast Structural Design and Analysis Via Hybrid Domain Decomposition on Massively Parallel Processors," *Journal of Computing Systems in Engineering*, Vol. 4, No. 4-6, pp. 453-472 (1994)
136. C. Farhat and M. Lesoinne, "A Sensitivity Analysis of ALE Fluid Flow Formulations for Coupled Transient Aeroelastic Computations," *USACM Bulletin*, Vol. 2, No. 1, pp. 4-9 (1994)
137. C. Farhat, L. Crivelli and F. X. Roux, "A Transient FETI Methodology for Large-Scale Parallel Implicit Computations in Structural Mechanics," *International Journal for Numerical Methods in Engineering*, Vol. 37, pp. 1945-1975 (1994)
138. C. Farhat and F. X. Roux, "The Dual Schur Complement Method With Well-Posed Local Neumann Problems," *Contemporary Mathematics*, Vol. 157, pp. 193-201 (1994)
139. C. Farhat and F. Hemez, "Updating Finite Element Dynamic Models Using an Element-by-Element Sensitivity Methodology," *AIAA Journal*, Vol. 31, No. 9, pp. 1702-1711 (1993)
140. C. Farhat and M. Lesoinne, "Mesh Partitioning Algorithms for the Parallel Solution of P.D.E.s," *IMACS Journal of Applied Numerical Mathematics*, Vol. 12, pp. 443-457 (1993)
141. C. Farhat, P. S. Chen and F. X. Roux, "The Dual Schur Complement Method With Well-Posed Local Neumann Problems: Regularization with a Perturbed Lagrangian Formulation," *SIAM Journal on Scientific and Statistical Computing*, Vol. 14, No. 3, pp. 752-759 (1993)
142. J. C. Chiou, K. C. Park and C. Farhat, "A Natural Partitioning Scheme for Parallel Simulation of Multibody Systems," *International Journal for Numerical Methods in Engineering*, Vol. 36, pp. 945-967 (1993)
143. C. Farhat and T. Y. Lin, "A Structure Attached Corotational Fluid Grid For Transient Aeroelastic Computations," *AIAA Journal*, Vol. 31, No. 3, pp. 597-599 (1993)

144. S. Lantéri and C. Farhat, "Viscous Flow Computations on MPP Systems: Implementational Issues and Performance Results for Unstructured Grids," *Parallel Processing for Scientific Computing*, ed. R. F. Sincovec *et. al.*, SIAM, pp. 65-70 (1993)
145. C. Farhat and M. Lesoinne, "Automatic Partitioning of Unstructured Meshes for the Parallel Solution of Problems in Computational Mechanics," *International Journal for Numerical Methods in Engineering*, Vol. 36, No. 5, pp. 745-764 (1993)
146. C. Farhat, L. Fézoui and S. Lantéri, "Two-Dimensional Viscous Flow Computations on the Connection Machine: Unstructured Meshes, Upwind Schemes, and Massively Parallel Computations," *Computer Methods in Applied Mechanics and Engineering*, Vol. 102, No. 1, pp. 61-88 (1993)
147. C. Farhat, "A Saddle-Point Principle Domain Decomposition Method for the Solution of Solid Mechanics Problems," *Domain Decomposition Methods for Partial Differential Equations*, ed. D. E. Keyes, T. F. Chan, G. A. Meurant, J. S. Scroggs and R. G. Voigt, SIAM, pp. 271-292 (1992)
148. C. Farhat and M. Géradin, "Using a Reduced Number of Lagrange Multipliers for Assembling Parallel Incomplete Field Finite Element Approximations," *Computer Methods in Applied Mechanics and Engineering*, Vol. 97, pp. 333-354 (1992)
149. C. Farhat, S. Lantéri and L. Fézoui, "Mixed Finite Volume/Finite Element Massively Parallel Computations: Euler Flows, Unstructured Grids, and Upwind Approximations," *Unstructured Scientific Computation on Scalable Multiprocessors*, ed. P. Mehrotra, J. Saltz and R. Voigt, MIT Press, pp. 253-283 (1992)
150. C. Farhat, "Parallel Processing in Structural Mechanics: Blending Mathematical, Implementational, and Technological Advances," *Computing Methods in Applied Sciences and Engineering*, ed. R. Glowinski, Nova Science Publishers, Inc., New York, pp. 89-106 (1992)
151. C. Farhat and F. X. Roux, "An Unconventional Domain Decomposition Method for an Efficient Parallel Solution of Large-Scale Finite Element Systems," *SIAM Journal on Scientific and Statistical Computing*, Vol. 13, No. 1, pp. 379-396 (1992)
152. K. C. Park, J. D. Downer, J. C. Chiou and C. Farhat, "A Modular Multibody Analysis Capability for High Precision, Active Control and Real-Time Applications," *International Journal for Numerical Methods in Engineering*, Vol. 32, No. 8, pp. 1767-1798 (1991)
153. C. Farhat, "A Lagrange Multiplier Based Divide and Conquer Finite Element Algorithm," *Journal of Computing Systems in Engineering*, Vol. 2, No. 2/3, pp. 149-156 (1991)
154. C. Farhat and F. X. Roux, "A Method of Finite Element Tearing and Interconnecting and its Parallel Solution Algorithm," *International Journal for Numerical Methods in Engineering*, Vol. 32, pp. 1205-1227 (1991)
155. M. Lesoinne, C. Farhat and M. Géradin, "Parallel/Vector Improvements of the Frontal Method," *International Journal for Numerical Methods in Engineering*, Vol. 32, pp. 1267-1282 (1991)
156. C. Farhat, K. C. Park and Y. D. Pelerin, "An Unconditionally Stable Staggered Algorithm for Transient Finite Element Analysis of Coupled Thermoelastic Problems," *Computer Methods in Applied Mechanics and Engineering*, Vol. 85, pp. 349-365 (1991)
157. C. Farhat, "Redesigning the Skyline Solver for Parallel/Vector Supercomputers," *International Journal of High Speed Computing*, Vol. 2, No. 3, pp. 223-238 (1990)
158. C. Farhat, "Which Parallel Finite Element Algorithm for Which Architecture and Which Problem," *Engineering Computations*, Vol. 7, No. 3, pp. 185-195 (1990)
159. C. Farhat and E. Pramono, Mapping, "Solving and Visualizing Finite Element Problems on the Connection Machine," *Parallel Processing in Engineering Applications*, ed. R. A. Adey, Computational Mechanics Publications, Springer-Verlag, pp. 95-108 (1990)
160. A. Saati, S. Biringen and C. Farhat, "Solving Navier-Stokes Equations on a Massively Parallel Processor: Beyond the One Gigaflop Performance," *International Journal of Supercomputer Applications*, Vol. 4, No. 1, pp. 72-80 (1990)
161. C. Farhat and N. Sobh, "A Consistency Analysis of a Class of Concurrent Transient Implicit/Explicit Algorithms," *Computer Methods in Applied Mechanics and Engineering*, Vol. 84, pp. 147-162 (1990)

162. C. Farhat, N. Sobh and K. C. Park, "Transient Finite Element Computations on 65,536 Processors: The Connection Machine," *International Journal for Numerical Methods in Engineering*, Vol. 30, pp. 27-55 (1990)
163. C. Farhat, E. Pramono and C. Felippa, "Towards Parallel I/O in Finite Element Simulations," *International Journal for Numerical Methods in Engineering*, Vol. 28, No. 11, pp. 2541-2554 (1989)
164. C. Farhat, N. Sobh and K. C. Park, "Dynamic Finite Element Simulations on the Connection Machine," *International Journal of High Speed Computing*, Vol. 1, No. 2, pp. 289-302 (1989)
165. C. Farhat and N. Sobh, "A Coarse/Fine Preconditioner for Very Ill-Conditioned Finite Element Problems," *International Journal for Numerical Methods in Engineering*, Vol. 28, No. 7, pp. 1715-1723 (1989)
166. C. Farhat, "On the Mapping of Massively Parallel Processors Onto Finite Element Graphs," *Computers & Structures*, Vol. 32, No. 2, pp. 347-354 (1989)
167. C. Farhat, "Computational Strategies for FE Simulations on Supercomputers with 4 to 65,536 Processors," *Computer Utilization in Structural Engineering*, ed. J. K. Nelson, Jr., pp. 178-186 (1989)
168. C. Farhat, "Parallel Computational Strategies for Large Space and Aerospace Flexible Structures: Algorithms, Implementations and Performance," *Supercomputing in Engineering Structures*, ed. P. Melli and C. Brebbia, Computational Mechanics Publications, Springer-Verlag, pp. 109-133 (1989)
169. C. Farhat and L. Crivelli, "A General Approach to Nonlinear FE Computations on Shared Memory Multiprocessors," *Computer Methods in Applied Mechanics and Engineering*, Vol. 72, No. 2, pp. 153-172 (1989)
170. C. Farhat and L. Crivelli, "Large Scale FE Parallel Nonlinear Computations Using a Homotopy Method," *Parallel Processing for Scientific Computing*, ed. G. Rodrigue, SIAM, pp. 265-269 (1988)
171. E. Wilson and C. Farhat, "Linear and Nonlinear Finite Element Analyses on Multiprocessor Computer Systems," *Communications in Applied Numerical Methods*, Vol. 4, No. 3, pp. 425-434 (1988)
172. C. Farhat, "A Simple and Efficient Automatic FEM Domain Decomposer," *Computers & Structures*, Vol. 28, No. 5, pp. 579-602 (1988)
173. C. Farhat and E. Wilson, "A Parallel Active Column Equation Solver," *Computers & Structures*, Vol. 28, No. 2, pp. 289-304 (1988)
174. C. Farhat, C. Felippa and K. C. Park, "Implementation Aspects of Concurrent Finite Element Computations," *Parallel Computations and their Impact on Mechanics*, ed. A. K. Noor, ASME, New-York, pp. 301-316 (1987)
175. C. Farhat and E. Wilson, "A New Finite Element Concurrent Computer Program Architecture," *International Journal for Numerical Methods in Engineering*, Vol. 24, No. 9, pp. 1771-1792 (1987)
176. C. Farhat and E. Wilson, "Concurrent Iterative Solution of Large Finite Element Systems," *Communications in Applied Numerical Methods*, Vol. 3, No. 4, pp. 319-326 (1987)
177. C. Farhat, E. Wilson and G. Powell, "Solution of Finite Element Systems on Concurrent Processing Computers," *Engineering With Computers*, Vol. 2, No. 3, pp. 157-165 (1987)
178. C. Farhat and E. Wilson, "Modal Superposition Analysis on Concurrent Multiprocessors," *Engineering Computations*, Vol. 3, No. 4, pp. 305-311 (1986)
179. R. Melosh, R. Araya, C. Farhat, J. Garcelon, J. Mora, P. Seifert, N. Stander and J. Wallace, "Scelernomic Analysis of Structures Considering Connection Slip," *Finite Element in Analysis and Design*, Vol. 2, pp. 241-247 (1986)

