

Curriculum Vitae

updated: 2025-12-31

Jan Nordström

ORCID 0000-0002-7972-6183

date of birth: November 16, 1953

Married, 4 children

Degrees

- | | |
|------|--|
| 1980 | Master of Science in Aeronautics, The Royal Institute of Technology (KTH) Stockholm, Sweden |
| 1993 | PhD in Numerical Analysis, The Department of Scientific Computing Uppsala University (UU), Uppsala, Sweden |
| 1999 | Docent (Habilitation) in Numerical Analysis, UU |

Current positions

- | | |
|-------------|--|
| 2022 - | Professor (Emeritus) in Scientific Computing, Department of Mathematics, Linköping University (LiU), Sweden |
| 2020 - 2025 | Distinguished Visiting Professor, Department of Mathematics and Applied Mathematics, University of Johannesburg (UJ), South Africa |
| 2024 - 2026 | Consultant, Industrial CFD Research Group, Department of Mechanical Engineering, University of Cape Town (UCT), South Africa |
| 2025 - 2030 | Distinguished Visiting Professor, Department of Mathematics and Applied Mathematics, University of Johannesburg (UJ), South Africa |

Honorary affiliations and memberships

- | | |
|-------------|--|
| 2005 - 2007 | Senior Visiting Fellow, Center for Turbulence Research (CTR), Stanford University (SU), USA |
| 2009 - 2010 | Senior Research Fellow, Center for Turbulence Research (CTR), Stanford University (SU), USA |
| 2010 - 2013 | Honorary Professor, School of Computational and Applied Mathematics, University of the Witwatersrand (WITS), South Africa |
| 2018 - 2023 | Honorary Professor in Computational Mathematics, Department of Mechanical Engineering, University of Cape Town (UCT), South Africa |
| 2024 - | Member of the Academy of Science of South Africa (ASSAf) |
| 2025 - 2030 | Honorary Professor in Computational Mathematics, Department of Mechanical Engineering, University of Cape Town (UCT), South Africa |

Board work

2012 - 2020	Member of the board of Linköping Institute of Technology (LiTH)
2012 - 2020	Member of Advisory group for research/graduate education LiTH
2013 -	Editorial board (associate editor) of BIT Numerical Mathematics
2014 - 2018	Member of the board of the National Supercomputer Centre (NSC)
2016 -	Editorial board (associate editor) of Journal of Computational Physics
2025 -	Editorial board (associate editor) AIMS Mathematics

Previous positions and affiliations

1980 - 1995	Research Scientist, The Aeronautical Research Institute of Sweden (FFA)
1986 - 1991	Acting head at the Viscous Flow Branch, FFA
1995 - 2001	Senior Scientist, FFA
1995 - 1999	Research leader for the Unsteady Aerodynamics group at FFA
1999 - 2001	Research leader for the Wave Propagation group at FFA
1999 - 2001	Research leader for the Numerical Methods group at FFA
2001 - 2002	Senior Scientist, The Swedish Defense Research Agency (FOI)
2001 - 2004	Adjunct Professor, Numerical Analysis (Adjungerad), UU
2002 - 2010	Director of Research (Forskningschef) in Numerical Analysis, FOI
2006 - 2009	Adjunct Professor, Numerical Analysis, UU
2007 - 2009	Visiting Professor, 6 months, Department of Mechanical Engineering, Stanford University (SU), USA
2009 - 2010	Adjunct Professor, Scientific Computing, UU
2009 - 2010	Professor in Aeronautical Engineering, School of Mechanical, Industrial and Aeronautical Engineering, University of the Witwatersrand (WITS), South Africa
2009 - 2010	Head of Division of Aeronautical Engineering, School of Mechanical, Industrial and Aeronautical Engineering, WITS, South Africa
2010 - 2013	Visiting Professor, School of Electrical and Information Technology, WITS, South Africa
2011 - 2011	Visiting Professor, 3 months, Department of Mechanical Engineering, Stanford University, USA
2012 - 2020	Head of Division in Computational Mathematics, LiU, Sweden
2020 - 2021	Professor in Scientific Computing, Department of Mathematics, Linköping University (LiU), Sweden

Research visits and Consultant positions

1987	Visiting Scientist, 3 months, NASA Ames, USA
1996 - 1997	Visiting Scientist, 2 months, ICASE, USA
1998 - 2002	7 months as ICASE (Institute of Computer Applications in Science and Engineering) Consultant
2003 - 2005	Visiting Scientist, 3 months, National Institute of Aerospace (NIA), USA
2003 - 2005	Consultant, 3 months, Appl. Math., Brown University, USA
2005 - 2007	Senior Visiting Fellow, 3 months, Center for Turbulence Research, SU, USA
2006 - 2008	Consultant 2 months/year for the Dept. of Vehicle and Aeronautical Engineering, KTH, Sweden
2010	Visiting Scientist, 1 month, NIA, USA
2011	Visiting Scientist, 1 week, Caltech, USA
2013	Visiting Scientist, 1 week, Caltech, USA
2014	Seniour Visiting Fellow, 1 week, CTR, Stanford University, USA
2014	Visiting Scientist, 1 week, University of Zurich, Switzerland
2015	Visiting Scientist, 1 week, Florida State University, USA
2015	Visiting Scientist, 1 month, NIA, USA
2015	Seniour Visiting Fellow, 1 week, CTR, Stanford University, USA
2015	Visiting Scientist, 1 week, University of Zurich, Switzerland
2016	Visiting Scholar, 1 month, Department of Mechanical Engineering, Stanford University, USA
2017	Visiting Scholar, 1 month, Department of Mechanical Engineering, Stanford University, USA
2017	Visiting Academic, 2 weeks, Department of Mechanical Engineering, University of Cape Town, South Africa
2018	Visiting Scientist, 1 week, Caltech, USA
2018	Visiting Scientist, 1 week, Department of Mechanical Engineering, Technion - Israel Institute of Technology, Israel
2018	Visiting Scientist, 1 week, National Institute of Aerospace (NIA), USA
2018	Visiting Academic, 2 weeks, Department of Mechanical Engineering, University of Cape Town, South Africa
2019	Visiting Scientist, 1 week, Department of Computing + Mathematical Sciences (CMS), Caltech, USA
2019	Visiting Scientist, 1 week, National Institute of Aerospace (NIA), USA
2019	Visiting Scholar, 2 weeks, Department of Mechanical

2019	Engineering, Technion - Israel Institute of Technology, Israel Visiting Academic, 3 weeks, Department of Mechanical Engineering, University of Cape Town, South Africa
2020	Visiting Academic, 2 weeks, Department of Mathematics and Applied Mathematics, University of Johannesburg, South Africa
2021	Visiting Academic, 4 weeks, Department of Mechanical Engineering, University of Cape Town, South Africa
2021	Visiting Academic, 4 weeks, Department of Mathematics and Applied Mathematics, University of Johannesburg, South Africa
2022	Visiting Academic, 8 weeks, Department of Mathematics and Applied Mathematics, University of Johannesburg, South Africa
2022	Visiting Academic, 4 weeks, Department of Mechanical Engineering, University of Cape Town, South Africa
2023	Visiting Academic, 8 weeks, Department of Mathematics and Applied Mathematics, University of Johannesburg, South Africa
2023	Visiting Academic, 6 weeks, Department of Mechanical Engineering, University of Cape Town, South Africa
2023	Visiting Academic, 2 weeks, INRIA Bordeaux, Bordeaux, France
2024	Visiting Academic, 5 weeks, Department of Mathematics and Applied Mathematics, University of Johannesburg, South Africa
2024	Visiting Academic, 8 weeks, Department of Mechanical Engineering, University of Cape Town, South Africa
2024	Visiting Academic, 1 week, Department of Mathematics Stellenbosch University, South Africa
2024	Visiting Scholar, 1 month, Department of Mechanical Engineering, Stanford University, USA
2025	Visiting Academic, 7 weeks, Department of Mathematics and Applied Mathematics, University of Johannesburg, South Africa
2025	Visiting Academic, 9 weeks, Department of Mechanical Engineering, University of Cape Town, South Africa
2025	Visiting Academic, 1 week, Department of Applied Mathematics Waterloo University, Canada

Evaluation and committee work

2004	Independent Expert, EU 6th framework program, EST
2004	Independent Expert, EU 6th framework program, OIF
2004	Independent Expert, EU 6th framework program, IIF

2004	Member PhD Thesis evaluation committee
2004	Scientific reviewer for the Swedish Research Council
2005	Member PhD Thesis evaluation committee
2006	Independent Expert, EU 6th framework program, TOK
2007 - 2009	Scientific reviewer for the Georgian Research Council
2008	Member International Scientific Committee for Africomp2009
2009	Expert opinion for a succesful promotion at Stanford University
2009	Expert opinion for a succesfull application for the PECASE (Presidential Early Career Award for Scientists and Engineers) award
2010	Member International Scientific Committee for Africomp2011
2011	Scientific evaluator for the Cyprus Research Promotion Foundation
2011	Member PhD Thesis evaluation committee
2011	Scientific reviewer for National Science Foundation, Georgia
2011	Expert opinion for a succesful application to a faculty position at the U.S. Naval Post Graduate School in Monterey
2012	Member of two Docent evaluation committees
2012	Member International Scientific Committee for Africomp2013
2012	Member PhD Thesis evaluation committee
2013	Chairman, Numerical Treatment of Boundary Conditions, 21st AIAA CFD conference, San Diego, USA.
2013	Member PhD Thesis evaluation committee
2014	Member Evaluation Panel, Mathematical Sciences, Swedish Research Council
2014	Chairman for the Applied Mathematics panel, Academy of Finland
2014	Reviewer for the Mathematics panel, Swiss National Science Foundation
2014	Member PhD Thesis evaluation committee
2014	Member of three Docent evaluation committees
2014	Member International Scientific Committee for Africomp2015
2014	Member Organizing Committee for 3rd International Workshop on High-Order CFD Methods
2014	Expert opinion for a succesful promotion at Stanford University
2015	Member PhD Thesis evaluation committee
2015	Member of two Docent evaluation committees
2015	Member Organizing Committee for 4th International Workshop on High-Order CFD Methods
2016	Member PhD Thesis evaluation committee
2016	Member of Docent evaluation committee
2016	Member Scientific Committee for 6th EASN International Conference on Innovation in European Aeronautics Research

2017	Member Organizing Committee for 5th International Workshop on High-Order CFD Methods
2017	Member PhD Thesis evaluation committee
2017	Member Scientific Committee for 7th EASN International Conference on Innovation in European Aeronautics Research
2017	Expert opinion for a succesful promotion at Rensselaer Polytechnic Institute
2018	Member PhD Thesis evaluation committee
2019	Member PhD Thesis evaluation committee
2020	Organizer of Workshop Swedcomp2020, Motala, Sweden
2023	Member International Scientific Committee for Africomp 6
2026	Member International Scientific Committee for Africomp 7

Grants

1995	VINNOVA-NFFP project: Unsteady aerodynamics of compressible flow, colaboration between FFA and SAAB, 1500.000 SEK in two years
1999	FFA internal funds: Stable High Order Finite Difference Methods for Aerodynamics, colaboration with UU, 1000.000 SEK in two years
2004	The Swedish Research Council: Unsteady aerodynamics of compressible flow, colaboration with WITS South Africa, planning grant, 75.000 SEK
2005	The Swedish Research Council: Generation and propagation of vortices in aerodynamic applications, colaboration with WITS South Africa, 450.000 SEK in 3 years
2007	The Swedish Governmental Agency for Innovation Systems: Numerical methods for micromechanical systems in space, colaboration with Nanospace AB, 1600.000 SEK in 4 years
2009	The Swedish Research Council: Nonlinear generation of internal waves in the deep ocean by tides, collaboration with MISU, Stockholm University, 1600.000 SEK in 3 years
2010	Professor Career Contract for research, 2200.000 SEK/year in 5 years issued by Linköping University
2010	Financing of 3 PHD students from Linköping University
2010	Startup Grant, 500.000 SEK from Linköping University
2010	The European Union, FP7: IDIHOM Industrialisation of High-Order Methods, 181564 euro in 3 years
2012	The SeRC FLOW Community. Stable High-Order Boundary Conditions for In- and Outgoing Waves for Fluid

	Flow Problems, 2400.000 SEK in 4 years
2012	Swedish Meteorological and Hydrological Institute (SMHI). Numerical methods for Climate Problems, 1900.000 SEK in 4 years
2012	The Swedish Research Council: Summation-By-Parts Operators and Weak Initial Conditions for Time Discretisation of Initial Boundary Value Problems, 1800.000 SEK in 3 years
2013	The European Union, FP7: UMRIDA Uncertainty Management for Robust Industrial Design in Aeronautics, 200000 euro in 3 years
2013	VINNOVA-NFFP project: Methods for Improved Accuracy in Unsteady CFD (MIAU), 1800.000 SEK in 3 years
2014	The research school in interdisciplinary mathematics at MAI, Linköping University, Duality Based Boundary Conditions for the Navier-Stokes and Elastic Wave Equations, 1300.000 SEK in 5 years
2015	Professor Career Contract for research, 2000.000 SEK/year in 5 years issued by Linköping University
2019	The Swedish Research Council: Artificial Neural Networks, Thin Layers and Approximate Solutions to Partial Differential Equations, 2475.000 SEK in 3 years
2019	The SeRC FLOW Community: ABL, Atmospheric Boundary Layers for Climate Simulations, 1600.000 SEK in 4 years
2021	The Swedish Foundation for International Cooperation in Research and Higher Education (STINT), Synergistic Linköping University - Washington State University Exchange Program Integrating Scientific Computing Research and Multinational Corporations, 1950.000 SEK in 3 years
2021	The Swedish Research Council: Neural Network Trained Schemes for Efficient Simulation of Complex Physics using Adaptive Mesh Refinement, 1700.000 SEK in 2 years.

