

# Refereed publications from the IT research programs

On this page, publications in DiVA for last year are found. Separate lists for [2009](#), [2008](#) are available.

## Automatic Control (Reglerteknik)

### Chapters in book

1. [NARX identification of Hammerstein systems using least-squares support vector machines](#). Ivan Goethals, [Kristiaan Pelckmans](#), Tillmann Falck, Johan A. K. Suykens, and Bart De Moor. In *Block-oriented Nonlinear System Identification*, volume 404 of Lecture Notes in Control and Information Sciences, pp 241-258, Springer-Verlag, Berlin, 2010.

### Articles in journal

1. [A robust sliding mode controller with internal model for closed-loop artificial pancreas](#). Amjad Abu-Rmileh, Winston Garcia-Gabin, and [Darine Zambrano](#). In *Medical and Biological Engineering and Computing*, volume 48, number 12, pp 1191-1201, 2010.
2. [Internal model sliding mode control approach for glucose regulation in type 1 diabetes](#). Amjad Abu-Rmileh, Winston Garcia-Gabin, and [Darine Zambrano](#). In *Biomedical Signal Processing and Control*, volume 5, number 2, pp 94-102, 2010.
3. [Analysis of radial velocity data by a novel adaptive approach](#). Prabhu Babu, Peter Stoica, Jian Li, Zhaofu Chen, and Jian Ge. In *Astronomical Journal*, volume 139, number 2, pp 783-793, 2010.
4. [Comments on "Iterative Estimation of Sinusoidal Signal Parameters"](#). Prabhu Babu and Peter Stoica. In *IEEE Signal Processing Letters*, volume 17, number 12, pp 1022-1023, 2010.
5. [Linear Systems, Sparse Solutions, and Sudoku](#). Prabhu Babu, [Kristiaan Pelckmans](#), Peter Stoica, and Jian Li. In *IEEE Signal Processing Letters*, volume 17, number 1, pp 40-42, 2010.
6. [Spectral analysis of nonuniformly sampled data — a review](#). Prabhu Babu and Peter Stoica. In *Digital signal processing (Print)*, volume 20, number 2, pp 359-378, 2010.
7. [A Robust Methodology for In Vivo  \$T\_{1\rho}\$  Mapping](#). Joëlle K. Barral, Erik Gudmundson, Nikola Stikov, Maryam Etezadi-Amoli, [Peter Stoica](#), and Dwight G. Nishimura. In *Magnetic Resonance in Medicine*, volume 64, number 4, pp 1057-1067, 2010.
8. [Black-box identification of solar collector dynamics with variant time delay](#). Linda Brus and [Darine Zambrano](#). In *Control Engineering Practice*, volume 18, number 10, pp 1133-1146, 2010.
9. [Feedforward model predictive control of a non-linear solar collector plant with varying delays](#). Linda Brus, [Torbjörn Wigren](#), and [Darine Zambrano](#). In *IET Control Theory and Applications*, volume 4, number 8, pp 1421-1435, 2010.
10. [Covariance-based approaches to aeroacoustic noise source analysis](#). Lin Du, Luzhou Xu, Jian Li, Bin Guo, Peter Stoica, Chris Bahr, and Louis N. Cattafesta. In *Journal of Acoustical Society of America*, volume 128, number 5, pp 2877-2887, 2010.
11. [Fully automatic computation of diagonal loading levels for robust](#)