### **Refereed Conference Proceedings**

1. P. Avery and C. Farhat, "Monotonically Convergent and Numerically Scalable FETI Methods for Contact Problems," (abstract), *Tenth US National Congress on Computational Mechanics*, Columbus, Ohio, July 15-19 (2009)

2. D. Powell, T. Zohdi and C. Farhat, "Multi-scale Modeling and Large-Scale Transient Simulation of Ballistic Fabric Undergoing Impact," (abstract), *Tenth US National Congress on Computational Mechanics*, Columbus, Ohio, July 15-19 (2009)
3. C. Farhat, J.-F. Gerbeau and K. Wang, "An Energy Conserving Method for Computing Flow-Induced Forces on Embedded Meshes," (abstract), *Tenth US National Congress on Computational Mechanics*, Columbus, Ohio, July 15-19 (2009)
4. I. Kalashnikova, C. Farhat and R. Tezaur, "Recent Extensions of the Discontinuous Enrichment Method (DEM) to Advection-Dominated Fluid Mechanics Problems," (abstract), *Tenth US National Congress on Computational Mechanics*, Columbus, Ohio, July 15-19 (2009)
5. P. Massimi, R. Tezaur and C. Farhat, "A Discontinuous Enrichment Method for the Solution of Plate Vibration Problems in the Medium Frequency Regime," (abstract), *Tenth US National Congress on Computational Mechanics*, Columbus, Ohio, July 15-19 (2009)
6. B. Danowsky, P. Thompson, C. Farhat, T. Lieu, C. Harris and J. Lechniak, "A Complete Aeroelastoviscoelastic Model: Incorporation of Oscillation-Reduction-Control into a High-Order CFD/FEM Fighter Aircraft Model," *AIAA Paper 2009-5708*, *AIAA Atmospheric Flight Mechanics Conference*, Chicago, Illinois, August 10-13 (2009)
7. J. Cortial and C. Farhat, "Squeezing the Most Out of Time-Parallelism for Accelerating the Solution of Time-Reversible ODEs," (abstract), *2009 SIAM Annual Meeting*, Denver, Colorado, July 6-10 (2008)
8. K. Carlberg and C. Farhat, "A Proper Orthogonal Decomposition-Based Augmented Conjugate Gradient Algorithm for Nearby Problems," (abstract), *2009 SIAM Annual Meeting*, Denver, Colorado, July 6-10 (2008)
9. D. Amsallem, J. Cortial and C. Farhat, "Fast CFD-Based Aeroelastic Predictions Using a Database of Reduced-Order Models," *Paper IFASD-2009-006*, *International Forum on Aeroelasticity and Structural Dynamics*, Seattle, Washington, June 22-25 (2009)
10. K. Carlberg and C. Farhat, "An Adaptive POD-Krylov Reduced-Order Model for Structural Optimization," in: *Proceedings 8th World Congress on Structural and Multidisciplinary Optimization*, Lisbon, Portugal, June 1-5 (2009)
11. J. F. Dord and C. Farhat, "A Hybrid Migration Method for Underwater Imaging," in: *Computational Methods in Marine Engineering III*, ed. T. Kvamsdal, B. Pettersen, P. Bergan, E. Onate and J. Garcia, CIMNE, Barcelona (2009)
12. J. F. Dord and C. Farhat, "A Hybrid Kirchhoff Migration-Direction of Arrival Method for Underwater Imaging of Complex Objects Using Sparse Sensor Arrays," *Acoustical Imaging*, Springer, Vol 30, pp. X-Y (2009)
13. C. Farhat, R. Tezaur and J. Toivanen, "A Domain Decomposition Method for Helmholtz Problems Discretized using the Discontinuous Enrichment Method," in: *Proceedings of Waves 2009 - The 9th International Conference on Mathematical and Numerical Aspects of Waves*, University of Pau, France, pp. 166-167 (2009)
14. D. Amsallem, T. Lieu and C. Farhat, "On-Demand CFD-Based Aeroelastic Predictions Using a Database of Reduced-Order Bases and Models," *AIAA Paper 2009-800*, *47th AIAA Aerospace Sciences Meeting and The New Horizons Forum and Aerospace Exposition*, Orlando, Florida, January 5-8 (2009)
15. D. Amsallem, K. Carlberg, J. Cortial and C. Farhat, "An On-Line Method for Interpolating Structural Dynamics Reduced-Order Models," *AIAA Paper 2009-2432*, *50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Palm Springs, California, May 4-7 (2009)
16. E. Chiu and C. Farhat, "Effects of Fuel Slosh on Flutter Prediction," *AIAA Paper AIAA-2009-2682*, *50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Palm Springs, California, May 4-7 (2009)
17. D. Powell, T. Zohdi and C. Farhat, "Multi-Scale Modeling and Large-Scale Transient Simulation of Ballistic Fabric," *26<sup>th</sup> Army Science Conference, Transformational Army Science & Technology - Harnessing Disruptive S&T for the Soldier*, Orlando, Florida, December 1-4 (2008)

18. C. Farhat and A. Rajasekharan, "A Computational Framework Based on the Variational LES Method for the Multidisciplinary Analysis of MAVs with Flapping Wings," *26<sup>th</sup> Army Science Conference, Transformational Army Science & Technology - Harnessing Disruptive S&T for the Soldier*, Orlando, Florida, December 1-4 (2008)
19. K. Carlberg and C. Farhat, "A Compact Proper Orthogonal Decomposition Basis for Optimization-Oriented Reduced-Order Models," *AIAA Paper 2008-5964, 12th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference*, Victoria, British Columbia, Canada, September 10-12 (2008)
20. B. Danowsky, J. Chrstos, D. Klyde, C. Farhat and M. Brenner, "Application of Multiple Methods for Aeroelastic Uncertainty Analysis," *AIAA Paper 2008-6371, AIAA Atmospheric Flight Mechanics Conference and Exhibit*, Honolulu, Hawaii, August 18-21 (2008)
21. B. Danowsky, P. M. Thompson and C. Farhat, "Residualization of an Aircraft Linear Aeroelastic Reduced Order Model to Obtain Static Stability Derivatives," *AIAA Paper 2008-6370, AIAA Atmospheric Flight Mechanics Conference and Exhibit*, Honolulu, Hawaii, August 18-21 (2008)
22. V. Sankaran, J. Sitaraman, B. Flynt and C. Farhat, "Development of a Coupled and Unified Solution Method for Fluid-Structure Interactions," (abstract), *Fifth International Conference on Computational Fluid Dynamics*, South Korea, July 8 (2008)
23. C. Farhat, "Reduced-Order Modeling, Differential Geometry and Physics-Based Near Real-Time Predictions," (abstract), *Eighth World Congress on Computational Mechanics (WCCM VIII)*, Venice, Italy, June 30-July 4 (2008)
24. D. Powell, T. Zohdi and C. Farhat, "Multi-Scale Construction and Large-Scale Simulation of Dynamically Loaded Structural Fabric," (abstract), *Eighth World Congress on Computational Mechanics (WCCM VIII)*, Venice, Italy, June 30-July 4 (2008)
25. D. Amsallem, C. Farhat, J. Cortial and K. Carlberg, "A Class of High-Order and Multivariate Interpolation Methods for Adapting Reduced-Order Models to Continuous Parameter Changes," (abstract), *Eighth World Congress on Computational Mechanics (WCCM VIII)*, Venice, Italy, June 30-July 4 (2008)
26. C. Farhat and D. Amsallem, "Recent Advances in Reduced-Order Modeling and Application to Nonlinear Computational Aeroelasticity," (Invited), *AIAA Paper 2008-562, 46th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 7-10 (2008)
27. P. M. Thompson, D. H. Klyde, C. Farhat and C. Harris, "Aeroservoelastic Predictive Analysis Capability," *AIAA Paper 2007-6716, Atmospheric Flight Mechanics Conference*, Hilton Head, South Carolina, August 20-23 (2007)
28. C. Farhat, R. Tezaur and J. Toivanen, "A Domain Decomposition Method for a Class of Discontinuous Galerkin Discretizations of Helmholtz Problems," in: *Proceedings of Waves 2007 - The 8th International Conference on Mathematical and Numerical Aspects of Waves*, University of Reading, U.K., pp. 370-372 (2007)
29. A. Rallu and C. Farhat, "A Higher-Order Generalized Ghost Fluid Method for the Poor for Two-Phase Flow Computation of Underwater Explosion and Implosion," (abstract), *Ninth US National Congress on Computational Mechanics*, San Francisco, California, July 22-26 (2007)
30. C. Farhat and Thuan Lieu, "A Discussion of Recent Trends and Claims Pertaining to the Staggered Solution of FSI Problems," (abstract), *Ninth US National Congress on Computational Mechanics*, San Francisco, California, July 22-26 (2007)
31. D. Amsallem and C. Farhat, "High-Order Interpolation of Reduced-Order Models for Near Real-Time Aeroelastic Prediction," (abstract), *Ninth US National Congress on Computational Mechanics*, San Francisco, California, July 22-26 (2007)
32. P. Massimi, C. Farhat and R. Tezaur, "A Three-Dimensional Multiscale Discontinuous Method for Evanescent Waves in Fluid/Fluid and Fluid/Solid Problems," (abstract), *Ninth US National Congress on Computational Mechanics*, San Francisco, California, July 22-26 (2007)
33. A. Rajasekharan and C. Farhat, "Design and Analysis of Higher-Order Explicit Time-Integrators for CFD Computations on Moving Grids," (abstract), *Ninth US National Congress on Computational Mechanics*, San Francisco, California, July 22-26 (2007)