Invited talks

2007	American Mathematical Society, Mathematical and Computational aspects of Compressible Flow, Albuquerque, USA
2008	SIAM Annual meeting, Computational Methods for Compressible Flow, San Diego, USA
2010	SACAM10, Keynote talk, Weak Boundary and Interface Conditions with Multi-physics Applications, Pretoria, South Africa
2010	SIAM Annual Meeting, Nonlinear Boundary Conditions for Wave Propagation Problems, Pittsburgh, USA

- 2011 Africomp2011, Keynote talk, Initial Boundary Value Problems, Summation-by-parts Operators and Weak Boundary Conditions, Cape Town, South Africa
- 2011 The Popular Applied Mathematics seminar (PAM), Initial Boundary Value Problems, Summation-by-parts Operators and Weak Boundary Conditions, Uppsala, Sweden
- 2011 ICIAM 2011, Initial Boundary Value Problems, Summation-by-parts Operators and Weak Boundary Conditions, Vancouver, Canada
- 2012 Linear and Nonlinear Boundary and Interface Problems, Oberwolfach workshop, Germany
- 2012 Initial Boundary Value Problems and Boundary/Interface Conditions with Multi-Physics Applications, AIM workshop, Palo Alto, USA
- 2012 CTR Seminar: New Developments for Finite Difference Approximations of Initial Boundary Value Problems: Time Integration and Dual Consistency, Stanford, USA
- 2013 Stable High Order Finite Difference Methods for Wave Propagation Problems, SIAM CSE Meeting, Boston, USA
- 2013 SANUM 2013, Plenary talk, Initial Boundary Value Problems, Summation-by-parts Operators and Weak Boundary Conditions, Stellenbosch, South Africa
- 2013 Flamengro conference 2013, Initial Boundary Value Problems and Boundary/Interface Conditions with Multi-Physics Applications, Pretoria, South Africa
- 2014 SANUM 2014, Plenary talk, High Order Finite Difference Approximations of Multi-Physics Problems, Johannesburg, South Africa
- 2015 Well Posed Problems and Boundary Conditions in Computational Fluid Dynamics, Aviation 2015, Dallas Texas, USA.
- 2015 Well Posed Problems and Boundary Conditions in Computational Fluid Dynamics, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany.
- 2015 Plenary talk at 28th Nordic Seminar on Computational Mechanics: New Developments for Initial Boundary Value Problems involving Multi-physics at Linköping University, Tallin, Estonia.
- 2016 An Investigation of Uncertainty Effects in Mixed Hyperbolic-Parabolic Problems due to Stochastically Varying Geometry, SIAM UQ 2016, Lausanne, Switzerland.
- 2016 A Roadmap to Well Posed and Stable Problems in Computational Physics, Stanford University, Stanford, USA
- 2016 New Developments for Initial Boundary Value Problems

- involving Multi-physics at Linköping University, 6th EASN International Conference, Porto, Portugal
- 2017 Improved Numerical Performance Using the SBP-SAT Technique As the Main Building Block, SIAM CSE 17, Atlanta, USA
- 2018 Energy Stable Boundary Conditions for the Nonlinear Incompressible Navier-Stokes Equations, CFD IMPACT 2018, Haifa, Israel
- 2018 Energy Stable Boundary Conditions for the Nonlinear Incompressible Navier-Stokes Equations, NASA Langley Research Center, Hampton, USA
- 2018 Energy Stable Boundary Conditions for the Nonlinear Incompressible Navier-Stokes Equations, Old Dominion University, Norfolk, USA
- 2018 Energy Stable Boundary Conditions for the Nonlinear Incompressible Navier-Stokes Equations, BCAM - Basque Center for Applied Mathematics, Bilbao, Spain
- 2019 New Developments for Initial Boundary Value Problems involving Multi-physics at Linköping University, SDSU, San Diego, USA
- 2019 New Developments for Initial Boundary Value Problems involving Multi-physics at Linköping University, Caltech, Pasadena, USA
- 2019 Stable and accurate filtering procedures, NASA Langley Research Center, Hampton, USA
- 2019 The spatial operator in the incompressible Navier-Stokes, Oseen and Stokes equations, CFD IMPACT 2019, Haifa, Israel
- 2019 The spatial operator in the incompressible Navier-Stokes, Oseen and Stokes equations, ICIAM 2019, Valencia, Spain
- 2019 New Developments for Initial Boundary Value Problems involving Multi-physics at Linköping University, Lawrence Livermore National Lab, Livermore, USA
- 2019 Stable and accurate filtering procedures, Center for Turbulence Research, Stanford University, Stanford, USA
- 2019 New Developments for Initial Boundary Value Problems involving Multi-physics at Linköping University, University of Cape Town, Cape Town, South Africa
- 2020 New Developments for Initial Boundary Value Problems at Linköping University, University of Stavanger, Norway

- 2020 New Developments for Initial Boundary Value Problems
at Linköping University, University of Johannesburg, South Africa
- 2020 Combining Machine Learning and Computational Mathematics for
Increased Prediction Capability: two recent examples,
Workshop: Remaking the World with Machine Learning,
University of Johannesburg, South Africa
- 2022 Provably Energy Stable Approximations of Linear and
Nonlinear Hyperbolic Problems, THE 2ND NORTH AMERICAN
HIGH ORDER METHODS CONFERENCE (NAHOMCON)
San Diego, USA
- 2022 Provably Energy Stable Approximations of Linear and
Nonlinear Hyperbolic Problems, Africomp 2022,
Cape Town, South Africa
- 2022 New provably energy stable formulations for hyperbolic
problems: application to the Euler and shallow water equations,
65TH SAMS CONGRESS, Stellenbosch, South Africa
- 2023 Nonlinear Boundary Conditions for Energy and Entropy Stable
Initial Boundary Value Problems in Computational Fluid Dynamics,
SIAM Conference on Computational Science and Engineering
Amsterdam, Netherlands
- 2023 Nonlinear Boundary Conditions for Energy and Entropy Stable
Initial Boundary Value Problems in Computational Fluid Dynamics,
SANUM 2023, Plenary talk, Johannesburg, South Africa
- 2023 Nonlinear Boundary Conditions for Initial Boundary Value Problems
with Applications in Computational Fluid Dynamics,
University of Bordeaux, Bordeaux, France
- 2024 Computational Mathematics: What is it? What is it good for?
University of 3rd Age (U3A) Cape Town, South Africa
- 2024 Nonlinear Energy Stable Schemes for Incompressible
Multi-phase Flows in the Volume of Fluid (VOF) Formulation,
SANUM 2024, Stellenbosch, South Africa
- 2024 Nonlinear Energy Stable Schemes for Incompressible
Multi-phase Flows in the Volume of Fluid (VOF) Formulation,
Stanford University, Palo Alto, USA
- 2024 An Energy Stable Nonlinear Incompressible Multi-phase Flow
Formulation, HONOM 2024, Chania, Greece
- 2024 An Energy Stable Nonlinear Incompressible Multi-phase Flow
Formulation, SWEDCOMP2024, Stockholm, Sweden
- 2024 An Energy Stable Nonlinear Incompressible Multi-phase Flow
Formulation, MID-DAY MATHEMATICAL MODELLING (MMM),

2025	University of Witwatersrand, Johannesburg, South Africa Stabilizing the nonlinear initial boundary value problem governing thin film flow, BIT 65, Uppsala University, Uppsala, Sweden
2025	Plenary talk: Linear and Nonlinear Boundary Conditions: What's the difference?, SANUM 2025, University of Witwatersrand, Johannesburg, South Africa
2025	Public lecture: Computational Mathematics: What is it? What is it good for?, University of Johannesburg, Johannesburg, South Africa
2025	Public lecture: Computational Mathematics: What is it? What is it good for?, Cape Town University, Cape Town, South Africa
2025	Skew-symmetric governing equations and boundary conditions for nonlinear initial boundary value problems: a general path to stability?, Waterloo University, Waterloo, Canada
2025	Linear and nonlinear boundary conditions: What's the difference?, ICOSAHOM 2025, Montreal, Canada

Invited to the following workshops and programs

2012	Mathematisches Forschungsinstitut Oberwolfach: Recent Developments in the Numerics of Nonlinear Hyperbolic Conservation Laws and their Use in Science and Engineering
2012	American Institute of Mathematic (AIM): Nonlinear solvers for high-intensity focused ultrasound with application to cancer treatment.
2015	Mathematisches Forschungsinstitut Oberwolfach: Recent Developments in the Numerics of Nonlinear Hyperbolic Conservation Laws and their Use in Science and Engineering
2016	The Center for Turbulence Research, CTR summer program, Stanford University
2018	Institut de Mathématiques de Toulouse: NABUCO (NumericAl BoUndaries and COupling)
2018	Advances in PDEs: Theory, Computation and Application to CFD ICERM, Brown University
2019	The CFDLAB summer scholar-in-residence program, Technion - Israel Institute of Technology, Haifa, Israel

2020	The Center for Turbulence Research, CTR summer program, postponed to 2021, Stanford University, USA
2020	Remaking the World with Machine Learning, University of Johannesburg, South Africa
2022	Holistic Design of Time-Dependent PDE Discretizations, ICERM, Brown University
2022	Mathematisches Forschungsinstitut Oberwolfach: Beyond polynomials: Multi-dimensional summation-by-parts operators for general function spaces
2024	The Center for Turbulence Research, CTR summer program, Stanford University

PhD Student supervision

1997 - 2003	Ken Mattsson, Thesis title: Summation-by-Parts Operators for High Order Finite Difference Methods
1999 - 2004	Magnus Svärd, Thesis title: Stable High Order Finite Difference Methods for Aerodynamics
2003 - 2007	Jing Gong, Thesis title: Hybrid Methods for Unsteady Fluid Flow Problems in Complex Geometries
2006 - 2011	Qaiser Abbas, Thesis title: Weak Boundary and Interface Procedures for Wave and Flow Problems
2006 - 2016	Sven-Erik Ekström, (Licenciate) Project: ADIGMA, A Vertex-Centered Dual Discontinuous Galerkin Method for Hyperbolic Problems, Martin Berggren UME 1st advisor
2007 - 2012	Sofia Eriksson, Project: Stable Numerical Methods with Boundary and Interface Treatment for Applications in Aerodynamics
2007 - 2012	Kenneth Duru, Thesis title: Perfectly Matched Layers and High Order Difference Methods for Wave Equations, Gunilla Kreiss UU 1st advisor
2008 - 2013	Jens Berg, Project: Stable and High-Order Finite Difference Methods for Multiphysics Flow Problems
2008 - 2013	Per Pettersson, Project: Uncertainty Quantification and Numerical Methods for Conservation Laws, jointly with Gianluca Iaccarino, SU
2011 - 2016	Tomas Lundquist, Project: High Order Summation-by-Parts Methods in Time and Space
2011 - 2016	Samira Nikkar, Project: Stable High Order Finite Difference Methods for Wave Propagation and Flow Problems

	on Deforming Domains
2011 - 2016	Ossian O'Reilly, Project: High Order Accurate Numerical Methods in Geophysics, jointly with Eric Dunham SU
2012 - 2017	Hannes Frenander, Project: High-order finite difference approximations for hyperbolic problems: multiple penalties and non-reflecting boundary conditions
2012 - 2017	Cristina La Cognata, Project: High order summation-by-parts based approximations for discontinuous and nonlinear problems
2012 - 2017	Viktor Linders, Project: Error analysis of summation-by-parts formulations: Dispersion, transmission and accuracy
2013 - 2018	Markus Wahlsten, Project: Uncertainty quantification for wave propagation and flow problems with random data
2014 - 2019	Fatemeh Ghasemi, Project: Stability, dual consistency and conservation of summation-by-parts formulations for multi-physics problems
2014 - 2019	Andrea Ruggio, Project: Eigenvalue analysis and convergence acceleration techniques for summation-by-parts approximations
2016 - 2021	Oskar Ålund, Project: Applications of summation-by-parts operators
2017 - 2022	Fredrik Lauren, Project: Summation-by-parts formulations for flow problems
2020 - 2025	Prince Nchupang, Stable and high order accurate finite difference method for the incompressible laminar boundary layer equations, jointly with A. G. Malan, University of Cape Town

Postdoc supervision

2011 - 2014	Marco Kupiainen, Project: InDustrIalisation of Higher Order Methods (IDIHOM)
-------------	--