- [adaptive beamforming](#). Lin Du, Jian Li, and Peter Stoica. In *IEEE Transactions on Aerospace and Electronic Systems*, volume 46, number 1, pp 449-458, 2010.
12. [Spectral Estimation of Irregularly Sampled Exponentially Decaying Signals with Applications to RF Spectroscopy](#). Erik Gudmundson, Peter Stoica, Jian Li, Andreas Jakobsson, Michael D. Rowe, John A. S. Smith, and Jun Ling. In *Journal of magnetic resonance (San Diego, Calif. 1997: Print)*, volume 203, number 1, pp 167-176, 2010.
  13. [Comments on "The equations of motion for a standing human reveal three mechanisms for balance" \(A. Hof, Vol. 40, pp. 451-457\)](#). Kjartan Halvorsen. In *Journal of Biomechanics*, volume 43, number 16, pp 3244-3247, 2010.
  14. [On aperiodic correlation bounds](#). Hao He, Peter Stoica, and Jian Li. In *IEEE Signal Processing Letters*, volume 17, number 3, pp 253-256, 2010.
  15. [High resolution angle-Doppler imaging for MTI radar](#). Jian Li, Xumin Zhu, Peter Stoica, and Muralidhar Rangaswamy. In *IEEE Transactions on Aerospace and Electronic Systems*, volume 46, number 3, pp 1544-1556, 2010.
  16. [The phased array is the maximum SNR active array](#). Jian Li and Peter Stoica. In *IEEE signal processing magazine (Print)*, volume 27, number 2, pp 143-144, 2010.
  17. [Covert underwater acoustic communications](#). Jun Ling, Hao He, Jian Li, William Roberts, and Peter Stoica. In *Journal of Acoustical Society of America*, volume 128, number 5, pp 2898-2909, 2010.
  18. [Directional sensitivity of continuous least-squares state estimators](#). Alexander Medvedev and Hannu T. Toivonen. In *Systems & control letters (Print)*, volume 59, number 9, pp 571-577, 2010.
  19. [Unbalance estimation using linear and nonlinear regression](#). Peter Naucler and Torsten Söderström. In *Automatica*, volume 46, number 11, pp 1752-1761, 2010.
  20. [Structure testing of wave propagation models used in identification of viscoelastic materials](#). Agnes Rensfelt and Torsten Söderström. In *Automatica*, volume 46, number 4, pp 728-734, 2010.
  21. [Iterative adaptive approaches to MIMO radar imaging](#). William Roberts, Peter Stoica, Jian Li, Tarik Yardibi, and Firooz A. Sadjadi. In *IEEE Journal of Selected Topics in Signal Processing*, volume 4, number 1, pp 5-20, 2010.
  22. [Probing Waveform Synthesis and Receiver Filter Design](#). William Roberts, Hao He, Jian Li, and Peter Stoica. In *IEEE signal processing magazine (Print)*, volume 27, number 4, pp 99-112, 2010.
  23. [Algebraic Derivation of Elfving Theorem on Optimal Experiment Design and Some Connections With Sparse Estimation](#). Peter Stoica and Prabhu Babu. In *IEEE Signal Processing Letters*, volume 17, number 8, pp 743-745, 2010.
  24. [Sequence sets with optimal integrated periodic correlation level](#). Peter Stoica, Hao He, and Jian Li. In *IEEE Signal Processing Letters*, volume 17, number 1, pp 63-66, 2010.
  25. [Primal and dual model representations in kernel-based learning](#). Johan A. K. Suykens, Carlos Alzate, and Kristiaan Pelckmans. In *Statistics Surveys*, volume 4, pp 148-183, 2010.
  26. [Accuracy analysis of time domain maximum likelihood method and sample maximum likelihood method for errors-in-variables and output error identification](#). Torsten Söderström, Mei Hong, Johan Schoukens, and Rik Pintelon. In *Automatica*, volume 46, number 4, pp 721-727, 2010.
  27. [Elite golfers' kinematic sequence in full-swing and partial-swing shots](#). Fredrik Tinmark, John Hellström, Kjartan Halvorsen, and Alf Thorstensson. In *Sports Biomechanics*, volume 9, number 4, pp 236-244, 2010.