34. D. Ghosh, P. Avery and C. Farhat, "Uncertainty Quantification of Large-Scale Systems Using Domain Decomposition," (abstract), *Ninth US National Congress on Computational Mechanics*, San Francisco, California, July 22-26 (2007)
35. S. Petersen, C. Farhat and R. Tezaur, "A Space/Time Discontinuous Galerkin Method for the Solution of the Wave Equation in the Time-Domain," (abstract), *Ninth US National Congress on Computational Mechanics*, San Francisco, California, July 22-26 (2007)
36. R. Tezaur, C. Farhat and J. Toivanen, "A Domain Decomposition Method for a Class of Discontinuous Galerkin Discretizations of Helmholtz Problems," (abstract), *Ninth US National Congress on Computational Mechanics*, San Francisco, California, July 22-26 (2007)
37. D. Amsallem, C. Farhat and T. Lieu, "High-Order Interpolation of Reduced-Order Models for Near Real-Time Aeroelastic Prediction," *Paper IF-081, International Forum on Aeroelasticity and Structural Dynamics*, Stockholm, Sweden, June 18-20 (2007)
38. D. Amsallem, C. Farhat and T. Lieu, "Aeroelastic Analysis of F-16 and F-18/A Configurations Using Adapted CFD-Based Reduced-Order Models," *AIAA Paper 2007-2364, 48th Structures, Structural Dynamics, and Materials Conference*, Honolulu, Hawaii, April 23-26 (2007)
39. C. Farhat, T. Lieu and V. Kongara, "A Discussion of Key Concepts and Methodologies for the CFD-Based Solution of a Class of Nonlinear Fluid/Structure and Thermofluid/Thermostructure Problems," in: *Proceedings of the International Conference on Computational Methods for Coupled Problems in Science and Engineering*, ed. E. Onate, M. Papadarakakis and B. Schrefler, CIMNE, Barcelona (2007)
40. A. Rajasekharan, C. Farhat and C. Bou-Mosleh, "Application of a Dynamic Variational Multiscale Method to the LES of Separated Turbulent Flows," *AIAA Paper 2007-0726, 45th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 8-11 (2007)
41. T. Lieu and C. Farhat, "Aerodynamic Parameter Adaptation of CFD- Based Reduced- Order Models," *AIAA Paper 2007-0328, 45th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 8-11 (2007)
42. J. G. Michopoulos, C. Farhat and C. Bou-Mosleh, "On Data-Driven Modeling and Simulation of Aero-Thermo-Mechanically Degrading Nonlinear Continuum Systems," *Proceedings of the ASME 2006 Design Engineering Technical Conferences and Computers and Information in Engineering Conference*, Philadelphia, PA, September 10-13 (2006)
43. C. Farhat, "The Discontinuous Enrichment Method for Multiscale and Higher-Frequency Wave Propagation Problems," (abstract), *Seventh World Congress on Computational Mechanics (WCCM VII)*, Los Angeles, California, July 16-22 (2006)
44. C. Farhat and A. Rajasekharan, "A Dynamic Variational Multiscale Method for Large Eddy Simulations on Unstructured Moving Grids: Application to Wall-Bounded Flows, External Separated Flows, and Dynamic Stall of Oscillating Wings," (abstract), *Seventh World Congress on Computational Mechanics (WCCM VII)*, Los Angeles, California, July 16-22 (2006)
45. T. Lieu and C. Farhat, "Adaptation of POD-Based ROMS to Varying Mach Number and Angle of Attack for the Aeroelastic Analysis of a Complete F-16 Configuration," (abstract), *Seventh World Congress on Computational Mechanics (WCCM VII)*, Los Angeles, California, July 16-22 (2006)
46. J. F. Dord, C. Farhat and G. Papanicolaou, "Travel Time-Based Inverse Solution Methods for the Detection of Underwater Intruders," (abstract), *Seventh World Congress on Computational Mechanics (WCCM VII)*, Los Angeles, California, July 16-22 (2006)
47. J. G. Michopoulos and C. Farhat, "Towards Data-Driven Modeling and Simulation of Multiphysics Degrading Systems," *Proceedings of the 16th European Conference on Fracture (ECF16)*, ed. E. E. Gdoutos, Springer, Alexandroupolis, Greece, July 3-8 (2006)
48. C. Farhat, T. Lieu and C. Harris, "Adapted POD-based Aeroelastic ROMs for Near Real-Time Flutter Analysis of Complete Fighter Configurations," *AFR/AFSEO/IHAA Workshop on Aircraft-Stores Clearance and Related Aeroelastic Phenomena, Book of Synopses*, Fountain Hills, Arizona, May 16-17 (2006)

49. J. Cortial, H. Bavestrello, C. Dastillung and C. Farhat, "A Stable Time-Parallel and Coarseless Implicit Algorithm for Second-Order Hyperbolic Problems," (abstract), *SIAM Conference on Parallel Processing for Scientific Computing*, San Francisco, February 22-24 (2006)
50. P. Avery and C. Farhat, "The Impact of Two-Level FETI-DPH Iterative Solver on the Performance of the Inverse Shifted Lanczos Method," (abstract), *SIAM Conference on Parallel Processing for Scientific Computing*, San Francisco, February 22-24 (2006)
51. T. Lieu and C. Farhat, "Adaptation of POD-based Aeroelastic ROMs for Varying Mach Number and Angle of Attack: Application to a Complete F-16 Configuration," *AIAA Paper 2005-7666*, *U.S. Air Force T&E Days*, Nashville, Tennessee, December 6-8 (2005)
52. C. Farhat, J. Cortial, H. Bavestrello and C. Dastillung, "A Time-Decomposed Parallel Implicit Algorithm for Accelerating the Solution of Second-Order Hyperbolic Problems," (abstract), *Eighth U.S. National Congress on Computational Mechanics*, Austin, Texas, July 24-28 (2005)
53. P. Avery and C. Farhat, "Domain-Decomposition-Based Computational Algorithms for Fast Frequency Response Function Computations," (abstract), *Eighth U.S. National Congress on Computational Mechanics*, Austin, Texas, July 24-28 (2005)
54. C. Farhat and R. Tezaur, "Three-Dimensional Short Wave Acoustic Scattering Computations Using a Discontinuous Galerkin Method with Plane Waves and Lagrange Multipliers," (abstract), *Eighth U.S. National Congress on Computational Mechanics*, Austin, Texas, July 24-28 (2005)
55. C. Farhat and Bjarte Haegland, "On the Numerical Stability of a Class of Loosely-Coupled, Higher-Order Fluid/Structure Solution Algorithms", (abstract), *Fifth International Conference on Computation of Shell and Spatial Structures*, Salzburg, Austria, June 1-4 (2005)
56. T. Lieu, C. Farhat and M. Lesoinne, "POD-based Aeroelastic Analysis of a Complete F-16 Configuration: ROM Adaptation and Demonstration," *AIAA Paper 2005-2295*, *46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference*, Austin, Texas, April 18-21 (2005)
57. C. Farhat and G. Reese, "Computational Algorithms for Fast Frequency Response Function Computations," (abstract), *Fifth SIAM Conference on Computational Science and Engineering Conference*, Orlando, Florida, February 11-15 (2005)
58. J. Cortial and C. Farhat, "A Time-Domain-Decomposed Implicit Methodology for the Time-Parallel Solution of Second-Order Hyperbolic Problems," (abstract), *Sixteenth International Conference on Domain Decomposition Methods*, New York, January 12-14 (2005)
59. H. Bavestrello, P. Avery, C. Farhat and M. Lesoinne, "On Two Extensions of the FETI-DP Method for Constrained Linear Systems," (abstract), *Sixteenth International Conference on Domain Decomposition Methods*, New York, January 12-14 (2005)
60. J. G. Michopoulos, C. Farhat and E. N. Houstis, "Real-Time Data-Driven Simulation of Continuum Systems," *Proceedings of the ASME 2004 Design Engineering Technical Conferences and Computers and Information in Engineering Conference*, Salt Lake City, Utah, September 28 - October 2 (2004)
61. C. Farhat, L. Franca and I. Harari, "The Discontinuous Enrichment Method for Multiscale Analysis," *Proceedings of the Sixth World Congress on Computational Mechanics (WCCM VI)*, Beijing, China, September 5-10 (2004)
62. C. Farhat, L. Franca and I. Harari, "The Discontinuous Enrichment Method for Multiscale Analysis," *Proceedings of the 2004 European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS)*, ed. P. Neittaanmaki, T. Rossi, K. Majava, O. Pironneau, Jyvaskyla, Finland, July 24-28 (2004)
63. C. Farhat, G. van der Zee and P. Geuzaine, "Second-Order Time-Accurate Loosely-Coupled Solution Algorithms for Nonlinear FSI Problems," *Proceedings of the 2004 European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS)*, ed. P. Neittaanmaki, T. Rossi, K. Majava, O. Pironneau, Jyvaskyla, Finland, July 24-28 (2004)
64. J. Michopoulos, C. Farhat, E. Houstis, "Dynamic-Data-Driven Real-Time Computational Mechanics Environment," *Proceedings, International Conference Computational Science - ICCS 2004 4th*, Krakow,