Teaching experience

2001	Graduate course in Computational Aeroacoustics (UU)
2004	Graduate course in Artificial Boundary Conditions (UU)
2007	Undergraduate course in Scientific Computing (UU)
2007	Undergraduate course in Analysis of Numerical Methods (UU)
2008	Undergraduate course in Computational Fluid Dynamics (KTH)
2008	Graduate course in Initial Boundary Value Problems (UU)
2009	Graduate course in Numerical Methods for Initial Boundary Value Problems, Institute of Computational Mathematics

	in Engineering (iCME), Stanford University
2011	Graduate course in Numerical Methods for Initial Boundary Value Problems, Institute of Computational Mathematics in Engineering (iCME), Stanford University
2011	Graduate course in Numerical Methods for Initial Boundary Value Problems, Linköping University (LiU)
2013	Short course in Numerical Solution of Initial Boundary Value Problems, Council for Scientific and Industrial Research (CSIR), Pretoria, South Africa
2013	SeSE Graduate course in Numerical Solution of Initial Boundary Value Problems, (LiU)
2014	Graduate course, Selected articles on well posed problems and numerical approximations, (LiU)
2016	SeSE Graduate course in Stochastic Galerkin Methods for Partial Differential Equations, (LiU)
2017	SeSE Graduate course in Numerical Solution of Initial Boundary Value Problems, (LiU)
2017	SeSE Graduate course in Numerical Solution of Initial Boundary Value Problems, University of Cape Town
2019	SeSE Graduate course: Combining Partial Differential Equations, Machine Learning and Measurements for Increased Prediction Capability, (LiU)
2023-	Undergraduate project course in Scientific Computing for visiting Washington State University students in Exchange Program Integrating Scientific Computing Research and Multinational Corporations
2024	Undergraduate project course in Scientific Computing for visiting Washington State University students in Exchange Program Integrating Scientific Computing Research and Multinational Corporations
2025	Undergraduate project course in Scientific Computing for visiting Washington State University students in Exchange Program Integrating Scientific Computing Research and Multinational Corporations

Editorial work

2008 - 2011	Editorial board of International Journal of Mechanics and MEMS
2013 -	Editorial board of BIT Numerical Mathematics

2016 - Editorial board of Journal of Computational Physics (JCP)

Recent projects

1996 - 2010 High order finite difference approximations, collaboration with ICASE, NIA and NASA, USA

1998 - 2010 Accelerating coordinate systems, collaboration with CSIR, South Africa

2004 - 2010 Unsteady Supersonic Aerodynamics, collaboration with WITS, South Africa

2005 - 2009 Hybrid Methods for Unsteady Aerodynamics, collaboration with CTR, the Centre for Turbulence Research, SU, USA

2007 - 2013 Uncertainties in Aerodynamics, collaboration with the Department of Mechanical Engineering, SU, USA

2008 - 2012 Computational methods for heat transfer in micro-mechanical systems, collaboration with Nanospace AB, Swedish Space Corporation Group, Sweden

2009 - 2011 Nonlinear generation of internal waves in the deep ocean by tides, collaboration with MISU, Stockholm University

2009 - 2016 Computational Methods for Earthquake Simulations, collaboration with the Department of Geophysics, SU, USA

2010 - 2013 The European Union, FP7: IDIHOM Industrialisation of High-Order Methods, 181564 euro in 3 years

2012 - 2017 The SeRC FLOW Community. Stable High-Order Boundary Conditions for In- and Outgoing Waves for Fluid Flow Problems

2012 - 2017 Swedish Meteorological and Hydrological Institute (SMHI). Numerical methods for Climate Problems

2012 - 2015 The Swedish Research Council: Summation-By-Parts Operators and Weak Initial Conditions for Time Discretisation of Initial Boundary Value Problems

2013 - 2016 The European Union, FP7: UMRIDA Uncertainty Management for Robust Industrial Design in Aeronautics

2013 - 2017 VINNOVA-NFFP project: Methods for Improved Accuracy in Unsteady CFD (MIAU)

2014 - 2019 The research school in interdisciplinary mathematics at MAI, Linköping University, Duality Based Boundary Conditions for the Navier-Stokes and Elastic Wave Equations

2019 - 2021 The Swedish Research Council: Artificial Neural Networks,

	Thin Layers and Approximate Solutions to Partial Differential Equations
2019 - 2022	The SeRC FLOW Community: ABL, Atmospheric Boundary Layers for Climate Simulations
2021- 2023	The Swedish Research Council: Neural Network Trained Schemes for Efficient Simulation of Complex Physics using Adaptive Mesh Refinement

Main advisor for the following PhD thesis

1. K. Mattsson, Summation-by-Parts Operators for High Order Finite Difference Methods, Acta Univ. Ups. Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology 828. 23 pp. Uppsala ISBN 91-554-5596-4. 2003.
2. M. Svärd, Stable High Order Finite Difference Methods for Aerodynamics, Acta Univ. Ups. Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology 1026. 25 pp. Uppsala ISBN 91-554-6063-1. 2004.
3. J. Gong, Hybrid Methods for Unsteady Fluid Flow Problems in Complex Geometries, Acta Univ. Ups. Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology 374. 28 pp. Uppsala ISBN 978-91-554-7046-3, 2007.
4. Q. Abbas, Weak Boundary and Interface Procedures for Wave and Flow Problems, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology, ISSN 1651-6214; 862, 2011.
5. S. Eriksson, Stable Numerical Methods with Boundary and Interface Treatment for Applications in Aerodynamics, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology, ISSN 1651-6214; 985 2012.
6. J. Berg, Stable and High-Order Finite Difference Methods for Multiphysics Flow Problems, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology, ISSN 1651-6214; 1004, 2013.

7. P. Pettersson, Uncertainty Quantification and Numerical Methods for Conservation Laws, Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology, ISSN 1651-6214; 1008, 2013.
8. T. Lundquist, High order summation-by-parts methods in time and space, Linköping Studies in Science and Technology. Dissertations, ISSN 0345-7524; 1740, 2016.
9. S. Nikkar, Stable High Order Finite Difference Methods for Wave Propagation and Flow Problems on Deforming Domains, Linköping Studies in Science and Technology. Dissertations, ISSN 0345-7524, 1774, 2016.
10. O. O'reilly, Numerical methods for wave propagation in solids containing faults and fluid-filled fractures, Linköping Studies in Science and Technology. Dissertations, ISSN 0345-7524, 1806, 2016.
11. H. Frenander, High-order finite difference approximations for hyperbolic problems: multiple penalties and non-reflecting boundary conditions, Linköping Studies in Science and Technology. Dissertations, ISSN 0345-7524, 1824, 2017.
12. C. La Cognata, High order summation-by-parts based approximations for discontinuous and nonlinear problems, Linköping Studies in Science and Technology. Dissertations, ISSN 0345-7524, 1880, 2017.
13. V. Linders, Error analysis of summation-by-parts formulations: Dispersion, transmission and accuracy, Linköping Studies in Science and Technology. Dissertations, ISSN 0345-7524, 1886, 2017.
14. M. Wahlsten, Uncertainty quantification for wave propagation and flow problems with random data, Linköping Studies in Science and Technology. Dissertations, ISSN 0345-7524, 1921, 2018.
15. F. Ghasemi, Stability, dual consistency and conservation of summation-by-parts formulations for multiphysics problems, Linköping Studies in Science and Technology. Dissertations, ISSN 0345-7524, 1988, 2019.

16. A. A. Ruggiu, Eigenvalue analysis and convergence acceleration techniques for summation-by-parts approximations, Linköping Studies in Science and Technology. Dissertations, ISSN 0345-7524, 2002, 2019.
17. O. Ålund, Applications of summation-by-parts operators, Linköping Studies in Science and Technology. Dissertations, ISSN 0345-7524, 2106, 2021.
18. F. Lauren, Summation-by-parts formulations for flow problems, Linköping Studies in Science and Technology. Dissertations, ISSN 0345-7524, 2022.
19. M.P. Nchupang, (Jointly with A. G. Malan, University of Cape Town) Stable and high order accurate finite difference method for the incompressible laminar boundary layer equations, University of Cape Town, March 2025.

Currently co-supervising the following Masters and PhD students

1. T. Jagutpal, with Professor A. G. Malan, at Department of Mechanical Engineering, University of Cape Town, South Africa.
2. K. Singh, with Professor B. Jacobs, at Department of Mathematics and Applied Mathematics, University of Johannesburg, South Africa.
3. P. Ersing, with Professor A. R. Winters, at Department of Mathematics, Applied Mathematics, Linköping University, Sweden.
4. A. M. Bhamani with Professor A. G. Malan, at Department of Mechanical Engineering, University of Cape Town, South Africa.

Currently co-supervising the following Post Docs

1. Dr Hanifa Hanif, with Professor A. G. Malan, at Department of Mechanical Engineering, University of Cape Town, South Africa.
2. Dr Mrityunjoy Mandal, with Professor A. G. Malan, at Department of Mechanical Engineering, University of Cape Town, South Africa.

Main advisor for the following Masters thesis

1. A. Bengtsson & E. Ziakouli, The Influence of Open Boundary Conditions and Difference Operators on the Time-integration of the Burgers Equation, FFA TN 1988-57, Stockholm 1988.
2. N. Nordin, The Fringe Region Technique Used in the Direct Numerical Simulation of the Incompressible Navier-Stokes Equations, FFA TN 1995-04, Stockholm 1995.
3. F. Jansson, Boundary Conditions for the Compressible Navier-Stokes Equations at a Subsonic Outflow Boundary, FFA TN 1995-05, Stockholm 1995.
4. N. Lindberg, (jointly with Gunilla Efraimsson, FFA) Numerical Investigation of Extrapolation Boundary Conditions for the Euler Equations, FFA TN 1998-03, Stockholm 1998.
5. I. Karlsson, Boundary Conditions in the $\kappa-\omega$ and $\kappa-\epsilon$ Turbulence Models, FFA TN 1998-49, Stockholm 1998.
6. E. Petrini, (jointly with Gunilla Efraimsson, FFA) A Numerical Study of the Introduction and Propagation of a 2-D Vortex, FFA TN 1998-66, Stockholm 1998.
7. Rickard Lindkvist, Boundary Conditions for the Euler Equations, FFA TN 1999-31, Stockholm 1999.
8. Martin Björck, Finite Volume Approximations and Strict Stability for Hyperbolic Problems, FFA TN 2000-35, Stockholm 2000.
9. Björn Bretz, (jointly with Karl Forsberg, FFA) High Order Finite Difference Approximations of Hyperbolic Problems, FFA TN 2000-09, Stockholm 2000.
10. J. Persson, Discrete Approximations of Electromagnetic Problems, Scientific Report FOI-R-0119-SE, Stockholm 2001.
11. R. Gustafsson, High Order Finite Difference Approximations of Electromagnetic Wave Propagation Close to Material Discontinuities, Scientific Report FOI-R-0120-SE, Stockholm 2001.

12. C. Adamsson, (jointly with Karl Forsberg, FFA), Finite Volume Methods, Unstructured Meshes and Strict Stability, Scientific Report FOI-R-0121-SE, Stockholm 2001.
13. O. Fogelklou, Investigation of Time and Frequency Domain Based Methods for Radar Cross Section Calculations, Scientific Report FOI-R-0149-SE, Stockholm 2001.
14. A. Carlsson, Conservative Difference Formulations, Energy Estimates and Artificial Dissipation, Scientific Report FOI-R-0509-SE, Stockholm 2002.
15. S. Eriksson, (jointly with Magnus Svärd, Stanford University), Simulation of Ground Effects on Wake Vortices at Runways, Report ISSN: 1401-5757, UPTEC F07062, May 2007.
16. J. Lundberg, (jointly with Magnus Svärd, Stanford University), A Computational Study of Wing-Vortex Interaction Using a High Order Accurate Finite Difference Method, Report ISSN: 1401-5757, UPTEC F07089, May 2007.
17. P. Pettersson, (jointly with Gianluca Iaccarino, Stanford University), Numerical Analysis of Burgers' Equation with Uncertain Boundary Conditions Using the Stochastic Galerkin Method, UPTEC STS08011, March 2008.
18. N. Forsberg, (jointly with Gunilla Efraimsson, KTH), Simulation of Acoustic Waves in a Turbofan Engine Air Intake, UPTEC F09028, March 2009.
19. B. Lönn, Energy decay in vortices, UPTEC F11031, ISSN 1401-5757, June 2011.
20. O. O'Reilly, (jointly with E. M. Dunham, Stanford University), Coupled Finite Difference and Finite Volume Methods for Earthquake Rupture Dynamics in Complex Geometries. UPTEC F11040, August 2011.
21. C-F. Arndt, Energy estimates and variance estimation for hyperbolic stochastic partial differential equations, LiTH-MAT-EX-2011/18-SE, September 2011.

22. T. Lundquist, Stability of SBP schemes on overlapping domains, LiTH-MAT-EX-2011/17-SE, September 2011.
23. D. M. Changfoot, (Jointly with A. G. Malan, University of Cape Town) Towards a Hybrid CFD Platform for Investigating Aircraft Trailing Vortices, University of Cape Town, November 2017. (<https://open.uct.ac.za/handle/11427/26905?show=full>)
24. A. Göransson, Stability and accuracy of difference methods using asynchronous processors, LiTH-MAT-EX-2018/03-SE, February 2018.
25. M. Olsson, Vortex Formation in Free Space, LiTH-MAT-EX-2018/12-SE, December 2018.
26. M.P. Nchupang, (Jointly with A. G. Malan, University of Cape Town) Stable and high order accurate finite difference method for the incompressible laminar boundary layer equations, University of Cape Town, January 2020.