28. [Additive survival least-squares support vector machines](#). Vanya Van Belle, [Kristiaan Pelckmans](#), Johan A. K. Suykens, and Sabine Van Huffel. In *Statistics in Medicine*, volume 29, number 2, pp 296-308, 2010.
29. [New square-root factorization of inverse Toeplitz matrices](#). Bo Wahlberg and [Peter Stoica](#). In *IEEE Signal Processing Letters*, volume 17, number 2, pp 137-140, 2010.
30. [A covariance fitting approach for correlated acoustic source mapping](#). Tarik Yardibi, Jian Li, [Peter Stoica](#), Nikolas S. Zawodny, and Louis N. Cattafesta. In *Journal of Acoustical Society of America*, volume 127, number 5, pp 2920-2931, 2010.
31. [Source Localization and Sensing: A nonparametric iterative adaptive approach based on weighted least squares](#). Tarik Yardibi, Jian Li, [Peter Stoica](#), Ming Xue, and Arthur B. Baggeroer. In *IEEE Transactions on Aerospace and Electronic Systems*, volume 46, number 1, pp 425-443, 2010.
32. [Application of a transition graph-based predictive algorithm to a solar air conditioning plant](#). [Darine Zambrano](#), Winston Garcia-Gabin, and Eduardo F. Camacho. In *IEEE Transactions on Control Systems Technology*, volume 18, number 5, pp 1162-1171, 2010.
33. [Medio-lateral stability of sit-to-walk performance in older individuals with and without fear of falling](#). Anna Cristina Åberg, [Gunilla Elmgren Frykberg](#), and [Kjartan Halvorsen](#). In *Gait & Posture*, volume 31, number 4, pp 438-443, 2010.

## Conference papers

1. [Contributions to the initialization of online identification algorithms for anaesthesia: the NeuroMuscular Blockade case study](#). Juliana Almeida, [Margarida Martins da Silva](#), [Torbjörn Wigren](#), and Teresa Mendonça. In *Proc. 18th Mediterranean Conference on Control and Automation*, pp 1341-1346, IEEE, Piscataway, NJ, 2010.
2. [Modeling radial velocity signals for exoplanet search applications](#). [Prabhu Babu](#), [Peter Stoica](#), and Jian Li. In *The 7th International Conference on Informatics in Control, Automation and Robotics*, Madeira, Portugal, 2010.
3. [Dynamic models with quantized output for modeling patient response to pharmacotherapy](#). [Marcus Björk](#), [Alexander Medvedev](#), and [Peter Stoica](#). In *Proc. International Conference on Control Applications: CCA 2010*, pp 1029-1034, IEEE, Piscataway, NJ, 2010.
4. [Resource efficient operation of a class of wastewater treatment processes](#). [Bengt Carlsson](#). In *Proc. 2nd IWA Water and Energy Conference*, pp 96-97, International Water Association, 2010.
5. [An iterative adaptive approach for blood velocity estimation using ultrasound](#). [Erik Gudmundson](#), [Andreas Jakobsson](#), J. Jensen, and [Peter Stoica](#). In *The 18th European Signal Processing Conference*, Aalborg, Denmark, 2010.
6. [Waveform design with stopband and correlation constraints for cognitive radar](#). Hao He, [Peter Stoica](#), and Jian Li. In *The 2nd International Workshop on Cognitive Information Processing*, Elba, Italy, 2010.
7. [Wideband MIMO waveform design for transmit beampattern synthesis](#). Hao He, [Peter Stoica](#), and Jian Li. In *The 5th IEEE Waveform Diversity and Design Conference*, Niagara Falls, Canada, 2010.
8. [Mathematical modeling and grey-box identification of the human smooth pursuit mechanism](#). [Daniel Jansson](#), [Alexander Medvedev](#), [Peter Stoica](#), and Hans W. Axelson. In *Proc. International Conference on Control Applications: CCA 2010*, pp 1023-1028, IEEE, Piscataway, NJ, 2010.