- Poland, June 6-9, 2004, *Lecture Notes in Computational Science and Engineering*, Vol. 3038 - ICCS 2004, ed. M. Bubak, G. D. v. Albada, P. M. A. Sloot and J. Dongarra, pp. 693-700 (2004)
65. C. Bou-Mosleh, C. Farhat and K. Maute, "A Stress-Control-Based Live-Fire Ground Testing Methodology," *AIAA Paper 2004-1540, 45th AIAA/ASME/ASCE/AHS/ASC Structural Dynamics and Materials Conference*, Palm Springs, California, April 19-22 (2004)
  66. G. Rebel, C. Farhat, M. Lesoinne and P. Avery, "A Scalable Dual-Primal Domain Decomposition Method for the Solution of Contact Problems with Friction," (abstract), *Seventh U.S. National Congress on Computational Mechanics*, Albuquerque, New Mexico, July 27-31 (2003)
  67. C. Farhat, K. van der Zee and P. Geuzaine, "A Provably Second-Order Time-Accurate, Staggered, and Yet Subiteration-Free Algorithm for Transient Nonlinear Fluid-Structure Interaction Problems," (abstract), *Seventh U.S. National Congress on Computational Mechanics*, Albuquerque, New Mexico, July 27-31 (2003)
  68. J. Michopoulos, P. Tsompanopoulou, E. Houstis, M. Lesoinne, F. Lechenault, C. Farhat and J. Rice, "Data Driven Aspects of an Architecture for a Multiphysics Applications Environment," (abstract), *Seventh U.S. National Congress on Computational Mechanics*, Albuquerque, New Mexico, July 27-31 (2003)
  69. C. Farhat and P. Wiedemann-Goiran, "A High-Order Discontinuous Galerkin Method with Plane Waves and Lagrange Multipliers for the Solution of Short Wave Acoustic Scattering Problems," (abstract), *Seventh U.S. National Congress on Computational Mechanics*, Albuquerque, New Mexico, July 27-31 (2003)
  70. J. Michopoulos, M. Lesoinne, F. Lechenault, P. Tsompanopoulou, E. Houstis and C. Farhat, "A Symbolic Computational Framework Architecture for Automating Constitutive Modeling Encapsulation," (abstract), *Seventh U.S. National Congress on Computational Mechanics*, Albuquerque, New Mexico, July 27-31 (2003)
  71. P. Geuzaine and C. Farhat, "Design and Time-Accuracy Analysis of ALE Schemes for Inviscid and Viscous Flow Computations on Moving Meshes," *AIAA Paper 2003-3694, 21st Applied Aerodynamics Conference*, Orlando, Florida, June 23-26 (2003)
  72. J. Michopoulos, P. Tsompanopoulou, E. Houstis, J. Rice, C. Farhat, M. Lesoinne and F. Lechenault, "Design Architecture of a Data Driven Environment for Multiphysics Applications," Paper No DETC2003/CIE-48268, *Proceedings of the ASME 2003 Design Engineering Technical Conferences and Computers and Information in Engineering Conference*, Chicago, Illinois, September 2-6 (2003)
  73. M. Bhardwaj, K. Pierson, G. Reese, T. Walsh, D. Day, K. Alvin, J. Peery, C. Farhat and M. Lesoinne, "Salinas: A Scalable Software for High-Performance Structural and Solid Mechanics Simulations," *Proceedings of the IEEE/ACM SC2002 Conference*, Baltimore, Maryland, November 16-22 (2002)
  74. B. Argrow, C. Farhat, K. Maute and M. Nikbay, "Linear-Theory-Based Shape Optimization for Sonic Boom Minimization," *Proceedings of the IUTAM Symposium Transsonicum IV*, Goettingen, Germany, September 1-3 (2002)
  75. C. Farhat, "MDA/MDO: Non-Technical Barriers and Challenges," *AIAA Paper 2002-5440, 9th AIAA/ISSMO Symposium on Multidisciplinary and Optimization*, Atlanta, Georgia, September 4-6 (2002)
  76. C. Farhat, B. Argrow, M. Nikbay and K. Maute, "A Shape Optimization Methodology with F-function load balancing for Mitigating the Sonic Boom," *AIAA Paper 2002-5551, 9th AIAA/ISSMO Symposium on Multidisciplinary and Optimization*, Atlanta, Georgia, September 4-6 (2002)
  77. C. Farhat, R. Tezaur and R. Djellouli, "An Iterative Method for the Solution of Three-Dimensional Inverse Acoustic Scattering Problems," ASME Paper IMECE2002/NCA-32712, *Proceedings of the 2002 ASME International Mechanical Engineering Congress and Exposition*, Louisiana, November 17-22 (2002)
  78. C. Farhat and B. Koobus, "Finite Volume Discretization on Unstructured Meshes of the Multiscale Formulation of Large Eddy Simulations," *Proceedings of the Fifth World Congress on Computational Mechanics (WCCM V)*, ed. H. A. Mang, F. G. Rammerstorfer, J. Eberhardsteiner, Vienna University of Technology, Austria, July 7-12 (2002)

79. R. Tezaur, C. Farhat and J. Mandel, "Scalability of the Generalized FETI-H Method for Coupled Elasto-Acoustic Scattering Problems," *Proceedings of the Fifth World Congress on Computational Mechanics (WCCM V)*, ed. H. A. Mang, F. G. Rammerstorfer, J. Eberhardsteiner, Vienna University of Technology, Austria, July 7-12 (2002)
80. K. F. Traore, C. Farhat, M. Lesoinne and D. Dureisseix, "A Domain Decomposition Method with Lagrange Multipliers for the Massively Parallel Solution of Large-Scale Contact Problems," *Proceedings of the Fifth World Congress on Computational Mechanics (WCCM V)*, ed. H. A. Mang, F. G. Rammerstorfer, J. Eberhardsteiner, Vienna University of Technology, Austria, July 7-12 (2002)
81. P. Geuzaine and C. Farhat, "Three-Field-Based Nonlinear Solution Strategy for Aeroelastic Problems," *Proceedings of the Fifth World Congress on Computational Mechanics (WCCM V)*, ed. H. A. Mang, F. G. Rammerstorfer, J. Eberhardsteiner, Vienna University of Technology, Austria, July 7-12 (2002)
82. C. Farhat, U. Hetmaniuk and I. Harari, "A Discontinuous Galerkin Method with Analytical Shape Functions for Helmholtz Problems in the Medium Range Frequency Regime," *Proceedings of the Fifth World Congress on Computational Mechanics (WCCM V)*, ed. H. A. Mang, F. G. Rammerstorfer, J. Eberhardsteiner, Vienna University of Technology, Austria, July 7-12 (2002)
83. C. Farhat, "Large-Scale Nonlinear Aeroelastic Computations: Flutter, LCO and Buffet Investigations," *Proceedings of the Fifth World Congress on Computational Mechanics (WCCM V)*, ed. H. A. Mang, F. G. Rammerstorfer, J. Eberhardsteiner, Vienna University of Technology, Austria, July 7-12 (2002)
84. H. Tran and C. Farhat, "An Integrated Platform for the Simulation of Fluid-Structure-Thermal Interaction Problems," *AIAA Paper 2002-1307, 43rd AIAA/ASME/ASCE/AHS/ASC Structural Dynamics and Materials Conference*, Denver, Colorado, April 22-25 (2002)
85. K. Maute, M. Nikbay and C. Farhat, "Conceptual Layout of Aeroelastic Wing Structures by Topology Optimization," *AIAA Paper 2002-1480, 43rd AIAA/ASME/ASCE/AHS/ASC Structural Dynamics and Materials Conference*, Denver, Colorado, April 22-25 (2002)
86. C. Farhat, P. Geuzaine, G. Brown and C. Harris, "Nonlinear Flutter Analysis of an F-16 in Stabilized, Accelerated, and Increased Angle of Attack Configurations," *AIAA Paper 2002-1490, 43rd AIAA/ASME/ASCE/AHS/ASC Structural Dynamics and Materials Conference*, Denver, Colorado, April 22-25 (2002)
87. C. Farhat, R. Tezaur and R. Djellouli, "On the solution of three-dimensional inverse obstacle acoustic scattering problems by a regularized Newton method," *Proceedings of the Second Conference on Inverse Problems, Control, and Shape Optimization*, ed. T. Ha Duong, J. Joffre and M. Jaoua, pp. 105-110 (2002)
88. J. Michopoulos, P. Mast, R. Badaliance, T. Chwastyk, L. Gause and C. Farhat, "Material Softening Issues in a Multiphysics Virtual Wind Tunnel Environment," *AIAA Paper 2002-1095, 40th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 14-17 (2002)
89. C. Farhat, K. Maute, B. Argrow and M. Nikbay, "A Shape Optimization Methodology for Reducing the Sonic Boom Initial Pressure Rise," *AIAA Paper 2002-0145, 40th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 14-17 (2002)
90. P. Geuzaine, G. Brown and C. Farhat, "Three-Field Based Nonlinear Aeroelastic Simulation Technology: Status and Application to the Flutter Analysis of an F-16 Configuration," *AIAA Paper 2002-0870, 40th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 14-17 (2002)
91. M. Lesoinne and C. Farhat, "A Scalable Dual-Primal Domain Decomposition Method," (abstract), *Sixth U.S. National Congress on Computational Mechanics*, Dearborn, Michigan, August 1-3 (2001)
92. C. Farhat, R. Tezaur and R. Djellouli, "On the Solution of Three-Dimensional Inverse Acoustic Scattering Problems," *Sixth U.S. National Congress on Computational Mechanics*, Dearborn, Michigan, August 1-3 (2001)
93. C. Farhat and I. Harari, "The Discontinuous Enrichment Method for Wave Propagation," *Sixth U.S. National Congress on Computational Mechanics*, Dearborn, Michigan, August 1-3 (2001)