Publications

h index

(Google Scholar: 43, Scopus: 37, Web of Science: 35)

5 most cited publications

1. M. H. Carpenter, J. Nordström & D. Gottlieb, A Stable and Conservative Interface Treatment of Arbitrary Spatial Accuracy, Journal of Computational Physics, Vol. 148 No. 2, pp. 341-365, 1999. Citations: (534, 401, 304)
2. M. Svärd & J. Nordström, Review of Summation-By-Parts Schemes for Initial-Boundary-Value Problems, Journal of Computational Physics, Vol. 268, pp. 17-38, 2014. Citations: (527, 370, 328)
3. K. Mattson & J. Nordström, Summation by parts operators for finite difference approximations of second derivatives, Journal of Computational Physics, Vol. 199, pp. 503-540, 2004. Citations: (472, 321, 265)

4. M. Svärd, M. H. Carpenter & J. Nordström, A Stable High-Order Finite Difference Scheme for the Compressible Navier-Stokes Equations, far-field boundary conditions, *Journal of Computational Physics*, Vol. 225, Issue 1, pp. 1020-1038, 2007. Citations: (264, 202, 144)
5. J. Nordström, N. Nordin & D. Henningson, The Fringe Region Technique and the Fourier-method Used in the Direct Numerical Simulation of Spatially Evolving Viscous Flows, *SIAM Journal of Scientific Computing*, Vol. 20, No. 4, pp.1365-1393, 1999. Citations: (239, 147, 134)

Articles

185. H. Hanif, J. Nordström & A.G. Malan, Efficiency analysis of continuous and discontinuous Galerkin finite element methods, *AIMS Mathematics*, Vol. 10(9): 22579–22597, 2025.
184. M. P. Nchupang, A. G. Malan & J. Nordström, A stable and accurate finite difference approximation for the incompressible lid-driven cavity flow with focus on the corner singularities, *Computers & Fluids*, Vol. 302, 106826, 2025.
183. C. Harley, E. Momoniat & J. Nordström, A Stable and Conservative Hybrid Scheme for the Frank-Kamenetskii Equation, *Journal of Scientific Computing*, Vol 103, 29, 2025.
182. J. Nordström, Open boundary conditions for nonlinear initial boundary value problems, *Journal of Computational Physics*, Vol 530, 113909, 2025.
181. K. Rothkopf, W. A . Horowitz & J. Nordström, Exact symmetry conservation and automatic mesh refinement in discrete initial boundary value problems, *Journal of Computational Physics*, Vol 524, 113686, 2025.
180. J. Nordström & A.G. Malan, An energy stable incompressible multi-phase flow formulation, *Journal of Computational Physics*, Vol 523, 113685, 2025.

179. D. Kopriva, A. R. Winters & J. Nordström, Energy Bounds for Discontinuous Galerkin Spectral Element Approximations of Well-Posed Overset Grid Problems for Hyperbolic Systems, *Journal of Computational Physics*, Vol 520, 113508, 2025.
178. C. Law & J. Nordström, Using Experimental Flow Visualization Techniques to Interpret Computational Fluid Dynamics Data, *R & D Journal of the South African Institution of Mechanical Engineering*, Vol 40, pp. 10-16, 2024.
177. O. Ålund, Y. Akamatsu, F. Lauren, T. Miura, J. Nordström & A. K. Rothkopf, Corrigendum to “Trace preserving quantum dynamics using a novel reparametrization-neutral summation-by-parts difference operator” [*J.Comput.Phys.* 425 (2021) 109917], *Journal of Computational Physics*, Vol 519, 113517, 2024.
176. J. Nordström, F. Lauren & O. Ålund, An explicit Jacobian for Newton’s method applied to nonlinear initial boundary value problems in summation-by-parts form, *AIMS Mathematics*, Vol 9(9): 23291-23312, 2024.
175. J. Nordström, A Skew-Symmetric Energy Stable Almost Dissipation Free Formulation of the Compressible Navier-Stokes Equations, *Journal of Computational Physics*, Vol 512, 113145, 2024.
174. K. Rothkopf & J. Nordström, The crucial role of Lagrange multipliers in a space-time symmetry preserving discretization scheme for IVPs, *Journal of Computational Physics*, Vol 511, 113138 2024.
173. J. Nordström, Uncertain Data in Initial Boundary Value Problems: Impact on Short and Long Time Predictions, *Journal of Computational Physics*, Vol 505, 112891, 2024.
172. J. Glaubitz, S-C. Klein, J. Nordström & P. Öffner, Summation-by-parts operators for general function spaces: The second derivative, *Journal of Computational Physics*, Vol 504, 112889, 2024.
171. Viktor Linders, Mark H. Carpenter & Jan Nordström, A superconvergent stencil-adaptive SBP-SAT finite difference scheme, *Journal of Computational Physics*, Volume 501, 112794, 2024.

170. J. Glaubitz, J. Nordström & P. Öffner, Energy-stable global radial basis function methods on summation-by-parts form, to appear in *Journal of Scientific Computing*.
169. T. Lundquist; A. R. Winters & J. Nordström, Encapsulated generalized summation-by-parts formulations for curvilinear and non-conforming meshes, *Journal of Computational Physics*, Vol. 498, 112699, 2024.
168. J. Nordström, Nonlinear boundary conditions for initial boundary value problems with applications in computational fluid dynamics, *Journal of Computational Physics*, Vol. 498, 112685, 2024.
167. K. Rothkopf & J. Nordström, A symmetry and Noether charge preserving discretization of initial value problems, *Journal of Computational Physics*, Vol. 498, 112652, 2024.
166. M. P. Nchupang, A. G. Malan, F. Lauren & J. Nordström, A provably stable and high-order accurate finite difference approximation for the incompressible boundary layer equations, *Computers & Fluids*, Vol. 267, 106073, 2023.
165. T. Lundquist, A. G. Malan & J. Nordström, A method-of-lines framework for energy stable arbitrary Lagrangian-Eulerian methods, *SIAM Journal of Numerical Analysis*, Vol. 61, Issue 5, pp. 2327–2351, 2023.
164. J. Glaubitz, S-C. Klein, J. Nordström & P. Öffner, Multi-dimensional summation-by-parts operators for general function spaces: Theory and construction, *Journal of Computational Physics*, Vol. 491, 112370, 2023.
163. R. Abgrall, J. Nordström, P. Öffner & S. Tokareva, Analysis of the SBP-SAT Stabilization for Finite Element Methods Part II: Entropy Stability, *Communications on Applied Mathematics and Computation*, Vol 5, pp. 573–595, 2023.
162. J. Glaubitz, J. Nordström & P. Öffner, Summation-by-parts operators for general function spaces, *SIAM Journal of Numerical Analysis*, Vol. 61, No. 2, pp. 733–754, 2023.
161. I. Gledhill, H. Roohani, K. Forsberg, P. Eliasson, B. W. Skews, & J. Nordström, Correction to: Theoretical treatment of fluid

flow for accelerating bodies, *Theoretical and Computational Fluid Dynamics*, Volume 37, pp. 129, 2023.

160. B. Jacobs, F. Lauren & J. Nordström, On the order reduction of approximations of fractional derivatives: An explanation and a cure, *BIT Numerical Mathematics*, Volume 63, issue 1, article 17, 2023.
159. K. Rothkopf & J. Nordström, A new variational discretization technique for initial value problems bypassing governing equations, *Journal of Computational Physics*, Vol 477, 111942, 2023.
158. D. Kopriva, G. Gassner & J. Nordström, On the Theoretical Foundation of Overset Grid Methods for Hyperbolic Problems II: Entropy Bounded Formulations for Nonlinear Conservation Laws, *Journal of Computational Physics*, Vol 471, 111620, 2022.
157. J. Nordström, A skew-symmetric energy and entropy stable formulation of the compressible Euler equations, *Journal of Computational Physics*, Vol 470, 111573, 2022.
156. H. Shamsnia, S. Ghader, A. Haghshenas & J. Nordström, A Comparative Study of Two Different Shallow Water Formulations Using Stable Summation By Parts Schemes, *Wave Motion*, Vol 114, 103043, 2022.
155. J. Nordström & F. Lauren, A stable and conservative nonlinear interface coupling for the incompressible Euler equations, *Applied Mathematics Letters*, Vol 132, Issue 6, 108171, 2022.
154. T. Lundquist, F. Lauren & J. Nordström, A multi-domain summation-by-parts formulation for complex geometries, *Journal of Computational Physics*, Vol 463, 111269, 2022.
153. J. Nordström & A. R. Winters, A linear and nonlinear analysis of the shallow water equations and its impact on boundary conditions, *Journal of Computational Physics*, Vol 463, 111254, 2022.
152. M. Wahlsten, O. Ålund & J. Nordström, An efficient hybrid method for uncertainty quantification, *BIT Numerical Mathematics*, Vol 62, pp. 607–629, 2022.

151. F. Lauren & J. Nordström, Energy Stable Wall Modelling for the Navier-Stokes equations, *Journal of Computational Physics*, Vol 457, 111046, 2022.
150. J. Nordström, Nonlinear and Linearised Primal and Dual Initial Boundary Value Problems: When are they Bounded? How are they Connected?, *Journal of Computational Physics*, Vol 455, 111001, 2022.
149. O. O'reilly & J. Nordström, Provably non-stiff implementation of weak coupling conditions for hyperbolic problems, *Numerische Mathematik*, Vol 150, No 2, pp. 551–589, 2022.
148. D. Kopriva, J. Nordström & G. Gassner, On the Theoretical Foundation of Overset Grid Methods for Hyperbolic Problems: Well-Posedness and Conservation, *Journal of Computational Physics*, Vol 448, 110732, 2022.
147. D. Kopriva, G. Gassner & J. Nordström, Stability of Discontinuous Galerkin Spectral Element Schemes for Wave Propagation when the Coefficient Matrices have Jumps, *Journal of Scientific Computing*, Vol 88, 3, 2021.
146. H. Ranocha & J. Nordström, A New Class of A Stable Summation by Parts Time Integration Schemes with Strong Initial Conditions, *Journal of Scientific Computing*, Vol 87, 33, 2021.
145. V. Singh, S. Frankel & J. Nordström, Impact of wall modelling on kinetic energy stability for the compressible Navier-Stokes equations, *Computers & Fluids*, Vol 220, 104870, 2021.
144. J. Nordström & A. R. Winters, Stable filtering procedures for nodal discontinuous Galerkin methods, *Journal of Scientific Computing*, Vol 87, 17, 2021.
143. T. Lundquist, J. Nordström & A. G. Malan, Stable dynamical adaptive mesh refinement, *Journal of Scientific Computing*, Vol 86, 43, 2021.
142. M. Svärd & J. Nordström, Convergence of energy stable finite-difference schemes with interfaces, *Journal of Computational Physics*, Vol 429, 110020, 2021.

141. F. Lauren & J. Nordström, Spectral properties of the incompressible Navier-Stokes equations, *Journal of Computational Physics*, Vol 429, 110019, 2021.
140. O. Ålund, Y. Akamatsu, F. Lauren, T. Miura, J. Nordström & A. K. Rothkopf, Trace preserving quantum dynamics using a novel reparametrization-neutral summation-by-parts difference operator, *Journal of Computational Physics*, Vol 425, 109917, 2021.
139. J. Nordström & O. Ålund, Neural Network Enhanced Computations on Coarse Grids, *Journal of Computational Physics*, Vol 425, 109821, 2021.
138. O. Ålund, G. Iaccarino & J. Nordström, Learning to Differentiate, *Journal of Computational Physics*, Vol 424, 109873, 2021.
137. R. Abgrall, J. Nordström, P. Öffner & S. Tokareva, Analysis of the SBP-SAT Stabilization for Finite Element Methods Part I: Linear Stability, *Journal of Scientific Computing*, Vol 85, 43, 2020.
136. J. Nordström & T. Hagstrom, The Number of Boundary Conditions for Initial Boundary Value Problems, *SIAM Journal of Numerical Analysis*, Vol. 58, No. 5, pp. 2818-2828, 2020.
135. V. Linders, J. Nordström & S. Frankel, Properties of Runge-Kutta-Summation-By-Parts Methods, *Journal of Computational Physics*, Vol 419, 109684, 2020.
134. V. Linders, M.H. Carpenter & J. Nordström, Accurate Solution-Adaptive Finite Difference Schemes for Coarse and Fine Grids, *Journal of Computational Physics*, Vol 410, 109393, 2020.
133. F. Ghasemi & J. Nordström, On conservation and dual consistency for summation-by-parts based approximations of parabolic problems, *Journal of Computational Physics*, Vol 410, 109282, 2020.
132. A. A. Ruggiu & J. Nordström, Eigenvalue analysis for summation by parts finite difference time discretizations, *SIAM Journal of Numerical Analysis*, 58(2), 907–928, 2020.
131. A. A. Ruggiu & J. Nordström, Multigrid schemes for high order discretizations of hyperbolic problems, *Journal of Scientific Computing*, Vol 82, 62, 2020.