9. [Iterative adaptive approach for wide-band active sonar array processing](#). Jian Li, Zhaofu Chen, Peter Stoica, and K. Lo. In *IEEE Oceans 2010 Conference*, Sydney, Australia, 2010.
10. [Merging PK/PD information in a minimally parameterized model of the NeuroMuscular Blockade](#). Margarida Martins da Silva, Juliana Almeida, Torbjörn Wigren, and Teresa Mendonça. In *Proc. 32nd International Conference of the IEEE Engineering in Medicine and Biology Society*, pp 4602-4605, IEEE, Piscataway, NJ, 2010.
11. [Online nonlinear identification of the effect of drugs in anaesthesia using a minimal parameterization and BIS measurements](#). Margarida Martins da Silva, Teresa Mendonça, and Torbjörn Wigren. In *Proc. American Control Conference: ACC 2010*, pp 4379-4384, American Automatic Control Council, 2010.
12. [Sub-optimal networked system identification based on covariance functions](#). Magnus Mossberg, Yasir Irshad, and Torsten Söderström. In *NecSys '10, 2nd IFAC Workshop on Distributed Estimation and Control in Networked Systems*, 2010.
13. [Efficient adaptive filtering for smooth linear FIR models](#). Kristiaan Pelckmans, Toon van Waterschoot, and Johan A. K. Suykens. In *Proc. 18th European Signal Processing Conference*, pp 2136-2140, European Association for Signal Processing, 2010.
14. [On the identification of monotone Wiener systems](#). Kristiaan Pelckmans. In *Proc. 49th Conference on Decision and Control*, pp 7208-7213, IEEE, Piscataway, NJ, 2010.
15. [Speedup and tracking accuracy evaluation of parallel particle filter algorithms implemented on a multicore architecture](#). Olov Rosén, Alexander Medvedev, and Mats Ekman. In *Proc. International Conference on Control Applications: CCA 2010*, pp 440-445, IEEE, Piscataway, NJ, 2010.
16. [Improved non-parametric sparse recovery with data matched penalties](#). Marco Signoretto, Kristiaan Pelckmans, Lieven De Lathauwer, and Johan A. K. Suykens. In *Proc. 2nd International Workshop on Cognitive Information Processing*, pp 46-51, IEEE, Piscataway, NJ, 2010.
17. [A new method for moving-average parameter estimation](#). Peter Stoica, Lin Du, Jian Li, and T. Georgiou. In *Proc. 44th Asilomar Conference on Signals, Systems and Computers*, IEEE, Piscataway, NJ, 2010.
18. [Asymptotic accuracy of covariance function based errors-in-variables system parameter estimates](#). Torsten Söderström and Magnus Mossberg. In *Proc. 49th Conference on Decision and Control*, pp 328-333, IEEE, Piscataway, NJ, 2010.
19. [Errors-in-variables identification using a generalized instrumental variable estimation method](#). Torsten Söderström. In *Proc. 49th Conference on Decision and Control*, pp 322-327, IEEE, Piscataway, NJ, 2010.
20. [System identification for the errors-in-variables problem](#). Torsten Söderström. In *UKACC International Conference on CONTROL 2010*, 2010.
21. [A new sparse sensing approach for MIMO radar imaging](#). Xing Tan, William Roberts, Jian Li, and Peter Stoica. In *The 8th European Conference on Synthetic Aperture Radar*, Aachen, Germany, 2010.
22. [Efficient sparse Bayesian learning via Gibbs sampling](#). Xing Tan, Jian Li, and Peter Stoica. In *the 35th International Conference on Acoustics, Speech and Signal Processing*, Dallas, USA, 2010.
23. [Recursive prediction error identification and scaling of non-linear systems with midpoint numerical integration](#). Soma Tayamon and Torbjörn Wigren. In *Proc. American Control Conference: ACC 2010*, pp 4510-4515, American Automatic Control Council, 2010.
24. [On the use of a clinical kernel in survival analysis](#). Vanya Van Belle, Kristiaan Pelckmans, Johan A. K. Suykens, and Sabine Van Huffel. In *Proc. 18th European Symposium on Artificial Neural*

- Networks*, pp 451-456, d-side publications, Evere, Belgium, 2010.
25. [On optimal input signal design for frequency response estimation](#). Bo Wahlberg, Hakan Hjalmarsson, and Peter Stoica. In *The 49th IEEE Conference on Decision and Control*, Atlanta, USA, 2010.
  26. [MIMO radar sparse angle-Doppler imaging for ground moving target indication](#). Ming Xue, William Roberts, Jian Li, Xing Tan, and Peter Stoica. In *IEEE International Radar Conference*, Washington DC, USA, 2010.
  27. [A regional Swedish consortium for research and education: Demand-driven research within wastewater and sludge management](#). Linda Åmand and Bengt Carlsson. In *Proc. 2nd IWA Water and Energy Conference*, pp 100-101, International Water Association, 2010.
  28. [Learning control applied to continuous wastewater treatment systems: an initial study](#). Linda Åmand and Bengt Carlsson. In *Proc. 2nd IWA Water and Energy Conference*, pp 98-99, International Water Association, 2010.