94. CMS Group, C. Farhat and M. Lesoinne, "Coupled Multiphysics Simulation of Composite Material Softening in a Virtual Wind Tunnel Environment," *Sixth U.S. National Congress on Computational Mechanics*, Dearborn, Michigan, August 1-3 (2001)
95. K. Maute, M. Nikbay and C. Farhat, "High-Performance Computing for the Optimization of Aeroelastic Systems," *Proceedings of the First MIT Conference on Computational Fluid and Solid Mechanics*, MIT, Cambridge, June 11-15 (2001)
96. C. Farhat, U. Hetmaniuk, "A Helmholtz Solver for Partially Axisymmetric Sound-Soft Scatterers," *Proceedings of the European Conference on Computational Mechanics (ECCM) 2001*, Cracow, Poland, June 26-29 (2001)
97. S. Piperno and C. Farhat, "Design of Efficient Partitioned Procedures for Transient Nonlinear Aeroelastic Problems Based on Energy Exchange Criteria," *Proceedings of the European Conference on Computational Mechanics (ECCM) 2001*, Cracow, Poland, June 26-29 (2001)
98. K. Maute, M. Nikbay and C. Farhat, "Large-Scale Optimization of Aeroelastic Systems," in: *Proceedings of the International Conference on Trends in Computational Mechanics*, ed. W. A. Wall, K. U. Bletzinger and K. Schweizerhof, CIMNE, pp. 613-622 (2001)
99. C. Farhat, P. Geuzaine and C. Grandmont, "The Discrete Geometric Conservation Law and its Effects on Nonlinear Stability and Accuracy," *AIAA Paper 2001-2607, 15th AIAA Computational Fluid Dynamics Conference*, Anaheim, California, June 11-14 (2001)
100. U. Hetmaniuk and C. Farhat, "A Fictitious Domain Decomposition Method for High-Frequency Acoustic Scattering Problems," in: *Domain Decomposition Methods in Sciences and Engineering*, ed. T. Chan, T. Kako, H. Kawarada and O. Pironneau, Domain Decomposition Press, Bergen, pp. 365-372 (2001)
101. C. Farhat, I. Harari and L. P. Franca, "A Discontinuous Finite Element Method for the Helmholtz Equation," *Proceedings of the European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS) 2000*, Barcelona, Spain, September 11-14 (2000)
102. C. Farhat, K. Pierson and C. Degand, "A CFD Based Simulation of the Unsteady Aeroelastic Response of a Maneuvering Vehicle," *Proceedings of the European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS) 2000*, Barcelona, Spain, September 11-14 (2000)
103. K. Maute, M. Nikbay and C. Farhat, "Analytically Based Sensitivity Analysis and Optimization of Nonlinear Aeroelastic Systems," *AIAA Paper 2000-4825, 8th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization*, Long Beach, CA, September 6-8 (2000)
104. N. Gmati, C. Farhat and U. Hetmaniuk, "An Efficient Substructuring Method for Analyzing Acoustics in a Cocentric Hole-Cavity Resonator," in: *Mathematical and Numerical Aspects of Wave Propagation*, ed. A. Bermudez et. al., SIAM, pp. 817-821 (2000)
105. R. Djellouli, C. Farhat, A. Macedo and R. Tezaur, "Finite Element Solution of Three-Dimensional Acoustic Scattering Problems Using Arbitrarily Shaped Convex Artificial Boundaries," in: *Mathematical and Numerical Aspects of Wave Propagation*, ed. A. Bermudez et. al., SIAM, pp. 896-900 (2000)
106. C. Farhat, I. Harari and L. P. Franca, "A Discontinuous Galerkin-PW Method for the Solution of the High-Frequency Acoustic Scattering Problems," *Proceedings of the Seventh International Congress on Sound and Vibration*, Garmisch-Partenkirchen, Germany, July 4-7 (2000)
107. D. Dureisseix and C. Farhat, "A FETI Based Algorithm for the Iterative Solution of Unilateral Contact Problems," *Proceedings of the Fourth European Solid Mechanics Conference (EUROMECH)*, Metz, France, June 26-30 (2000)
108. C. Farhat, I. Harari and L. P. Franca, "Improved Finite Element Computation of Time-Harmonic Acoustics by Discontinuous Plane-Wave Enrichment," *Proceedings of the Fourteenth Engineering Mechanics Conference (EM) 2000*, Austin, Texas, May 21-24 (2000)
109. C. Farhat, M. Lesoinne and K. Pierson, "A Scalable Substructuring Method for Static, Transient, and Vibration Analyses on Massively Parallel Processors," *AIAA Paper 2000-1576, 41st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Atlanta, GA, April 3-6 (2000)

110. C. Farhat, C. Harris and D. Rixen, "Expanding a Flutter Envelope Using Accelerated Flight Data: Application to an F-16 Fighter Configuration," *AIAA Paper 2000-1702, 41st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Atlanta, GA, April 3-6 (2000)
111. S. Piperno and C. Farhat, "Energy Based Design and Analysis of Staggered Solvers for Nonlinear Transient Aeroelastic Problems," *AIAA Paper 2000-1447, 41st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Atlanta, GA, April 3-6 (2000)
112. K. Maute, M. Lesoinne and C. Farhat, "Optimization of Aeroelastic Systems using Coupled Analytical Sensitivities," *AIAA Paper 2000-0560, 38th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 10-13 (2000)
113. C. Farhat, K. Pierson and C. Degand, "CFD Based Simulation of the Unsteady Aeroelastic Response of a Maneuvering Vehicle," *AIAA Paper 2000-0899, 38th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 10-13 (2000)
114. C. Farhat, A. Macedo and R. Tezaur, "FETI-H: a scalable domain decomposition method for high frequency exterior Helmholtz problems," in: *Domain Decomposition Methods in Sciences and Engineering*, ed. C. J. Lai, P. Bjorstad, M. Cross and O. Widlund, Domain Decomposition Press, Bergen, pp. 228-238 (1999)
115. A. Macedo, R. Djellouli, C. Farhat and R. Tezaur, "Finite Element Solution of Two-Dimensional Acoustic Scattering Problems Using Arbitrarily Shaped Convex Artificial Boundaries," *Proceedings of the XX CILAMCE - 20th Iberian Latin-American Congress on Computational Methods in Engineering*, ed. P. M. Pimenta, R. M. L. R. F. Brasil and E. S. Almeida N., Polytechnic School of the University of Sao Paulo, Brazil, pp. 284.1-284.20 (1999)
116. S. Piperno and C. Farhat, "An Energy Transfer Criterion for Assessing Partitioned Procedures Applied to the Solution of Nonlinear Transient Aeroelastic Problems," (abstract), *Fifth U.S. National Congress on Computational Mechanics*, Boulder, Colorado, August 4-6 (1999)
117. E. Schall, B. Koobus and C. Farhat, "Investigation of the Aeroelastic Coupling Between A Nozzle and a Supersonic Jet," (abstract), *Fifth U.S. National Congress on Computational Mechanics*, Boulder, Colorado, August 4-6 (1999)
118. D. Rixen and C. Farhat, "A Computational Methodology for the Simulation of Flow Problems Past Accelerating Rigid and Flexible Obstacles," (abstract), *Fifth U.S. National Congress on Computational Mechanics*, Boulder, Colorado, August 4-6 (1999)
119. R. Tezaur, A. Puppini-Macedo and C. Farhat, "A Computational Methodology for the Simulation of Flow Problems Past Accelerating Rigid and Flexible Obstacles," (abstract), *Fifth U.S. National Congress on Computational Mechanics*, Boulder, Colorado, August 4-6 (1999)
120. D. Dureisseix and C. Farhat, "A FETI-Based Algorithm for the Iterative Solution of Unilateral Contact Problems," (abstract), *Fifth U.S. National Congress on Computational Mechanics*, Boulder, Colorado, August 4-6 (1999)
121. C. Farhat, U. Hetmaniuk and D. Rixen, "An Efficient Substructuring Method for Analyzing Structures with Major Axisymmetric Components," *AIAA Paper 99-1283, 40th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, St Louis, MO, April 12-15 (1999)
122. D. Rixen, C. Farhat and L. D. Peterson, "Simulation of the Continuous Parametric Identification of an Accelerating Aeroelastic System," *AIAA Paper 99-0797, 37th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 11-14 (1999)
123. H. Guillard and C. Farhat, "On the Significance of the GCL for Flow Computations on Moving Meshes," *AIAA Paper 99-0793, 37th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 11-14 (1999)
124. X.-C. Cai, C. Farhat and M. Sarkis, "Variable Degree Schwarz Methods for Unsteady Compressible Flows," in: *Domain Decomposition Methods for Partial Differential Equations*, ed. P. Bjorstad, M. Espedal and D. Keyes, Domain Decomposition Press, Bergen, pp. 682-689 (1998)
125. C. Farhat and J. Mandel, "Scalable Substructuring by Lagrange Multipliers in Theory and in Practice," in: *Domain Decomposition Methods for Partial Differential Equations*, ed. P. Bjorstad, M. Espedal and D. Keyes, Domain Decomposition Press, Bergen, pp. 20-30 (1998)