130. J. Nordström & Fredrik Lauren, The Spatial Operator in the Incompressible Navier-Stokes, Oseen and Stokes Equations, Computer Methods in Applied Mechanics and Engineering, Vol 363, 112857, 2020.
129. T. Lundquist, A. G. Malan & J. Nordström, Efficient and error minimized coupling procedures for unstructured and moving meshes, Journal of Computational Physics, Vol 406, 109158, 2020.
128. T. Lundquist & J. Nordström, Stable and accurate filtering procedure, Journal of Scientific Computing, Vol 82, 16, 2020.
127. J. Nordström & F. Ghasemi, The Relation Between Primal and Dual Boundary Conditions for Hyperbolic Systems of Equations, Journal of Computational Physics, Vol 401, 109032, 2020.
126. B. Erickson, O. O'Reilly & J. Nordström, Accuracy of Stable, High-order Finite Difference Methods for Hyperbolic Systems with Non-smooth Wave Speeds, Journal of Scientific Computing, Vol 81(3), pp. 2356 - 2387, 2019.
125. M. Wahlsten & J. Nordström, Correction to: On Stochastic Investigation of Flow Problems Using the Viscous Burgers' Equation as an Example, Journal of Scientific Computing, Vol 81(2), pp. 1118, 2019.
124. M. Wahlsten & J. Nordström, On Stochastic Investigation of Flow Problems Using the Viscous Burgers' Equation as an Example, Journal of Scientific Computing, Vol 81(2), pp. 1111 - 1117, 2019.
123. J. Nordström & Andrea A. Ruggiu, Dual Time-Stepping Using Second Derivatives, Journal of Scientific Computing, Vol 81(2), pp. 1050 - 1071, 2019.
122. M. Svärd & J. Nordström, On the convergence rates of energy-stable finite-difference schemes, Journal of Computational Physics, Vol 397, 108819, 2019.
121. F. Ghasemi & J. Nordström, An Energy Stable Coupling Procedure for the Compressible and Incompressible Navier-Stokes Equations, Journal of Computational Physics, Vol 396, pp. 280-302, 2019.

120. P. Pettersson, A. Doostan & J. Nordström, Level Set Methods for Stochastic Discontinuity Detection in Nonlinear Problems, *Journal of Computational Physics*, Vol 392, pp. 511-531, 2019.
119. O. Ålund & J. Nordström, Encapsulated high order difference operators on curvilinear non-conforming grids, *Journal of Computational Physics*, Vol. 385, pp. 209-224, 2019.
118. D. Changfoot, A. G. Malan & J. Nordström, A Hybrid CFD Platform to Investigate Aircraft Trailing Vortices, *AIAA Journal of Aircraft*, Vol. 56, No. 1, pp. 344-355, 2019.
117. J. Nordström & C. La Cognata, Energy Stable Boundary Conditions for the Nonlinear Incompressible Navier-Stokes Equations, *Mathematics of Computation*, Volume 88, Number 316, pp. 665-690, March 2019.
116. S. Nikkar & J. Nordström, A dual consistent summation-by-parts formulation for the linearized incompressible Navier-Stokes equations posed on deforming domains, *Journal of Computational Physics*, Vol. 376, pp. 322-338, 2019.
115. O. Ålund & J. Nordström, A stable domain decomposition technique for advection-diffusion problems, *Journal of Scientific Computing*, Vol 77, issue 2, pp 755-774, 2018.
114. F. Lauren & J. Nordström, Practical Inlet Boundary Conditions for Internal Flow Calculations, *Computers & Fluids*, Volume 175, pp 159-166, 2018.
113. S. Eriksson & J. Nordström, Finite difference schemes with transferable interfaces for parabolic problems, *Journal of Computational Physics*, Vol. 375, pp. 935-949, 2018.
112. J. Nordström & H. Frenander, On long time error bounds for the wave equation on second order form, *Journal of Scientific Computing*, Volume 76, Issue 3, pp 1327–1336, 2018.
111. M. Wahlsten & J. Nordström, Robust Boundary Conditions for Stochastic Incompletely Parabolic Systems of Equations, *Journal of Computational Physics*, Vol. 371, pp. 192-213, 2018.

110. M. Wahlsten & J. Nordström, The effect of uncertain geometries on advection-diffusion of scalar quantities, *BIT Numerical Mathematics*, Vol. 58, pp. 509-529, 2018.
109. S. Nikkar & J. Nordström, Summation-By-Parts Operators for Non-simply Connected Domains, *SIAM Journal of Scientific Computing*, Vol. 40, No. 3. pp. A 1250- A 1273, 2018.
108. V. Linders, T. Lundquist & J. Nordström, On the Order of Accuracy of Finite Difference Operators on Diagonal Norm Based Summation-by-Parts Form, *SIAM Journal of Numerical Analysis*, Vol. 56, No. 2, pp. 1048-1063, 2018.
107. J. Nordström & V. Linders, Well-posed and Stable Transmission Problems, *Journal of Computational Physics*, Vol. 364, pp. 95-110, 2018.
106. J. Nordström & F. Ghasemi, Corrigendum to "On the relation between conservation and dual consistency for summation-by-parts schemes" [*J. Comput. Phys.* 344 (2017) 437–439], *Journal of Computational Physics*, Vol. 360, pp. 247, 2018.
105. T. Lundquist, A. G. Malan & J. Nordström, A hybrid framework for coupling arbitrary summation-by-parts schemes on general meshes, *Journal of Computational Physics*, Vol. 362, pp. 49-68, 2018.
104. M. Svärd & J. Nordström, Response to "Convergence of Summation-by-Parts Finite Difference Methods for the Wave equation", *Journal of Scientific Computing*, Vol. 74, pp. 1188-1192, 2018.
103. A. Ruggiu & J. Nordström, On pseudo-spectral time discretizations in summation-by-parts form, *Journal of Computational Physics*, Vol. 360, pp. 192-201, 2018.
102. A. Ruggiu, P. Weinerfelt & J. Nordström, A New Multigrid Formulation for High Order Finite Difference Methods on Summation-by-Parts Form, *Journal of Computational Physics*, Vol. 359, pp. 216-238, 2018.
101. H. Frenander & J. Nordström, Spurious solutions for the advection-diffusion equation using wide stencils for approximating the second derivative, *Numerical Methods for Partial Differential Equations*, Vol 34, issue 2, pp. 501-517, 2018.

100. F. Ghasemi & J. Nordström, Coupling Requirements for Multi-physics Problems Posed on Two Domains, *SIAM Journal of Numerical Analysis*, Vol 55, issue 6, pp. 2885-2904, 2017.
99. M. H. Carpenter, J. Nordström & D. Gottlieb, Corrigendum to "A stable and conservative interface treatment of arbitrary spatial accuracy" [*J. Comput. Phys.* 148 (1999) 341–365], *Journal of Computational Physics*, Vol. 351, pp. 534, 2017.
98. K. Mattson & J. Nordström, Corrigendum to "Summation by parts operators for finite difference approximations of second derivatives" [*J. Comput. Phys.* 199 (2004) 503–540], *Journal of Computational Physics*, Vol. 351, pp. 535, 2017.
97. O. O'reilly, E.M. Dunham & J. Nordström, Simulation of wave propagation along fluid-filled cracks using high-order summation-by-parts operators and implicit-explicit time stepping, *SIAM Journal of Scientific Computing*, Vol 39, pp. B675-B702, 2017.
96. H. Frenander & J. Nordström, A stable and accurate data assimilation technique using multiple penalty terms in space and time, *Dynamics of Atmospheres and Oceans*, Vol 79, pp. 56-65, 2017.
95. S. Eriksson & J. Nordström, Exact Non-Reflecting Boundary Conditions Revisited: Well-Posedness and Stability, *Foundations of Computational Mathematics*, Vol 17, issue 4, pp. 957-986, 2017.
94. O. O'reilly, T. Lundquist, E.M. Dunham & J. Nordström. Energy stable and high-order-accurate finite difference methods on staggered grids, *Journal of Computational Physics*, Vol 346, pp. 572-589, 2017.
93. D. A. Kopriva, J. Nordström & G. Gassner, Error Boundedness of Discontinuous Galerkin Spektral Element Approximations of Hyperbolic Problems, *Journal of Scientific Computing*, Vol 72, pp. 314-330, 2017.
92. J. Nordström & A. Ruggiu, On Conservation and Stability Properties for Summation-By-Parts Schemes, *Journal of Computational Physics*, Vol 344, pp. 451-464, 2017.

91. J. Nordström & F. Ghasemi, On the relation between conservation and dual consistency for summation-by-parts schemes, *Journal of Computational Physics*, Vol 344, pp. 437-439, 2017.
90. Y. T. Delorme, K. Puria, J. Nordström, V. Linders, S. Dong & S. H. Frankel, A Simple and Efficient Incompressible Navier-Stokes Solver for Unsteady Complex Geometry Flows on Truncated Domains, *Computers & Fluids*, Vol 150, pp. 84-94, 2017.
89. V. Linders, M. Kupiainen & J. Nordström, Summation-by-Parts Operators with Minimal Dispersion Error for Coarse Grid Flow Calculations, *Journal of Computational Physics*, Volume 340, pp. 160-176, 2017.
88. S. Nikkar & J. Nordström, A Fully Discrete, Stable and Conservative Summation-by-Parts Formulation for Deforming Interfaces, *Journal of Computational Physics*, Volume 339, pp. 500-524, 2017.
87. J. Nordström, A Roadmap to Well Posed and Stable Problems in Computational Physics, *Journal of Scientific Computing*, Volume 71, Issue 1, pp. 365-385, 2017.
86. H. Frenander & J. Nordström, Constructing non-reflecting boundary conditions using summation-by-parts in time. *Journal of Computational Physics*, Volume 331, pp. 38-48, 2017.
85. I. Gledhill, H. Roohani, K. Forsberg, P. Eliasson, B. W. Skews, & J. Nordström, Theoretical treatment of fluid flow for accelerating bodies, *Theoretical and Computational Fluid Dynamics*, Vol. 30, no 5, pp. 449-467, 2016.
84. T. Lundquist & J. Nordström, Efficient Fully Discrete Summation-by-parts Schemes for Unsteady Flow Problems. *BIT Numerical Mathematics*, Volume 56, No. 3, pp. 951-966, 2016.
83. J. Nordström & T. Lundquist, Summation-by-parts in Time: The Second Derivative. *SIAM Journal of Scientific Computing*, Vol. 38, No. 3, pp. A1561-A1586, 2016.
82. C. La Cognata & J. Nordström, Well-posedness, Stability and Conservation for a Discontinuous Interface Problem. *BIT Numerical Mathematics*, Volume 56, Issue 2, pp 681-704, 2016.

81. D. Amsallem & J. Nordström, Stable Model Reduction of Neurons by Non-Negative Discrete Empirical Interpolation, *SIAM Journal of Scientific Computing*, Vol. 38, No. 2, pp. B297–B326, 2016.
80. J. Nordström & S. Nikkar, Hyperbolic Systems of Equations Posed on Erroneous Curved Domains, *Journal of Computational Physics*, Volume 308, Pages 438-442, 2016.
79. H. Frenander & J. Nordström, A Provable Stable and Accurate Davies-like Relaxation Procedure Using Multiple Penalty Terms for Lateral Boundaries in Weather Prediction. *Dynamics of Atmospheres and Oceans*, Volume 73, Pages 34-46, March 2016.
78. P. Pettersson, J. Nordström & A. Doostan, A Well-posed and Stable Stochastic Galerkin Formulation of the Incompressible Navier-Stokes Equations with Random Data. *Journal of Computational Physics*, Volume 306, Pages 92-116, 2016.
77. C. Sargentone, C. La Cognata & J. Nordström, A New High Order Energy and Enstrophy Conserving Arakawa-like Jacobian Differential Operator. *Journal of Computational Physics*, Volume 301, Pages 167-177, 2015.
76. V. Linders & J. Nordström, Uniformly Best Wavenumber Approximations by Spatial Central Difference Operators, *Journal of Computational Physics*, Volume 300, Pages 695-709, 2015.
75. J. Nordström & S. Ghader, A new well-posed vorticity divergence formulation of the shallow water equations, *Ocean Modelling*, Volume 93, pp. 1-6, 2015.
74. S. Ghader & J. Nordström, High-order compact finite difference schemes for the spherical shallow water equations, *International Journal for Numerical Methods in Fluids*, Volume 78, pp. 709-738, 2015.
73. S. Nikkar & J. Nordström, Fully Discrete Energy Stable High Order Finite Difference Methods for Hyperbolic Problems in Deforming Domains, *Journal of Computational Physics*, Volume 291, Pages 82-98, 2015.
72. J. Nordström & M. Wahlsten, Variance reduction through robust design of boundary conditions for stochastic hyperbolic systems

of equations, *Journal of Computational Physics*, Volume 82, pp. 1-22, 2015.