## Numerical Analysis (Numerisk analys)

### Chapters in book

1. [Agglomeration multigrid for the vertex-centered dual discontinuous Galerkin method](#). Sven-Erik Ekström and Martin Berggren. In *ADIGMA — A European Initiative on the Development of Adaptive Higher-Order Variational Methods for Aerospace Applications*, volume 113 of Notes on Numerical Fluid Mechanics and Multidisciplinary Design, pp 301-308, Springer-Verlag, Berlin, 2010.
2. [Incorporating a discontinuous Galerkin method into the existing vertex-centered edge-based finite volume solver Edge](#). Sven-Erik Ekström and Martin Berggren. In *ADIGMA — A European Initiative on the Development of Adaptive Higher-Order Variational Methods for Aerospace Applications*, volume 113 of Notes on Numerical Fluid Mechanics and Multidisciplinary Design, pp 39-52, Springer-Verlag, Berlin, 2010.
3. [Threshold Concepts in Computer Science: an ongoing empirical investigation](#). Lynda Thomas, Jonas Boustedt, Anna Eckerdal, Robert McCartney, Jan Erik Moström, Kate Sanders, and Carol Zander. In *Threshold Concepts and Transformational Learning*, pp 241-258, Sense Publishers, Rotterdam, The Netherlands, 2010.

### Articles in journal

1. [Weak versus strong no-slip boundary conditions for the Navier-Stokes equations](#). Qaisar Abbas and Jan Nordström. In *Engineering Applications of Computational Fluid Mechanics*, volume 4, pp 29-38, 2010.
2. [Condition number analysis for various forms of block matrix preconditioners](#). Owe Axelsson and János Karátson. In *Electronic Transactions on Numerical Analysis*, volume 36, pp 168-194, 2010.
3. [Robust AMLI methods for parabolic Crouzeix-Raviart FEM systems](#). Petia Boyanova, Svetozar Margenov, and Maya Neytcheva. In *Journal of Computational and Applied Mathematics*, volume 235, pp 380-390, 2010.
4. [A note on radial basis function interpolant limits](#). Martin D. Buhmann, Slawomir Dinew, and Elisabeth Larsson. In *IMA Journal of Numerical Analysis*, volume 30, pp 543-554, 2010.