126. D. Rixen and C. Farhat, "Preconditioning the FETI and Balancing Domain Decomposition Methods for Problems with Intra- and Inter-subdomain Coefficient Jumps," in: *Domain Decomposition Methods for Partial Differential Equations*, ed. P. Bjorstad, M. Espedal and D. Keyes, Domain Decomposition Press, Bergen, pp. 472-479 (1998)
127. F. X. Roux and C. Farhat, "Parallel Implementation of the Two-Level FETI Method," in: *Domain Decomposition Methods for Partial Differential Equations*, ed. P. Bjorstad, M. Espedal and D. Keyes, Domain Decomposition Press, Bergen, pp. 480-487 (1998)
128. M. Lesoinne and C. Farhat, "Re-engineering of an Aeroelastic Code for Solving Eigen Problems in All Flight Regimes", ed. K. D. Papailiou, D. Tsahalis, J. P eriaux, C. Hirsch and M. Pandolfi, Computational Fluid Dynamics' 98, *Proceedings of the Fourth European Computational Fluid Dynamics Conference*, Athens, Greece, pp. 1052-1061 (1998)
129. R. Djellouli and C. Farhat, "Sensitivity Analysis of Direct Acoustic Scattering Problems with Respect to Shape, Frequency and Incident Direction," in: *Mathematical and Numerical Aspects of Wave Propagation*, ed. J. DeSanto, SIAM, pp. 496-498 (1998)
130. C. Farhat and M. Lesoinne, "Enhanced Partitioned Procedures for Solving Nonlinear Transient Aeroelastic Problems," *AIAA Paper 98-1806, 39th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Long Beach, California, April 20-23 (1998)
131. C. Farhat, C. Degand, B. Koobus and M. Lesoinne, "An Improved Method of Spring Analogy for Dynamic Unstructured Fluid Meshes," *AIAA Paper 98-2070, 39th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Long Beach, California, April 20-23 (1998)
132. G. Brown, R. Djellouli, C. Farhat and F. Hemez, "Evaluating the Effect of Limited Instrumentation on the Updating of Finite Element Models," *AIAA Paper 98-1792, 39th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Long Beach, California, April 20-23 (1998)
133. C. Farhat and M. Lesoinne, "Higher-Order Staggered and Subiteration Free Algorithm for Coupled Dynamic Aeroelasticity Problems," *AIAA Paper 98-0516, 36th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 12-15 (1998)
134. H. Tran, B. Koobus and C. Farhat, "Numerical Solution of Vortex Dominated Flow Problems with Moving Grids," *AIAA Paper 98-0766, 36th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 12-15 (1998)
135. C. Farhat and M. Lesoinne, "A Conservative Algorithm for Exchanging Aerodynamic and Elastodynamic Data in Aeroelastic Systems," *AIAA Paper 98-0515, 36th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 12-15 (1998)
136. B. Koobus and C. Farhat, "Second-Order Implicit Schemes that Satisfy the GCL for Flow Computations on Dynamic Grids," *AIAA Paper 98-0113, 36th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 12-15 (1998)
137. M. Lesoinne and C. Farhat, "Re-engineering of an Aeroelastic Code for Solving Eigen Problems in all Flight Regimes," *Fluid-Structure Interactions, Aeroelasticity, Flow-Induced Vibration and Noise*, ed. P. P. Freidmann and M. P. Paidoussis, ASME, AD-Vol. 53-3, pp. 205-215 (1997)
138. C. Farhat, "High Performance Computational Nonlinear Aeroelasticity," (abstract), *Fourth U.S. National Congress on Computational Mechanics*, San Francisco, California, August 6-8 (1997)
139. C. Farhat, M. Lesoinne and P. LeTallec, "An Energy Conserving Load and Motion Transfer Algorithm for Fluid-Structure Interaction Problems with Non-Matching Discrete Interfaces," (abstract), *Fourth U.S. National Congress on Computational Mechanics*, San Francisco, California, August 6-8 (1997)
140. C. Degand, C. Farhat, B. Koobus and M. Lesoinne, "Torsional Springs for Two-Dimensional Dynamic Unstructured Fluid Meshes," (abstract), *Fourth U.S. National Congress on Computational Mechanics*, San Francisco, California, August 6-8 (1997)
141. E. Decaux, J. Duysens, C. Farhat and F. Hemez, "Solving Inverse Mechanical Problems: A Challenge for Classical Structural Automotive Applications," (abstract), *Fourth U.S. National Congress on Computational Mechanics*, San Francisco, California, August 6-8 (1997)

142. S. Piperno and C. Farhat, "Design and Analysis of Staggered Fluid-Structure Time Integrators for Interface Momentum and Energy Conservation," (abstract), *Fourth U.S. National Congress on Computational Mechanics*, San Francisco, California, August 6-8 (1997)
143. C. Farhat, P. S. Chen, F. Risler and F. X. Roux, "A Simple and Unified Framework for Accelerating the Convergence of Iterative Substructuring Methods with Lagrange Multipliers," (abstract), *Fourth U.S. National Congress on Computational Mechanics*, San Francisco, California, August 6-8 (1997)
144. C. Farhat, "A Domain Decomposition Method for Helmholtz Problems," (abstract), *Fourth U.S. National Congress on Computational Mechanics*, San Francisco, California, August 6-8 (1997)
145. G. Brown, C. Farhat, F. Hemez, J. Duysens and E. Decaux, "Overcoming Difficulties in the Updating of FE Models for Industrial Applications," *AIAA Paper 97-1033, 38th AIAA/ ASME/ ASCE/ AHS/ ASC Structures, Structural Dynamics and Material Conference and AIAA/ ASME/ AHS Adaptive Structures Forum*, Kissimmee, Florida, April 9-10 (1997)
146. X.-C. Cai, C. Farhat and M. Sarkis, "Schwarz Methods for the Unsteady Compressible Navier-Stokes Equations on Unstructured Meshes," in: *Domain Decomposition Methods in Sciences and Engineering*, R. Glowinski, ed. J. Périaux, Z. Shi and O. Widlund, John Wiley & Sons, Ltd., pp. 453-460 (1997)
147. M. Lesoinne and C. Farhat, "A Numerical Method for Solving Aeroelastic Eigenproblems in all Flight Regimes," *AIAA Paper 97-0647, 35th Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 6-9 (1997)
148. U. A. Gumaste, C. A. Felippa and C. Farhat, "Massively Parallel Three-Dimensional Aeroelastic Analysis of Jet Engines," *Proceedings of the 1996 Computational Aerosciences (CAS) Workshop*, NASA Ames Research Center, California, August 13-15, pp. 114-115 (1996)
149. M. Lesoinne and C. Farhat, "A General and Efficient Methodology for Computing the Aeroelastic Mode Shapes of an Airframe System," *Proceedings of the 1996 Computational Aerosciences (CAS) Workshop*, NASA Ames Research Center, California, August 13-15, pp. 82-83 (1996)
150. B. Koobus and C. Farhat, "Time-Accurate Schemes for Computing Two- and Three-Dimensional Viscous Fluxes on Unstructured Dynamic Meshes," *AIAA Paper 96-2384, 14th AIAA Applied Aerodynamics Conference*, New Orleans, Louisiana, June 18-20 (1996)
151. C. Farhat, B. Koobus and M. Lesoinne, "A High Fidelity and High Performance Computational Methodology for the Solution of Viscous Aeroelastic Response Problems," *Proceedings of the First AFOSR Conference on Dynamic Motion CFD*, Rutgers, June 3-5, pp. 159-187 (1996)
152. C. Farhat and P.S. Chen, "High Performance Substructure-Based Scalable Algorithms for Implicit Non-linear Shell Dynamics Computations," *Proceedings Workshop on Recent Advances in Computational Structural Dynamics and High Performance Computing*, USAE Waterways Experiment Station, Vicksburg, MS, April 24-26, pp. 3-9 (1996)
153. G. Brown and C. Farhat, "Finite Element Model Updating of Lightly Damped Structures Using Complex Modes," *AIAA Paper 96-1396, 37th Structural Dynamics Meeting*, Salt Lake City, Utah, April 15-17 (1996)
154. D. Rixen, C. Farhat and M. Géradin, "Highly Accurate and Stable Algorithms for the Static and Dynamic Analyses of Independently Modeled Substructures," *AIAA Paper 96-1399, 37th Structural Dynamics Meeting*, Salt Lake City, Utah, April 15-17 (1996)
155. F. Hemez, C. Farhat, E. Decaux, J. Duysens and P. Le Roy, "Toward the Updating of Large-Scale Dynamic Finite Element Models Using Massive Instrumentation," *AIAA Paper 96-1395, 37th Structural Dynamics Meeting*, Salt Lake City, Utah, April 15-17 (1996)
156. C. Farhat and M. Lesoinne, "On the Accuracy, Stability, and Performance of the Solution of Three-Dimensional Nonlinear Transient Aeroelastic Problems by Partitioned Procedures," *AIAA Paper 96-1388, 37th Structural Dynamics Meeting*, Salt Lake City, Utah, April 15-17 (1996)
157. R. Partch and C. Farhat, "Energy vs. Accuracy vs. Number of Actuators Trade-off Studies for the Shape Control of Space Truss Structures," *AIAA Paper 96-1285, 37th Structural Dynamics Meeting*, Salt Lake City, Utah, April 15-17 (1996)