71. O. O'Reilly, J. Nordström, J. E. Kozdon & E. M. Dunham, Simulation of Earthquake Rupture Dynamics in Complex Geometries Using Coupled Finite Difference and Finite Volume Methods, accepted in *Communications in Computational Physics*, Vol. 17, pp.337-370, 2015.
70. B. A. Erickson & J. Nordström, Stable, High Order Accurate Adaptive Schemes for Long Time, Highly Intermittent Geophysics Problems, *Journal of Computational and Applied Mathematics* 271, pp. 328–338, 2014.
69. J. Nordström, Q. Abbas, B. A. Erickson & H. Frenander, A Flexible Boundary Procedure for Hyperbolic Problems: Multiple Penalty Terms Applied in a Domain, *Communications in Computational Physics*, Vol. 16, pp. 541-570, 2014.
68. T. Lundquist & J. Nordström, The SBP-SAT Technique for Initial Value Problems, *Journal of Computational Physics*, Volume 270, pp. 86-104, 2014.
67. M. Svärd & J. Nordström, Review of Summation-By-Parts Schemes for Initial-Boundary-Value Problems, *Journal of Computational Physics*, Volume 268, pp. 17-38, 2014.
66. S. Ghader & J. Nordström, Revisiting well-posed boundary conditions for the shallow water equations, *Dynamics of Atmospheres and Oceans*, Vol. 66, p. 1-9, June 2014.
65. J. Berg & J. Nordström, Duality based boundary conditions and dual consistent finite difference discretizations of the Navier-Stokes and Euler equations, *Journal of Computational Physics*, Volume 259, 15 February, pp. 135-153, 2014.
64. P. Pettersson, G. Iaccarino & J. Nordström, A stochastic Galerkin method for the Euler equations with Roe variable transformation, *Journal of Computational Physics*, Volume 257, Part A, pp.481-500, 2014.

63. P. Pettersson, G. Iaccarino & J. Nordström, An Intrusive Hybrid Method for Discontinuous Two-Phase Flow under Uncertainty, *Computers & Fluids*, Volume 86, pp. 228–239, 2013.
62. D. Amsallem & J. Nordström, High-order accurate difference schemes for the Hodgkin-Huxley equations, *Journal of Computational Physics*, Vol. 252, pp. 573-590, 2013.
61. J. Nordström & Tomas Lundquist, Summation-By-Parts in Time, *Journal of Computational Physics* Vol 251, pp. 487-499, 2013.
60. P. Pettersson, A. Doostan & J. Nordström, On Stability and Monotonicity Requirements of Finite Difference Approximations of Stochastic Conservation Laws with Random Viscosity, *Computer Methods in Applied Mechanics and Engineering*, Vol 258, pp. 134-151, 2013.
59. J. Berg & J. Nordström, On the impact of boundary conditions on dual consistent finite difference discretizations, *Journal of Computational Physics*, Vol 236, pp. 41–55, 2013.
58. J. Nordström & J. Berg, Conjugate Heat Transfer for the Unsteady Compressible Navier-Stokes Equations Using a Multi-block Coupling, *Computers & Fluids*, Vol 72, pp. 20-29, 2013.
57. T. Fisher, M.H. Carpenter, J. Nordström, N. K. Yamaleev & C. Swanson, Discretely Conservative Finite-Difference Formulations for Nonlinear Conservation Laws in Split Form: Theory and Boundary Conditions, *Journal of Computational Physics*, Vol 234, pp. 353-375, 2013.
56. J. E. Kozdon, E. M. Dunham & J. Nordström, Simulation of Dynamic Earthquake Ruptures in Complex Geometries Using High-Order Finite Difference Methods, *Journal of Scientific Computing*, Volume 55, No 1, pp. 92-124, 2013.
55. J. Nordström & B. Lönn, Energy Decay of Vortices in Viscous Fluids: an Applied Mathematics View, *Journal of Fluid Mechanics*, 709, pp. 593609, 2012.
54. J. Berg & J. Nordström, Spectral analysis of the continuous and discretized heat and advection equation on single and multiple

- domains, *Applied Numerical Mathematics*, Vol 62, pp. 1620-1638, 2012.
53. J. Berg & J. Nordström, Superconvergent Functional Output for Time-Dependent Problems using Finite Differences on Summation-By-Parts Form, *Journal of Computational Physics*, Vol 231, pp. 6846-6860, 2012.
 52. J. Nordström, S. Eriksson and P. Eliasson, Weak and Strong Wall Boundary Procedures and Convergence to Steady-State of the Navier-Stokes Equations, *Journal of Computational Physics*, Vol 231, pp. 4867-4884, 2012.
 51. J. E. Kozdon, E. M. Dunham & J. Nordström, Interaction of Waves with Frictional Interfaces Using Summation-By-Parts Difference Operators: Weak Enforcement of Nonlinear Boundary Conditions, *Journal of Scientific Computing*, Volume 50, No 2, Pages 341-367, 2012.
 50. J. Gong & J. Nordström, Interface Procedures for Finite Difference Approximations of the Advection-diffusion Equation, *Journal of Computational and Applied Mathematics*. Vol. 236, Issue 5, pp. 601-996, 2011.
 49. J. Berg & J. Nordström, Stable Robin Solid Wall Boundary Conditions for the Navier-Stokes Equations. *Journal of Computational Physics* 230, pp. 7519-7532, 2011.
 48. S. Eriksson, Q. Abbas and J. Nordström, A stable and conservative method of locally adapting the design order of finite difference schemes. *Journal of Computational Physics* 230, pp. 4216-4231, 2011.
 47. J. Nordström and S. Eriksson, Fluid Structure Interaction Problems: the Necessity of a Well Posed, Stable and Accurate Formulation, *Communications in Computational Physics (CiCP)*, Vol. 8, pp. 1111-1138, 2010.
 46. M. H. Carpenter, J. Nordström & D. Gottlieb, Revisiting and Extending Interface Penalties for Multi-Domain Summation-By-Parts Operators, *Journal of Scientific Computing*, Vol. 45, pp. 118-150, 2010.

45. M. Svärd, J. Lundberg & J. Nordström, A Computational Study of Wing-Vortex Interaction Using High Order Finite Difference Methods, *Computers & Fluids*, Vol. 39, pp. 1267-1274, 2010.
44. J. Lindström & J. Nordström, A Stable and High Order Accurate Conjugate Heat Transfer Problem, *Journal of Computational Physics*, Vol. 229, pp. 5440-5456, 2010.
43. Q. Abbas and J. Nordström, Weak Versus Strong No-slip Boundary Conditions for the Navier-Stokes Equation, *Engineering Applications of Computational Fluid Mechanics*, Vol. 4, No. 1, pp. 29-38, 2010.
42. P. Pettersson, J. Nordström & G. Iaccarino, Boundary Procedures for the Time-dependent Burgers' Equation under Uncertainty, *Acta Mathematica Scientia*, 30B(2):539–550, 2010.
41. M. Berggren, S.E. Ekström and J. Nordström, A discontinuous Galerkin extension of the vertex-centered edge-based finite volume method, *Communications in Computational Physics (CiCP)*, Vol. 5, pp 456-468, 2009.
40. J. Nordström, S. Eriksson, C. Law & J. Gong, Shock and Vortex Calculations Using a Very High Order Accurate Euler and Navier-Stokes Solver, *International Journal of Mechanics and MEMS (JMM)*, Volume 1, No. 1, 2009.
39. J. Nordström, F. Ham, M. Shoeybi, E. van der Weide, M. Svärd, K. Mattsson, G. Iaccarino & J. Gong, A Hybrid Method for Unsteady Inviscid Fluid Flow, *Computers & Fluids*, Vol. 38, pp. 875-882, 2009.
38. I. M. A. Gledhill, K. Forsberg, P. Eliasson, J. Baloyi & J. Nordström, Investigation of acceleration effects on missile aerodynamics using Computational Fluid Dynamics, *Aerospace Science & Technology*, Volume 13, Issues 4-5, pp. 197-203, June-July 2009.
37. S. Eriksson & J. Nordström, Analysis of the Order of Accuracy for Node-centered Finite Volume Schemes, *Applied Numerical Mathematics* Volume 59, Issue 10, pp. 2659-2676, October 2009.

36. P. Pettersson, G. Iaccarino & J. Nordström, Numerical analysis of the Burger's equation in the presence of uncertainty, *Journal of Computational Physics*, Vol. 228, pp. 8394-8412, 2009.
35. J. Nordström, J. Gong, E. van der Weide and M. Svärd, A Stable and Conservative High Order Multi-block Method for the Compressible Navier-Stokes Equations, *Journal of Computational Physics*, Vol. 228, pp. 9020-9035, 2009.
34. M. Svärd, J. Gong & J. Nordström, An Accuracy Evaluation of Unstructured Node-Centered Finite Volume Methods, *Applied Numerical Mathematics*, Vol 58, pp 1142-1158, 2008.
33. M. Svärd & J. Nordström, A Stable High-Order Finite Difference Scheme for the Compressible Navier-Stokes Equations: Wall Boundary Conditions, *Journal of Computational Physics*, Vol. 227, pp. 4805-4824, 2008.
32. K. Mattson, M. Svärd, M. H. Carpenter & J. Nordström, High Order Accurate Computations for Unsteady Aerodynamics, *Computers & Fluids*, Volume 36, Issue 3, Pages 636-649, 2007.
31. J. Nordström, K. Mattson & Charles Swanson, Boundary Conditions for a Divergence Free Velocity-Pressure Formulation of the Navier-Stokes Equations, *Journal of Computational Physics*, Volume 225, Issue 1, Pages 874-8901, 2007.
30. M. Svärd, M. H. Carpenter & J. Nordström, A Stable High-Order Finite Difference Scheme for the Compressible Navier-Stokes Equations, far-field boundary conditions, *Journal of Computational Physics*, Volume 225, Issue 1, Pages 1020-1038, 2007.
29. J. Nordström, Error Bounded Schemes for Time-dependent Hyperbolic Problems, *SIAM Journal of Scientific Computing*, Volume 30, Pages 46-59, 2007.
28. J. Gong & J. Nordström, A Stable and Efficient Hybrid Scheme for Viscous Problems in Complex Geometries, *Journal of Computational Physics*, Volume 226, Pages 1291-1309, 2007.
27. J. Nordström & J. Gong, A Stable Hybrid Method for Hyperbolic Problems, *Journal of Computational Physics*, Vol. 212, pp. 436-453, 2006.

26. M. Svärd, J. Gong & J. Nordström, Stable Artificial Dissipation Operators for Finite Volume Schemes on Unstructured Grids, *Applied Numerical Mathematics*, Volume 56, pp. 1481-1490, 2006.
25. M. Svärd & J. Nordström, On the Order of Accuracy for Difference Approximations of Initial-Boundary Value Problems, *Journal of Computational Physics*, Vol. 218, pp. 333-352, 2006.
24. K. Mattson & J. Nordström, High Order Finite Difference Methods for Wave Propagation in Discontinuous Media, *Journal of Computational Physics*, Vol. 220, pp. 249-269, 2006.
23. J. Nordström, Conservative Finite Difference Formulations, Variable Coefficients, Energy Estimates and Artificial Dissipation, *Journal of Scientific Computing*, Vol. 29, pp. 375-404, 2006.
22. M. Svärd, K. Mattsson & J. Nordström, Steady State Computations Using Summation-By-Parts Operators, *Journal of Scientific Computing*, Volume 24, No. 1, pp. 79-95, 2005.
21. J. Nordström & J. Gong, A Stable and Efficient Hybrid Method for Aeroacoustic Sound Generation and Propagation, *Comptes Rendus Mecanique* 333, pp. 713-718, 2005.
20. J. Nordström & M. Svärd, Well Posed Boundary Conditions for the Navier-Stokes Equation, *SIAM Journal on Numerical Analysis*, Vol. 43, No. 3, pp. 1231-1255, 2005.
19. K. Mattsson M. Svärd and J. Nordström, Stable and Accurate Artificial Dissipation, *Journal of Scientific Computing*, Volume 21, No. 1, pp. 57-79, 2004.
18. M. Svärd and J. Nordström, Stability of Finite Volume Approximations for the Laplacian Operator on Quadrilateral and Triangular Grids, *Applied Numerical Mathematics*, Volume 51, pp. 101-124, 2004.
17. K. Mattson & J. Nordström, Summation by parts operators for finite difference approximations of second derivatives, *Journal of Computational Physics*, Vol. 199, pp. 503-540, 2004.
16. T Hagstrom & J. Nordström, Analysis of Extrapolation Boundary Conditions for the Linearized Euler Equations, *Applied Numerical Mathematics*, Volume 44, pp. 95-108, 2003.

15. J. Nordström & R. Gustafsson, High Order Finite Difference Approximations of Electromagnetic Wave Propagation Close to Material Discontinuities, *Journal of Scientific Computing*, Vol 18, No 2, 2003.
14. J. Nordström, K. Forsberg, C. Adamsson & P. Eliasson, Finite Volume Methods, Unstructured Meshes and Strict Stability, *Applied Numerical Mathematics*, Volume 48, pp. 453-473, 2003.
13. G. Kreiss, G. Efrainsson & J. Nordström, Elimination of First Order Errors in Shock Calculations, *SIAM Journal of Numerical Analysis*, Vol. 38, No. 6, pp. 1986-1998, 2001.
12. J. Nordström & Martin Björck, Finite Volume Approximations and Strict Stability for Hyperbolic Problems, *Applied Numerical Mathematics*, Volume 38, Issue 3, pp. 237-255, 2001.
11. J. Nordström & M. H. Carpenter, High Order Finite Difference Methods, Multidimensional Linear Problems and Curvilinear Coordinates, *Journal of Computational Physics*, Vol 173, pp. 149-174, 2001.
10. S. Tsynkov, S. Abarbanel, J. Nordström, V. Ryaben'kii & V. Vatsa, Global Artificial Boundary Conditions for Computation of External Flow Problems with Jets, *AIAA Journal*, vol. 38, no. 11, Nov. 2000, pp. 2014-2022.
9. J. Nordström, N. Nordin & D. Henningson, The Fringe Region Technique and the Fourier-method Used in the Direct Numerical Simulation of Spatially Evolving Viscous Flows, *SIAM Journal of Scientific Computing*, Vol. 20, No. 4, pp.1365-1393, 1999.
8. J. Nordström, On Flux-extrapolation at Supersonic Outflow Boundaries, *Applied Numerical Mathematics*, Vol. 30, Issue 4, pp. 447-457, 1999.
7. M. H. Carpenter, J. Nordström & D. Gottlieb, A Stable and Conservative Interface Treatment of Arbitrary Spatial Accuracy, *Journal of Computational Physics*, Vol 148 No. 2, pp. 341-365, 1999.
6. J. Nordström & M. H. Carpenter, Boundary and Interface Conditions for High Order Finite Difference Methods Applied to the

Euler and Navier Stokes Equations, Journal of Computational Physics, Vol 148 No. 2, pp. 621-645, 1999.