5. [Revisiting and Extending Interface Penalties for Multidomain Summation-by-Parts Operators](#). Mark H. Carpenter, [Jan Nordström](#), and David Gottlieb. In *Journal of Scientific Computing*, volume 45, pp 118-150, 2010.
6. [An adaptive algorithm for simulation of stochastic reaction-diffusion processes](#). [Lars Ferm](#), [Andreas Hellander](#), and [Per Lötstedt](#). In *Journal of Computational Physics*, volume 229, pp 343-360, 2010.
7. [Rotational transport on a sphere: Local node refinement with radial basis functions](#). Natasha Flyer and [Erik Lehto](#). In *Journal of Computational Physics*, volume 229, pp 1954-1969, 2010.
8. [A novel method for solving multiscale elliptic problems with randomly perturbed data](#). Victor Ginting, [Axel Målqvist](#), and Michael Presho. In *Multiscale Modeling & simulation*, volume 8, pp 977-996, 2010.
9. [An algebraic variational multiscale-multigrid method for large eddy simulation of turbulent flow](#). Volker Gravemeier, Michael W. Gee, [Martin Kronbichler](#), and Wolfgang A. Wall. In *Computer Methods in Applied Mechanics and Engineering*, volume 199, pp 853-864, 2010.
10. [Costs and constraints from time-delayed feedback in small gene regulatory motifs](#). [Andreas Grönlund](#), [Per Lötstedt](#), and [Johan Elf](#). In *Proceedings of the National Academy of Sciences of the United States of America*, volume 107, pp 8171-8176, 2010.
11. [Incorporating active transport of cellular cargo in stochastic mesoscopic models of living cells](#). [Andreas Hellander](#) and [Per Lötstedt](#). In *Multiscale Modeling & simulation*, volume 8, pp 1691-1714, 2010.
12. [Convergence analysis of finite element approximations of the Joule heating problem in three spatial dimensions](#). Michael J. Holst, Mats G. Larson, [Axel Målqvist](#), and Robert Söderlund. In *BIT Numerical Mathematics*, volume 50, pp 781-795, 2010.
13. [Magnetohydrodynamic flow of a Sisko fluid in annular pipe: A numerical study](#). Masood Khan, [Qaisar Abbas](#), and [Kenneth Duru](#). In *International Journal for Numerical Methods in Fluids*, volume 62, pp 1169-1180, 2010.
14. [A stable and high-order accurate conjugate heat transfer problem](#). [Jens Lindström](#) and [Jan Nordström](#). In *Journal of Computational Physics*, volume 229, pp 5440-5456, 2010.
15. [Stable and accurate interpolation operators for high-order multiblock finite difference methods](#). [Ken Mattsson](#) and Mark H. Carpenter. In *SIAM Journal on Scientific Computing*, volume 32, pp 2298-2320, 2010.
16. [Stable and accurate second-order formulation of the shifted wave equation](#). [Ken Mattsson](#) and [Florencia Parisi](#). In *Communications in Computational Physics*, volume 7, pp 103-137, 2010.
17. [A perfectly matched layer applied to a reactive scattering problem](#). [Anna Nissen](#), [Hans O. Karlsson](#), and [Gunilla Kreiss](#). In *Journal of Chemical Physics*, volume 133, pp 054306:1-11, 2010.
18. [Fluid structure interaction problems: the necessity of a well posed, stable and accurate formulation](#). [Jan Nordström](#) and [Sofia Eriksson](#). In *Communications in Computational Physics*, volume 8, pp 1111-1138, 2010.
19. [A hybrid scheme for bore design optimization of a brass instrument](#). Daniel Noreland, [Rajitha Udawalpola](#), and Martin Berggren. In *Journal of Acoustical Society of America*, volume 128, pp 1391-1400, 2010.
20. [Pricing American options using a space-time adaptive finite difference method](#). Jonas Persson and [Lina von Sydow](#). In *Mathematics and Computers in Simulation*, volume 80, pp 1922-1935, 2010.
21. [Boundary procedures for the time-dependent Burgers' equation under uncertainty](#). [Per Pettersson](#), [Jan Nordström](#), and [Gianluca Iaccarino](#). In *Acta Mathematica Scientia*, volume 30, pp 539-550,

- 2010.
22. [Density estimation of two-phase flow with multiscale and randomly perturbed data](#). Michael Presho, Axel Målqvist, and Victor Ginting. In *Advances in Water Resources*, volume 33, pp 1130-1141, 2010.
  23. [A computational study of vortex-airfoil interaction using high-order finite difference methods](#). Magnus Svård, Johan Lundberg, and Jan Nordström. In *Computers & Fluids*, volume 39, pp 1267-1274, 2010.
  24. [High contrast microwave tomography using topology optimization techniques](#). Eddie Wadbro and Martin Berggren. In *Journal of Computational and Applied Mathematics*, volume 234, pp 1773-1780, 2010.
  25. [Microwave tomographic imaging as a sequence of topology optimization problems](#). Eddie Wadbro. In *Optimization and Engineering*, volume 11, pp 597-610, 2010.
  26. [Shape and topology optimization of an acoustic horn-lens combination](#). Eddie Wadbro, Rajitha Udawalpola, and Martin Berggren. In *Journal of Computational and Applied Mathematics*, volume 234, pp 1781-1787, 2010.
  27. [Direct numerical simulations of localized disturbances in pipe Poiseuille flow](#). Per-Olov Åsén, Gunilla Kreiss, and Dietmar Rempfer. In *Computers & Fluids*, volume 39, pp 926-935, 2010.

## Conference proceedings (ed)

1. [Numerical Mathematics and Advanced Applications: 2009](#). Gunilla Kreiss, Per Lötstedt, Axel Målqvist, and Maya Neytcheva (eds). Springer-Verlag, Berlin, 2010.