158. C. Farhat, "Computational Challenges in Large-Scale Transient Aeroelastic Simulations," *Computational Aerosciences Workshop 95*, NASA CD Conference Publication 20010, pp. 212-215 (1996)
159. L. P. Franca, C. Farhat and M. Lesoinne, "Static Condensation: an Old Idea Revisited," *Libro de Resumenes of the Cuarto Congreso Franco-Latinoamericano de Matemáticas Aplicadas: Métodos Numéricos en Mecánica*, Concepción, Chile, p.26 (1995)
160. C. Farhat, "Extending the Frontiers of Numerical Simulation in Complex Engineering Problems," (abstract), *IBM STAR Forum, Strategies for Today and Tomorrow*, IBM Research Division Headquarters, Yorktown, New York, October 25-27 (1995)
161. R. Partch and C. Farhat, "Energy Reduction Methods for Static Shape Control of Space Truss Structures," *Proceedings Sixth International Conference on Adaptive Structures*, Key West, Florida, November 13-15 (1995)
162. M. Lesoinne, C. Farhat and L. Franca, "Unusual Stabilized Finite Element Methods for Second Order Linear Differential Equations," *Finite Elements in Fluids, New Trends and Applications*, ed. M. Morandi Cecchi, K. Morgan, J. Périaux, B. A. Schrefler, O. C. Zienkiewicz, Venezia, Italy, October 15-21, pp. 377-386 (1995)
163. L.P.Franca and C.Farhat, "Unusual Stabilized Finite Element Methods," *International Congress on Industrial and Applied Mathematics, ICIAM 95*, Hamburg, Germany, July 3-7 (1995)
164. M. Lesoinne and C. Farhat, "Geometric Conservation Laws for Aeroelastic Computations Using Unstructured Dynamic Meshes," *AIAA Paper 95-1709, 12th AIAA Computational Fluid Dynamics Conference*, San Diego, California, June 19-22 (1995)
165. D. Rixen, C. Farhat and M. Géraudin, "Approximation du Préconditionneur de Dirichlet pour la Résolution Itérative du Problème d'Interface de la Méthode Hybride FETI," *Second Colloque National en Calcul des Structures*, Giens, France, May 16-19, pp. 655-660 (1995)
166. C. Farhat, "High Fidelity Computational Methods for the Dynamic Solution of Nonlinear Coupled Aeroelastic Problems," (abstract), *Proc. Conference on Scientific Computation*, Hong Kong, May 12-13 (1995)
167. F. Hemez, C. Farhat, E. Bacher and S. Vallat "On the Efficiency of Model Updating via Genetic Algorithms for Structural Damage Detection," *AIAA Paper 95-1093, AIAA 36th Structural Dynamics Meeting*, New Orleans, Louisiana, April 10-13 (1995)
168. C. Farhat and D. Rixen, "A New Coarsening Operator for the Optimal Preconditioning of the Dual and Primal Domain Decomposition Methods: Application to Problems with Severe Coefficient Jumps," *Proceedings of the Seventh Copper Mountain Conference on Multigrid Methods*, ed. N. Duane Melson, T. A. Manteuffel, S. F. McCormick and C. C. Douglas, pp. 301-316 (1995)
169. X.-C. Cai, M. Sarkis and C. Farhat, "Overlapping Schwarz Methods for Compressible Flow Problems on Unstructured Meshes," *Proceedings of the Copper Mountain Conference on Multigrid Methods*, Copper Mountain, Colorado, April 3-7 (1995)
170. C. Farhat and F. Hemez, "A Robust Methodology for the Simultaneous Updating of FE Mass and Stiffness Matrices," *AIAA Paper 95-1443, AIAA 36th Structural Dynamics Meeting*, New Orleans, Louisiana, April 10-13 (1995)
171. C. Farhat, M. Lesoinne, P. S. Chen and S. Lantéri, "Parallel Heterogeneous Algorithms for the Solution of Three-Dimensional Transient Coupled Aeroelastic Problems," *AIAA Paper 95-1290, AIAA 36th Structural Dynamics Meeting*, New Orleans, Louisiana, April 10-13 (1995)
172. C. Farhat, F. Hemez and J. Mandel, "Improving the Convergence Rate of a Transient Substructuring Iterative Method Using the Rigid Body Modes of its Static Equivalent," *AIAA Paper 95-1271, AIAA 36th Structural Dynamics Meeting*, New Orleans, Louisiana April 10-13 (1995)
173. C. Farhat, "Computational Challenges in Large-Scale Transient Aeroelastic Simulations," *The 1995 Computational Aerosciences (CAS) Workshop*, NASA Ames Research Center, California, March 7-9, pp. 124-125 (1995)
174. D. Coulon, M. Géraudin and C. Farhat, "Adaptation of a Finite Element Solver for the Analysis of Flexible Mechanisms to Parallel Processing Systems," in: *Advances in Parallel and Vector Processing*

- for Structural Mechanics, B. H. V. Topping and M. Papadrakakis, ed. CIVIL-COMP PRESS, pp. 83-92 (1994)
175. C. Farhat, S. Lanteri and N. Maman, "Distributed Solution of Transient Coupled Aeroelastic Problems," *Third World Congress on Computational Mechanics (WCCM III)*, Chiba, Japan, August 1-5, Vol. II, pp. 1463-1565 (1994)
  176. C. Farhat, L. Crivelli and M. Géradin, "Unconditionally Stable Time-Integrators for Linear and Nonlinear Constrained Dynamics," *Third World Congress on Computational Mechanics (WCCM III)*, Chiba, Japan, August 1-5, Vol. I, pp. 28-29 (1994)
  177. D. Rixen, C. Farhat and M. Géradin, "A Smoothing Procedure for the FETI Method: Application to Static and Dynamic Structural Analyses," *Third World Congress on Computational Mechanics (WCCM III)*, Chiba, Japan, August 1-5, Vol. I, pp. 91-92 (1994)
  178. L. P. Franca and C. Farhat, "Anti-stabilizing Effects of Bubble Functions," *Third World Congress on Computational Mechanics (WCCM III)*, Chiba, Japan, August 1-5, Vol. II, pp. 1452-1453 (1994)
  179. C. Farhat, "Current Reflections on Massively Parallel Processing in Computational Mechanics," *The Eurosim 1994 International Conference on Massively Parallel Processing*, Delft, The Netherlands, June 21-23 (1994)
  180. D. Coulon, M. Géradin and C. Farhat, "Adaptation of a Finite Element Solver for the Analysis of Flexible Mechanisms to Parallel Processing Systems," *EUROMECH 320 - Multibody Systems: Advanced Algorithms and Software Tools*, Prague, CZ, June 6-8 (1994)
  181. D. Rixen, M. Géradin and C. Farhat, "An Interface Smoothing Procedure for the FETI Method: Application to Static and Dynamic Structural Analyses," *Actes 3eme Congres National Belge de Mecanique Theorique et Appliquee*, Liege, Belgium, May 30-31, pp. 425-428 (1994)
  182. C. Farhat, "Finite Element Heterogeneous Algorithms for Transient Aeroelastic Computations," *Second Japan-US Symposium on Finite Element Methods for Fluid Dynamics*, Tokyo, Japan, March 14-16, pp. 480-493 (1994)
  183. C. Farhat, L. Fezoui, S. Lanteri and M. Lorient, "Strategies for Parallelizing Navier-Stokes Solvers on MPP Machines," *Efficient Numerical Methods and Parallel Computing in Fluid Mechanics*, University of Erlangen-Nurnberg, Germany, March 7-9 (1994)
  184. C. Farhat and F. Hemez, "An Energy Based Optimum Sensor Placement Criterion and its Application to Structural Damage Detection," *12th International Modal Analysis Conference (IMAC)*, Honolulu, Hawaii, January 31-February 3 (1994)
  185. F. Hemez and C. Farhat, "Comparing Mode Shape Expansion Methods for Test-Analysis Correlation," *12th International Modal Analysis Conference (IMAC)*, Honolulu, Hawaii, January 31-February 3 (1994)
  186. C. Farhat and F. X. Roux, "Beware of the Effect of Rotational Degrees of Freedom on Theoretical Results in Domain Decomposition," (abstract), *Proc. Seventh International Conference on Domain Decomposition Methods in Scientific and Engineering Computing* (1993)
  187. C. Farhat, "Spectral Stability Theory for a Class of Domain Decomposition methods for Time Dependent Problems," (abstract), *Proc. Seventh International Conference on Domain Decomposition Methods in Scientific and Engineering Computing* (1993)
  188. M. Lesoinne and C. Farhat, "Stability Analysis of Dynamic Meshes for Transient Aeroelastic Computations," *AIAA Paper 93-3325*, 11th AIAA Computational Fluid Dynamics Conference, Orlando, Florida, July 6-9 (1993)
  189. C. Farhat and F. Hemez, "Etude Theorique et Experimentale de la Correlation entre Modeles Elements Finis et Tests Modaux pour de Grandes et Flexibles Structures Spatiales," *Colloque National en Calcul des Structures*, Giens, France, May 11-14, pp. 480-493 (1993)
  190. L. Crivelli and C. Farhat, "Implicit Transient Finite Element Structural Computations on MIMD Systems: FETI v.s. Direct Solvers" *AIAA Paper 93-1310*, AIAA 34th Structural Dynamics Meeting, La Jolla, California, April 19-21 (1993)