5. J. Nordström, On Extrapolation Procedures at Artificial Outflow Boundaries for the Time-Dependent Navier-Stokes Equations, Applied Numerical Mathematics, Vol. 23, pp. 457-468, 1997.
4. J. Nordström, The Use of Characteristic Boundary Conditions for the Navier-Stokes Equations, Computers & Fluids, Vol. 24, No.5, pp. 609-623, 1995.
3. J. Nordström, Accurate Solutions of the Navier-Stokes Equations Despite Unknown Outflow Boundary Data, Journal of Computational Physics Vol. 120, pp. 184-205, 1995.
2. J. Nordström, Extrapolation Procedures for the Navier-Stokes Equations, AIAA-journal Vol. 30, No. 6, pp. 1654-1656, 1992.
1. J. Nordström, The Influence of Open Boundary Conditions on the Convergence to Steady State of the Navier-Stokes Equation, Journal of Computational Physics Vol. 85, No. 1, pp. 210-244, 1989.

Books

1. P. Pettersson, G. Iaccarino & J. Nordström, Polynomial Chaos Methods for Hyperbolic Partial Differential Equations, Book in Mathematical Engineering, DOI: 10.1007/978-3-319-10714-1, Springer International Publishing, 2015.

Book chapters

14. M. Wahlsten and J. Nordström, Stochastic Galerkin Projection and Numerical Integration for Stochastic Systems of Equations: An initial attempt, Lecture Notes in Computational Science and Engineering, Vol 126, pp. 1005-1013, 2019.
13. Nordström J., Wahlsten M. Robust Design of Initial Boundary Value Problems. In: Hirsch C., Wunsch D., Szumbarski J., Łaniewski-Wołk, Ł., Pons-Prats J. (eds) Uncertainty Management for Robust Industrial Design in Aeronautics. Notes on Numerical Fluid

Mechanics and Multidisciplinary Design, vol 140, 463–478, Springer International Publishing, Cham, 2019.

12. P. Eliasson, M. Kupiainen & J. Nordström, Higher Order Accurate Solutions for Flow in a Cavity: Experiences and Lessons Learned, Spectral and High Order Methods for Partial Differential Equations ICOSAHOM 2014, Lecture Notes in Computational Science and Engineering, No. 106, 189-196, 2015.
11. T. Lundquist & J. Nordström, Efficient Fully Discrete Summation-by-Parts Schemes for Unsteady Flow Problems: An Initial Investigation, Spectral and High Order Methods for Partial Differential Equations ICOSAHOM 2014, Lecture Notes in Computational Science and Engineering, No. 106, 345-353, 2015.
10. S. Nikkar,& J. Nordström, Fully Discrete Energy Stable High Order Finite Difference Methods for Hyperbolic Problems in Deforming Domains: An Initial Investigation, Spectral and High Order Methods for Partial Differential Equations ICOSAHOM 2014, Lecture Notes in Computational Science and Engineering, No. 106, 385-395, 2015.
9. V. Linders & J. Nordström, Uniformly Best Wavenumber Approximations by Spatial Central Difference Operators: An Initial Investigation, Spectral and High Order Methods for Partial Differential Equations ICOSAHOM 2014, Lecture Notes in Computational Science and Engineering, No. 106, 325-333, 2015.
8. C. La Cognata & J. Nordström, Well-Posedness, Stability and Conservation for a Discontinuous Interface Problem: An Initial Investigation, Spectral and High Order Methods for Partial Differential Equations ICOSAHOM 2014, Lecture Notes in Computational Science and Engineering, No. 106, 147-155, 2015.
7. J. Nordström & P. Eliasson, New developments for increased performance of the SBP-SAT finite difference technique, Notes on Numerical Fluid Mechanics and Multidisciplinary Design, Volume 128, pp. 467-488, 2015.
6. J. Nordström, Linear and Nonlinear Boundary Conditions for Wave Propagation Problems, Notes on Numerical Fluid Mechanics and Multidisciplinary Design, Vol. 120, pp. 283-299, 2013.

5. J. Lindström and J. Nordström, A stable and high order interface procedure for conjugate heat transfer problems, *Numerical Mathematics and Advanced Applications*, pp 599-607, Springer-Verlag, Berlin, 2010.
4. Q. Abbas, E. van der Weide and J. Nordström, Energy stability of the MUSCL scheme, *Numerical Mathematics and Advanced Applications*, pp 61-68, Springer-Verlag, Berlin, 2010.
3. P. Pettersson, Q. Abbas, G. Iaccarino, and J. Nordström, Efficiency of shock capturing schemes for Burgers' equation with boundary uncertainty, *Numerical Mathematics and Advanced Applications*, pp 737-745, Springer-Verlag, Berlin, 2010.
2. J. Nordström, Model Problems and The Analysis of Boundary Procedures in CFD, in *Absorbing Boundaries and Layers, Domain Decomposition Methods, Application to Large Scale Computations*, Edited by L. Tourette and L. Halpern, ISBN 1-56072-940-6, Novascience, 2001.
1. B. Gustafsson & J. Nordström, Extrapolation Procedures at Outflow Boundaries for the Navier-Stokes Equations, *Computing Methods in Applied Science and Engineering*, Paris 1990, pp.136-151, SIAM, Philadelphia, PA, 1990.

Conference papers

73. C. Law, and J. Nordström, USING EXPERIMENTAL FLOW VISUALISATION TECHNIQUES TO INTERPRET COMPUTATIONAL FLUID DYNAMICS DATA, *Proceeding of the 13th South African Conference on Computational and Applied Mechanics, SACAM 2024*, pp. 131 – 141, 2024.
72. A. Rothkopf, W. A. Horowitz and J. Nordström, Exact space-time symmetry conservation and automatic mesh refinement for classical lattice field theory, *Proceedings of Science, The 41st International Symposium on Lattice Field Theory (LATTICE2024)*, Liverpool, UK, 28 July - 3 August 2024.
71. J. Ianelli, A.R. Winters and J. Nordström, ACURA: Acoustics Convection Upstream Resolution Algorithm, *AIAA Scitech 2022 Forum*, (AIAA 2022-2589), San Diego, California, USA, 3-7 January 2022.

70. Marco Kupiainen, Jing Gong, Lilit Axner, Erwin Laure and Jan Nordström, GPU-acceleration of A High Order Finite Difference Code Using Curvilinear Coordinates, CNIOT2020: International Conference on Computing, Networks and Internet of Things, Sanya, China, April 24–26, 2020.
69. Andrea A. Ruggiu and J. Nordström, Multigrid schemes for high order discretizations of hyperbolic problems, AIAA Scitech 2019 Forum, AIAA SciTech Forum, (AIAA 2019-0103), San Diego, California, USA, 7-11 January 2019.
68. Peter Eliasson, Jing Gong and J. Nordström, A Stable and Conservative Coupling of the Unsteady Compressible Navier-Stokes Equations at Interfaces Using Finite Difference and Finite Volume Methods, AIAA Paper No. AIAA-2018-0597, AIAA Aerospace Sciences Meeting, Kissimmee, Florida, USA, 8-12 January 2018.
67. Oskar Ålund and J. Nordström, A Stable, High Order Accurate and Efficient Hybrid Method for Flow Calculations in Complex Geometries, AIAA Paper No. AIAA-2018-1096, AIAA Aerospace Sciences Meeting, Kissimmee, Florida, USA, 8-12 January 2018.
66. M. Wahlsten and J. Nordström, Stochastic Galerkin Projection and Numerical Integration for Stochastic Systems of Equations, Proceedings of the UNCECOMP 2017 2nd ECCOMAS Thematic Conference on Uncertainty Quantification in Computational Sciences and Engineering M. Papadrakakis, V. Papadopoulos, G. Stefanou (eds.) Rhodes Island, Greece, 15–17 June 2017.
65. O. O’reilly, T. Lundquist and J. Nordström, ENERGY STABLE HIGH ORDER FINITE DIFFERENCE METHODS ON STAGGERED GRIDS: AN INITIAL INVESTIGATION, Proceedings of the VII European Congress on Computational Methods in Applied Sciences and Engineering M. Papadrakakis, V. Papadopoulos, G. Stefanou, V. Plevris (eds.) Crete Island, Greece, 5–10 June 2016.
64. S. Nikkar and J. Nordström, A STABLE AND CONSERVATIVE TIME-DEPENDENT INTERFACE FORMULATION ON SUMMATION-BY-PARTS FORM: AN INITIAL INVESTIGATION, Proceedings of the VII European Congress on Computational Methods in Applied Sciences and Engineering M. Pa-

padrakakis, V. Papadopoulos, G. Stefanou, V. Plevris (eds.) Crete Island, Greece, 5–10 June 2016.

63. J. Nordström and A. Ruggiu, IMPROVED DUAL TIME–STEPPING USING SECOND DERIVATIVES, Proceedings of the VII European Congress on Computational Methods in Applied Sciences and Engineering M. Papadrakakis, V. Papadopoulos, G. Stefanou, V. Plevris (eds.) Crete Island, Greece, 5–10 June 2016.
62. V. Linders, M. Kupiainen, S. H. Frankel, Y. Delorme and J. Nordström, Summation-by-Parts Operators with Minimal Dispersion Error for Accurate and Efficient Flow Calculations, AIAA Paper No. 2016-1329, 54th AIAA Aerospace Sciences Meeting, San Diego, California, USA, 4-8 January 2016.
61. P. Eliasson, T. Lundquist, and J. Nordström, A global time integration approach for realistic unsteady flow computations, AIAA Paper No. 2016-2016, 54th AIAA Aerospace Sciences Meeting, San Diego, California, USA, 4-8 January 2016.
60. J. Nordström and F. Ghasemi, Coupling Requirements for Well Posed and Stable Multi-physics Problems, Proceedings of the VI International Conference on Coupled Problems in Science and Engineering San Servolo, Venice, Italy May 18 – 20, 2015
59. M. Wahlsten and J. Nordström, An investigation of uncertainty due to stochastically varying geometry: An initial study, UNCECOMP 2015 - 1st ECCOMAS Thematic Conference on Uncertainty Quantification in Computational Sciences and Engineering, pp. 898-907, Creta Maris Conference Centre Hersonissos, Crete; United Kingdom; 25 May 2015.
58. J. Nordström, Well Posed Problems and Boundary Conditions in Computational Fluid Dynamics (Invited), AIAA Paper No. 2015-3197, 22nd AIAA Computational Fluid Dynamics Conference, Dallas, Texas, USA, June 22-26, 2015.
57. S. Nikkar and J. Nordström, Energy Stable High Order Finite Difference Methods for Hyperbolic Equations in Moving Coordinate Systems, AIAA Paper No. 2013-2579, 21st AIAA Computational Fluid Dynamics Conference, San Diego, CA, June 24-27, 2013.

56. T. Lundquist and J. Nordström, The SBP-SAT Technique for Time-Discretization, AIAA Paper No. 2013-2834, 21st AIAA Computational Fluid Dynamics Conference, San Diego, CA, June 24-27, 2013.
55. P. Eliasson and J. Nordström, The Influence of Viscous Operator and Wall Boundary Conditions on the Accuracy of the Navier-Stokes Equations, AIAA Paper No. 2013-2956, 21st AIAA Computational Fluid Dynamics Conference, San Diego, CA, June 24-27, 2013.
54. H. Frenander and J. Nordström, Increasing the convergence rate to steady-state by using multiple penalty terms applied in a domain, AIAA Paper No. 2013-2957, 21st AIAA Computational Fluid Dynamics Conference, San Diego, CA, June 24-27, 2013.
53. J. Berg and J. Nordström, Duality based boundary treatment for the Euler and Navier-Stokes equations, AIAA Paper No. 2013-2956, 21st AIAA Computational Fluid Dynamics Conference, San Diego, CA, June 24-27, 2013.
52. S. Eriksson and J. Nordström, Well-posedness and Stability of Exact Non-reflecting Boundary Conditions, AIAA Paper No. 2013-2960, 21st AIAA Computational Fluid Dynamics Conference, San Diego, CA, June 24-27, 2013.
51. O. O'Reilly, E. M. Dunham, J. E. Kozdon, and J. Nordström, Earthquake Rupture dynamics in complex geometries using coupled high-order finite difference methods and finite volume methods, 2012 AGU Fall Meeting, 3-7 December 2012, at the Moscone Convention Center, San Francisco, California, USA, 2012.
50. J. Berg and J. Nordström, A stable and dual consistent boundary treatment using finite differences on summation-by-parts form. In Proc. ECCOMAS Congress 2012, p 14, Tech. Univ. Wien, Austria, 2012.
49. O. O'Reilly, E. M. Dunham, J. E. Kozdon, and J. Nordström, Earthquake Rupture Dynamics in Complex Geometries using Coupled Summation-By-Parts High-order Finite Difference Methods and Node-Centered Finite Volume Methods, SCEC Annual Meeting – Palm Springs, California, USA, 2012.