## Conference papers

1. [Energy stability of the MUSCL scheme](#). Qaisar Abbas, Edwin van der Weide, and Jan Nordström. In *Numerical Mathematics and Advanced Applications: 2009*, pp 61-68, Springer-Verlag, Berlin, 2010.
2. [An additive matrix preconditioning method with application for domain decomposition and two-level matrix partitionings](#). Owe Axelsson. In *Large-Scale Scientific Computing*, volume 5910 of Lecture Notes in Computer Science, pp 76-83, Springer-Verlag, Berlin, 2010.
3. [Stable perfectly matched layers for the Schrödinger equations](#). Kenneth Duru and Gunilla Kreiss. In *Numerical Mathematics and Advanced Applications: 2009*, pp 287-295, Springer-Verlag, Berlin, 2010.
4. [Simulations of acoustic waves in a turbo-fan engine air intake](#). Gunilla Efraimsson, Nicolas Forsberg, and Jan Nordström. In *Proc. 16th AIAA/CEAS Aeroacoustics Conference*, volume 2010-3999 of Conference Proceeding Series, AIAA, 2010.
5. [Generic finite element programming for massively parallel flow simulations](#). Timo Heister, Martin Kronbichler, and Wolfgang Bangerth. In *Proc. ECCOMAS CFD Conference 2010*, p 10, Tech. Univ. Lisbon, Portugal, 2010.
6. [Massively parallel finite element programming](#). Timo Heister, Martin Kronbichler, and Wolfgang Bangerth. In *Recent Advances in the Message Passing Interface*, volume 6305 of Lecture Notes in Computer Science, pp 122-131, Springer-Verlag, Berlin, 2010.
7. [Numerical methods for uncertainty propagation in high speed flows](#). Gianluca Iaccarino, Per Pettersson, Jan Nordström, and Jeroen Witteveen. In *Proc. ECCOMAS CFD Conference 2010*, p 11, Tech. Univ. Lisbon, Portugal, 2010.
8. [Error control for simulations of a dissociative quantum system](#). Katharina Kormann and Anna Nissen. In *Numerical Mathematics*

- and *Advanced Applications: 2009*, pp 523-531, Springer-Verlag, Berlin, 2010.
9. [The Effect of Reynolds Number in High Order Accurate Calculations with Shock Diffraction](#). Craig Law, Qaisar Abbas, Jan Nordström, and Beric W. Skews. In *Proc. 7th South African Conference on Computational and Applied Mechanics*, pp 78:1-8, South African Association for Theoretical and Applied Mechanics, 2010.
  10. [A stable and high order interface procedure for conjugate heat transfer problems](#). Jens Lindström and Jan Nordström. In *Numerical Mathematics and Advanced Applications: 2009*, pp 599-607, Springer-Verlag, Berlin, 2010.
  11. [Element-by-element Schur complement approximations for general nonsymmetric matrices of two-by-two block form](#). Maya Neytcheva, Minh Do-Quang, and Xin He. In *Large-Scale Scientific Computing*, volume 5910 of Lecture Notes in Computer Science, pp 108-115, Springer-Verlag, Berlin, 2010.
  12. [Efficiency of shock capturing schemes for Burgers' equation with boundary uncertainty](#). Per Pettersson, Qaisar Abbas, Gianluca Iaccarino, and Jan Nordström. In *Numerical Mathematics and Advanced Applications: 2009*, pp 737-745, Springer-Verlag, Berlin, 2010.

## Computational Science (Tillämpad beräkningsvetenskap)

### Chapters in book

1. [Threshold Concepts in Computer Science: an ongoing empirical investigation](#). Lynda Thomas, Jonas Boustedt, Anna Eckerdal, Robert McCartney, Jan Erik Moström, Kate Sanders, and Carol Zander. In *Threshold Concepts and Transformational Learning*, pp 241-258, Sense Publishers, Rotterdam, The Netherlands, 2010.