191. L. Peterson, S. Doebling, F. Hemez, M. S. Barlow and C. Farhat, "Selection of Experimental Modal Data Sets for Damage Detection Via Model Update," AIAA Paper 93-1481, AIAA 34th Structural Dynamics Meeting, La Jolla, California, April 19-21 (1993)
192. C. Farhat, L. Crivelli and M. Géradin, "On the Spectral Stability of Time Integration Algorithms for a Class of Constrained Dynamics Problems," AIAA Paper 93-1306, AIAA 34th Structural Dynamics Meeting, La Jolla, California, April 19-21 (1993)
193. F. Hemez and C. Farhat, "Locating and Identifying Structural Damage Using a Sensitivity-Based Model Updating Methodology," AIAA Paper 93-1608, AIAA 34th Structural Dynamics Meeting, La Jolla, California, (1993)
194. M. Barlow, S. Doebling, C. Farhat, F. Hemez, L. Peterson, "Damage Detection in a Suspended Scale Model Truss via Model Update," 11th International Modal Analysis Conference (IMAC) Kissimmee, Florida, February 1-4 (1993)
195. C. Farhat and P. S. Chen, "Regularization of the Method of Finite Element Tearing and Interconnecting," (abstract), Computational Mechanics' 92: Theory and Applications, Proceedings of the International Conference on Computational Engineering Science, Hong Kong, December 17-22, p.52 (1992)
196. M. M. Mikulas, B. K. Wada and C. Farhat, "Initially Deformed Truss Geometries for Improving the Adaptive Performance of Truss Structures," Third International Conference on Adaptive Structures, San Diego, California, November 9-11 (1992)
197. S. Lanteri and C. Farhat, "Unstructured CFD Computations on The KSR-1: preliminary results," Proceedings of the Benchmark of Concurrent Architectures for their Use in Scientific Engineering European Workshop, Sophia-Antipolis, France, October 13-16 (1992)
198. C. Farhat and L. Crivelli, "Analysis and Design of Aerospace Structures on Massively Parallel Architectures: the Method of Finite Element Tearing and Interconnecting," (abstract), NASA Computational Aerosciences Conference, NASA Ames Research Center, August 18-20, pp. 118-119 (1992)
199. E. Pramono and C. Farhat, "Performance Comparison of Structural Explicit Codes on the iPSC/860 and the CM-2," (abstract), NASA Computational Aerosciences Conference, NASA Ames Research Center, August 18-20, pp. 122-123 (1992)
200. C. Farhat and F. X. Roux, "Stabilizing a Saddle-Point Domain Decomposition Method with an Augmented Lagrangian Formulation," (abstract), Proc. Sixth International Conference on Domain Decomposition Methods in Science and Engineering, p. 13 (1992)
201. F. Hemez and C. Farhat, "A Finite Element Model Updating Methodology and its Application to Structural Damage Detection," Proc. 2nd European Space Agency International Workshop on Modal Representation of Flexible Structures by Continuum Methods, Noordwijk, The Netherlands, June 3-5, pp. 339-350 (1992)
202. C. Farhat, C. Felippa and M. Militello, "A Hybrid Substructuring Method and an Adaptive Refinement Scheme For the Distributed Solution of Three-Dimensional Structural Problems," Proc. Eighth International Conference on Vehicle Structural Mechanics and Computer Aided Engineering, pp. 179-199 (1992)
203. C. Farhat, "Iterative Solution of Eigenvalue Problems in Structural Dynamics Via Domain Decomposition," (abstract), Proceedings of the Copper Mountain Conference on Iterative Methods, Copper Mountain, Colorado, April 9-14 (1992)
204. C. Farhat and M. Géradin, "A Hybrid Formulation of a Component Mode Synthesis Method," AIAA Paper 92-2383, AIAA 33rd Structural Dynamics Meeting, Dallas, Texas, April 13-15 (1992)
205. C. Farhat, "A Lagrange Multiplier Based Divide and Conquer Finite Element Algorithm," in Parallel Methods on Large-Scale Structural Analysis and Physics Applications, ed. O. Storaasli and E. Carmona, pp. 149-156 (1991)
206. C. Farhat, "Automatic Partitioning of Finite Element/Finite Difference Meshes For Parallel Processing," (abstract), Proceedings of the 13th IMACS World Congress on Computation and Applied Mathematics, Dublin, Ireland, July 22-26 (1991)

207. C. Farhat, "Large-Scale CFD and CSM Simulations on Both Extreme Parallel Architectures: Finite Element Algorithms, Implementation Methodologies, and Performance Results," (abstract), Proceedings of the 1991 International Conference on Supercomputing, ACM Press, Cologne, Germany, June 17-21 (1991)
208. J. C. Chiou, K. C. Park and C. Farhat, "A Natural Partitioning Scheme for Parallel Simulation of Multi-body Systems," AIAA Paper 91-1111, AIAA 32nd Structural Dynamics Meeting, Baltimore, Maryland, April 8-10 (1991)
209. K. C. Park, J. C. Chiou, J. D. Downer, C. Farhat, G. S. Chen and B. K. Wada, "Dynamics of Three-Dimensional Space Crane: Motion Requirements and Computational Considerations," ASME Paper No. 90-WA/Aero-7, Dallas Texas, November 25-30 (1990)
210. C. Farhat, "Moving Finite Element Applications to Multiprocessors: From Theory to Practice," (abstract), Proceedings of the Second World Congress on Computational Mechanics, Stuttgart, FRG, August 27-31, pp. 633-635 (1990)
211. C. Farhat and T. Y. Lin, "Transient Aeroelastic Computations Using Multiple Moving Frames of Reference," AIAA Paper 90-3053, AIAA 8th Applied Aerodynamics Conference, Portland, Oregon, August 20-22 (1990)
212. C. Farhat and F. Roux, "An Unconventional Domain Decomposition Method for an Efficient Parallel Solution of Large-Scale Finite Element Systems," Proceedings of the Fourth Copper Mountain Conference on Iterative Methods, Copper Mountain, Colorado, April 1-5 (1990)
213. C. Farhat, "Which Parallel Finite Element Algorithm for Which Architecture and Which Problem," Computational Structural Mechanics and Multidisciplinary Optimization, ed. R. V. Grandhi, W. J. Stroud and V. B. Venkayya, ASME, AD-Vol. 16, pp. 35-43 (1989)
214. C. Farhat, "A Multigrid-Like Semi-Iterative Algorithm for the Massively Parallel Solution of Large Scale Finite Element Systems," Proceedings of the Fourth Copper Mountain Conference on Multigrid Methods, ed. Mandel, McCormick, Dendy, Farhat, Lonsdale, Parter, Ruge and Stuben, SIAM, pp. 171-180 (1989)
215. C. Farhat, N. Sobh and K. C. Park, "Dynamic Finite Element Simulations on the Connection Machine," Proceedings of the Conference on Scientific Applications of the Connection Machine, ed. H. Simon, World Scientific, pp. 217-233 (1988)
216. M. Benten, C. Farhat and H. Jordan, "The Force for Efficient Multitasking on the CRAY Series of Supermultiprocessors," Proceedings of the Fourth International Symposium on Science and Engineering on CRAY Supercomputers, Minneapolis, Minnesota, October, 12-14, pp. 389-406 (1988)

### **Technical Reports**

1. X.-C. Cai, C. Farhat and M. Sarkis, "Variable Degree Schwarz Methods for Unsteady Compressible Flows," ICASE Report No. 96-48, July (1996)
2. D. Rixen, M. G eradin and C. Farhat, "Interface Smoothing for FETI: Investigation for the Case of Two Subdomains - Static Analysis," Report VA-151, Laboratoire des Techniques A ronautiques et Spatiales, Universit  de Li ge (1993)
3. C. Farhat and S. Lant ri, "Simulation of Compressible Viscous Flows on a Variety of MPPs: Computational Algorithms for Unstructured Dynamic Meshes and Performance Results," *Rapports de Recherche No. 2154*, INRIA-Sophia Antipolis (1994)
4. S. Lant ri, C. Farhat and L. F zoui, "Structured Compressible Flow Computations on the Connection Machine," *Rapports de Recherche No. 1322*, INRIA-Sophia Antipolis (1990)
5. C. Farhat, "Doubly Parallel FE Computations for the ETA-10," *CU-CSSC-88-03 Report*, Center for Space Structures and Controls, University of Colorado at Boulder (1988)
6. C. Farhat, "A Parallel Algorithm for Symbolic Matrix Inversion," *CS282 Report*, Department of Electrical Engineering and Computer Science, University of California at Berkeley (1986)
7. C. Farhat, "Multiprocessors in Computational Mechanics," *Ph.D. Thesis*, University of California at Berkeley (1986)

8. C. Farhat, "Solution of the Generalized Symmetric Eigenvalue Problem on a Hypercube multiprocessor," *M.S. Thesis*, University of California at Berkeley (1986)