48. O. Oreilly, J.E. Kozdon and E.M. Dunham and J. Nordström, Coupled High-Order Finite Difference and Unstructured Finite Volume Methods for Earthquake Rupture Dynamics in Complex Geometries, SIAM Conference on Mathematical & Computational issues in the Geosciences March 21-24 Hilton Long Beach & Executive Meeting Center, Long Beach, California, USA, 2011.
47. O. Oreilly, J.E. Kozdon and E.M. Dunham and J. Nordström, High-Order Finite Difference Methods for Earthquake Rupture Dynamics in Complex Geometries, 2010 AGU Fall Meeting, San Francisco, USA, 2010.
46. P. Pettersson, Q. Abbas, G. Iaccarino, and J. Nordström, Efficiency of shock capturing schemes for Burgers' equation with boundary uncertainty, Numerical Mathematics and Advanced Applications, pp 737-745, Springer-Verlag, Berlin, 2010.
45. J. Lindström and J. Nordström, A stable and high order interface procedure for conjugate heat transfer problems, Numerical Mathematics and Advanced Applications, pp 599-607, Springer-Verlag, Berlin, 2010.
44. Q. Abbas, E. van der Weide and J. Nordström, Energy stability of the MUSCL scheme, Numerical Mathematics and Advanced Applications, pp 61-68, Springer-Verlag, Berlin, 2010.
43. J.E. Kozdon and E.M. Dunham and J. Nordström, Accurate and Stable Treatment of Nonlinear Fault Boundary Conditions with Higher-Order Finite Difference Methods, Annual meeting of the Seismological Society of America, Portland Oregon, 2010.
42. J. Lindström and J. Nordström, Stable and High Order Accurate Heat Transfer, Seventh South African Conference on Computational and Applied Mechanics SACAM10, Pretoria, 10-13 January 2010.
41. S. Eriksson, Q. Abbas and J. Nordström, A stable and conservative method of locally adapting the design order of finite difference schemes, Seventh South African Conference on Computational and Applied Mechanics SACAM10, Pretoria, 10-13 January 2010.
40. P. Pettersson, Q. Abbas, G. Iaccarino and J. Nordström, Efficiency of shock capturing schemes for Burgers' equation with

- boundary uncertainty, Seventh South African Conference on Computational and Applied Mechanics SACAM10, Pretoria, 10-13 January 2010.
39. C. Law, Q. Abbas, J. Nordström and B.W. Skews, The effect of Reynolds number in high order accurate calculation with shock diffraction, Seventh South African Conference on Computational and Applied Mechanics SACAM10, Pretoria, 10-13 January 2010.
 38. Q. Abbas, E. van der Weide and J. Nordström, Energy stability of the MUSCL scheme, Seventh South African Conference on Computational and Applied Mechanics SACAM10, Pretoria, 10-13 January 2010.
 37. G. Efraimsson, N. Forsberg and J. Nordström, Simulations of Acoustic Waves in a Turbo-Fan Engine Air Intake, AIAA Paper No. 2010-3999, 16th AIAA/CEAS Aeroacoustics Conference, 7-9 June, Stockholm, Sweden, 2010.
 36. G. Iaccarino, P. Pettersson, J. Nordström and J. Witteveen, Numerical Methods for Uncertainty Propagation in High Speed Flows, V European Conference on Computational Fluid Dynamics ECCOMAS CFD, J. C. F. Pereira and A. Sequeira (Eds) Lisbon, Portugal, 14-17 June 2010.
 35. P. Eliasson, P. Weinerfelt and J. Nordström, Application of a Line-Implicit Scheme on Stretched Unstructured Grids, AIAA Paper No. 2009-163, 47th AIAA Aerospace Sciences Meeting, Jan. 5-8 2009, Orlando, Florida, USA, 2009.
 34. P. Pettersson, G. Iaccarino and J. Nordström, Boundary Procedures for the Stochastic Burgers' Equation, AIAA Paper No. 2009-3550, 19th AIAA Computational Fluid Dynamics, 22-25 June 2009, San Antonio, USA, 2009.
 33. P. Eliasson, S. Eriksson and J. Nordström, The Influence of Weak and Strong Solid Wall Boundary Conditions on the Convergence to Steady-State of the Navier-Stokes Equations, AIAA Paper No. 2009-3551, 19th AIAA Computational Fluid Dynamics, 22-25 June 2009, San Antonio, USA, 2009.
 32. S. Eriksson and J. Nordström, Analysis of Mesh and Boundary Effects on the Accuracy of Node-Centered Finite Volume Schemes,

- AIAA Paper No. 2009-3651, 19th AIAA Computational Fluid Dynamics, 22-25 June 2009, San Antonio, USA, 2009.
31. Q. Abbas, E. van der Weide and J. Nordström, Accurate and Stable Calculations Involving Shocks Using a New Hybrid Scheme, AIAA Paper No. 2009-3985, 19th AIAA Computational Fluid Dynamics, 22-25 June 2009, San Antonio, USA, 2009.
 30. J. Lindström, J. Bejhed, and J. Nordström, Measurements and Numerical Modeling of Orifice Flow in Micro-channels, AIAA Paper No. 2009-4098, the 41st AIAA Thermophysics Conference, 22-25 June 2009, San Antonio, USA, 2009.
 29. J.E. Kozdon and E.M. Dunham and J. Nordström, High-Order Treatment of Fault Boundary Conditions Using Summation-By-Parts Finite Difference Methods, Proceedings and Abstracts SCEC Annual Meeting, Vol.XIX, pp. 307-308, Palm Springs, California, USA, 2009.
 28. J.E. Kozdon and E.M. Dunham and J. Nordström, High-Order Treatment of Fault Boundary Conditions Using Summation-By-Parts Finite Difference Methods, 2009 AGU Fall Meeting, San Francisco, USA, 2009.
 27. Q. Abbas and J. Nordström, Weak Versus Strong No-slip Boundary Conditions for the Navier-Stokes Equation, Sixth South African Conference on Computational and Applied Mechanics SACAM08 Cape Town, 26-28 March 2008.
 26. S. Eriksson, C. Law, J. Gong and Jan Nordström, Shock Calculations Using a Very High Order Accurate Euler and Navier-Stokes Solver, Sixth South African Conference on Computational and Applied Mechanics SACAM08 Cape Town, 26-28 March 2008.
 25. S. Eriksson, M. Svärd and J. Nordström, Simulations of Ground Effects on Wake Vortices at Runways, Sixth South African Conference on Computational and Applied Mechanics SACAM08 Cape Town, 26-28 March 2008.
 24. P. Eliasson, J. Nordström, S. Peng & L. Tysell, Effect of Edge-based Discretization Schemes in Computations of the DLR F6 Wing-Body Configuration, AIAA Paper No. 2008-4153, the 38th

AIAA Fluid Dynamics Conference and Exhibit, 23-26 June 2008, Seattle Washington, USA, 2008.

23. K. Mattsson, M.H. Carpenter and J. Nordström, A High Order Accurate Finite Difference Method for Adaptive Grids, 5th European Conference on Computational Methods in Applied Sciences and Engineering, ECCOMAS 2008, June 30-July 5, Venice, Italy 2008.
22. L. Tysell and J. Nordström, Accuracy evaluation of the Unstructured Node-Centered Finite Volume Method in Aerodynamic Computations, the 10th ISGG Conference on Numerical Grid Generation, September 16-20, FORTH, Crete, Greece, 2007.
21. I. M. A. Gledhill, J. Baloyi, M. Maserumule, K. Forsberg, P. Eliasson and J. Nordström, Accelerating Systems: Some Remarks on Pitch Damping, 5th South African Conference on Computational and Applied Mechanics, SACAM06, Cape Town, 16-18 January, 2006.
20. G. Efraimsson, J. Gong, M. Svärd and J. Nordström, An Investigation of the Performance of a High-Order Accurate Navier-Stokes Code, European Conference on Computational Fluid Dynamics, ECCOMAS CFD 2006, paper no. 413, TU Delft, The Netherlands, 2006.
19. K. Mattson & J. Nordström, High Order Finite Difference Methods for Wave Propagation in Discontinuous Media, Waves 2005, Brown University, Providence, Rhode Island, June 20-24, 2005.
18. J. Gong, M. Svärd & J. Nordström, Artificial Dissipation for Strictly Stable Finite Volume Methods on Unstructured Meshes, WCCM Sixth World Congress on Computational Mechanics, September 5-10, 2004, Beijing, China.
17. M. Svärd & J. Nordström, Order of Accuracy for Difference Approximations of Initial-Boundary Value Problems with Second Derivatives, presented at the International Conference On Spectral and High Order Methods, (ICOSAHOM), Brown University, Rhode Island, USA 2004.
16. M. Sjögren & J. Nordström, Comparison of High Order Spectral Element and Finite Difference Methods for Electromagnetic

Wave Propagation, Paper no.494 presented at the 2003 IEEE AP-S International Symposium on Antennas and Propagation and USNC/CNC/URSI North American Radio Science Meeting, Columbus, Ohio, USA, 2003.

15. K. Mattson, M. Svärd, M. H. Carpenter & J. Nordström, Accuracy Requirements for Transient Aerodynamics, AIAA Paper No. 2003-3689, the 16th AIAA CFD Conference, Orlando Florida, USA, 2003.
14. K. Forsberg, I. Gledhill, P. Eliasson & J. Nordström, Investigations of Acceleration Effects on Missile Aerodynamics Using CFD, AIAA Paper No. 2003-4084, the 21th AIAA Applied Aerodynamics Conference, Orlando Florida, USA, 2003.
13. J. Nordström & Jing Gong, A Stable and Efficient Hybrid Method for Aeroacoustic Sound Generation and Propagation, Computational Aeroacoustics: From Acoustic Sources Modeling to Far-Field Radiated Noise Prediction, Colloquium EUROMECH 449, Paper 49, December 9-12, 2003, Chamonix, France.
12. G. Efraimsson, J. Nordström & G. Kreiss, Artificial Dissipation and Accuracy Downstream of Slightly Viscous Shocks, AIAA Paper No.2001-2608, the 15th AIAA CFD Conference, Anaheim, California, USA, 2001.
11. S. Tsynkov, S. Abarbanel, J. Nordström, V. Ryaben'kii & V. Vatsa, Global Artificial Boundary Conditions for Computation of External Flow Problems with Propulsive Jets, AIAA Paper No.99-3351, the 14th AIAA CFD Conference, Norfolk, Virginia, USA, 1999.
10. P. Eliasson, D. Wang, S. Meijer and J. Nordström Unsteady Euler Computations Through Non-Matching and Sliding-Zone Interfaces, AIAA paper 98-0371, Reno, 1998.
9. T.A. Grönland, P. Eliasson and J. Nordström, Accuracy of Transonic Flow Computations, paper no. ICAS-98-2.4.3, 21:st ICAS Congress, Sept. 13-18 1998, Melbourne, Australia.
8. A. Karlsson, B. Winzell, P. Eliasson, J. Nordström, L. Tysell, Unsteady Control Surface Pressure Measurements and Computation, AIAA-96-2417, New Orleans, 1996.

7. P. Eliasson, J. Nordström, L. Tysell, A. Karlsson, B. Winzell, Computations and Measurements of Unsteady Pressure on a Delta Wing with an Oscillating Flap, ECCOMAS, Paris, 1996.
6. J. Nordström, Accuracy of the Time-dependent Navier-Stokes Equations Using Extrapolation Procedures at Outflow Boundaries, AIAA paper 91-1605, Honolulu 1991.
5. T Berglind & J. Nordström, Flow Simulation Around a Realistic Fighter-Aircraft Configuration Including the Influence of the Hot Jet, Symposium on Advances and Applications in Computational Fluid Dynamics, Dallas 1990.
4. J. Nordström & B. Gustafsson, Boundary Conditions for the Navier-Stokes Equations at an Artificial Boundary Intersecting a Solid Boundary, Proceedings of the International Symposium on Computational Fluid Dynamics, Nagoya 1989
3. J. Nordström, Energy Absorbing Boundary Conditions for the Navier-Stokes Equations, Lecture Notes in Physics Vol. 264, Springer-Verlag Berlin 1986.
2. J. Nordström, The Use of Viscous Splitting when Solving the Navier-Stokes Equations for High Reynolds Numbers, Proceedings of the International Symposium Computational Fluid Dynamics, Tokyo 1985.
1. A. Bertelrud & J. Nordström, Experimental and Computational Investigation of the Flow in the Leading Edge Region of a Swept Wing, AIAA paper 83-1762, Danvers Massachusetts 1983.