### Articles in journal

1. [The next-generation ARC middleware](#). Owen Appleton, David Cameron, Jozef Cernák, Péter Dóbe, Mattias Ellert, Thomas Frågåt, Michael Grønager, Daniel Johansson, Johan Jönemo, Josva Kleist, Marek Kocan, Aleksandr Konstantinov, Balázs Kónya, Iván Márton, Bjarthe Mohn, Steffen Möller, Henning Müller, Zsombor Nagy, Jon K. Nilsen, Farid Ould-Saada, Katarina Pajchel, Weizhong Qiang, Alexander Read, Peter Rosendahl, Gábor Róczy, Martin Savko, Martin Skou Andersen, Oxana Smirnova, Péter Stefán, Ferenc Szalai, Adrian Taga, Salman Z. Toor, Anders Wäänänen, and Xin Zhou. In *Annales des télécommunications*, volume 65, pp 771-776, 2010.
2. [CellMC: a multiplatform model compiler for the Cell Broadband Engine and x86](#). Emmet Caulfield and Andreas Hellander. In *Bioinformatics*, volume 26, pp 426-428, 2010.
3. [A Fourier-coefficient based solution of an optimal control problem in quantum chemistry](#). Katharina Kormann, Sverker Holmgren, and Hans O. Karlsson. In *Journal of Optimization Theory and Applications*, volume 147, pp 491-506, 2010.
4. [Efficient algorithms for multidimensional global optimization in genetic mapping of complex traits](#). Kajsa Ljungberg, Kateryna Mishchenko, and Sverker Holmgren. In *Advances and Applications in Bioinformatics and Chemistry*, volume 3, pp 75-88, 2010.
5. [Assessing a multiple QTL search using the variance component model](#). Kateryna Mishchenko, Lars Rönnegård, Sverker Holmgren,

and Volodymyr Mishchenko. In *Computational biology and chemistry (Print)*, volume 34, pp 34-41, 2010.

## Conference proceedings (ed)

1. [Numerical Mathematics and Advanced Applications: 2009](#). Gunilla Kreiss, Per Lötstedt, Axel Målqvist, and Maya Neytcheva (eds). Springer-Verlag, Berlin, 2010.

## Conference papers

1. [An implementation framework for solving high-dimensional PDEs on massively parallel computers](#). Magnus Gustafsson and Sverker Holmgren. In *Numerical Mathematics and Advanced Applications: 2009*, pp 417-424, Springer-Verlag, Berlin, 2010.
2. [Communication-efficient Krylov methods for exponential integration in quantum dynamics](#). Magnus Gustafsson, Katharina Kormann, and Sverker Holmgren. PARA 2010: State of the Art in Scientific and Parallel Computing (), University of Iceland, Reykjavík, 2010.
3. [Implementing Monte Carlo electrostatics simulations on heterogeneous multicore architectures](#). Marcus Holm, Sverker Holmgren, and Malek Khan. PARA 2010: State of the Art in Scientific and Parallel Computing (), University of Iceland, Reykjavík, 2010.
4. [A Grid-Enabled Problem Solving Environment for QTL Analysis in R](#). Mahen Jayawardena, Carl Nettelblad, Salman Toor, Per-Olov Ostberg, Erik Elmroth, and Sverker Holmgren. In *Proc. 2nd International Conference on Bioinformatics and Computational Biology*, pp 202-209, ISCA, Cary, NC, 2010.
5. [Error control for simulations of a dissociative quantum system](#). Katharina Kormann and Anna Nissen. In *Numerical Mathematics and Advanced Applications: 2009*, pp 523-531, Springer-Verlag, Berlin, 2010.
6. [Computing students learning computing informally](#). Robert McCartney, Anna Eckerdal, Jan Erik Moström, Kate Sanders, Lynda Thomas, and Carol Zander. In *Proc. 10th International Conference on Computing Education Research: Koli Calling*, pp 43-48, ACM Press, New York, 2010.
7. [Chelonia — a self-healing storage cloud](#). Jon K. Nilsen, Salman Toor, Zsombor Nagy, and Bjarte Mohn. In *Proc. 9th Cracow Grid Workshop*, pp 5-12, ACC Cyfronet AGH, Kraków, Poland, 2010.
8. [Harnessing Surprise: Tales from students' transformational biographies](#). Lynda Thomas, Carol Zander, and Anna Eckerdal. In *Proc. 41st ACM Technical Symposium on Computer Science Education*, pp 300-304, ACM Press, New York, 2010.
9. [An efficient task-based approach for solving the  \$n\$ -body problem on multicore architectures](#). Martin Tillenius and Elisabeth Larsson. PARA 2010: State of the Art in Scientific and Parallel Computing (), University of Iceland, Reykjavík, 2010.
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