

## Technical reports from the Department of Information Technology

The following is an index of the Technical Report series from the Department of Information Technology at Uppsala University. This series has ISSN 1404-3203 (ISSN 1404-0603 up to and including nr 1999-006). The reports can be ordered from the Department of Information Technology, Uppsala University, Box 337, SE-751 05 Uppsala, Sweden. Most of them are also available electronically from <http://www.it.uu.se/research/publications/reports/>.

- [2024-001] Thom Kunkeler and Aletta Nylén. *Supplement - Capital in Computing Education: Investigating Factors Underlying Participation*. March 2024.
- [2023-003] Torsten Söderström. *Relations Between Prediction Error and Maximum Likelihood Methods in an Error-in-Variables Setting. Extended version with full proofs*. October 2023.
- [2023-002] Ginevra Castellano, Gunilla Kreiss, Robin Strand and Lina von Sydow. *Using gender equality indicators to support gender mainstreaming work at the Department of Information Technology*. April 2023.
- [2023-001] Ivo Dravins and Maya Neytcheva. *Preconditioning of Discrete State- and Control-Constrained Optimal Control Convection-Diffusion Problems*. February 2023. This is an extensively updated version of Technical Report nr 2021-003.
- [2022-009] Torsten Söderström and Umberto Soverini. *Analyzing the Parameter Bias when an ARMAX Model is Fitted to Noise-Corrupted Data*. October 2022.
- [2022-008] Torsten Söderström and Umberto Soverini. *Analyzing the Parameter Bias when an Instrumental Variable Method is Used with Noise-Corrupted Data*. October 2022.
- [2022-007] Gustaf Borgström, Christian Rohner and David Black-Schaffer. *Faster Functional Warming with Cache Merging*. August 2022. Updated 2022-09-07, correcting spelling errors.
- [2022-006] Ruoqi Zhang, Per Mattsson and Torbjörn Wigren. *A Robust Multi-Goal Exploration Aided Tracking Policy*. June 2022.
- [2022-005] Camille Clouard and Carl Nettelblad. *Consistency Study of a Reconstructed Genotype Probability Distribution via Clustered Bootstrapping in NORB Pooling Blocks*. June 2022.
- [2022-004] Owe Axelsson, Ivo Dravins and Maya Neytcheva. *Stage-Parallel Preconditioners for Implicit Runge-Kutta Methods of Arbitrary High Order. Linear problems*. April 2022.

- [2022-003] Ken Mattsson and Ylva Ljungberg Rydin. *Implicit Summation by Parts Operators for Finite Difference Approximations of First and Second Derivatives*. January 2022.
- [2022-002] Torbjörn Wigren. *MATLAB Software for Nonlinear and Delayed Recursive Identification - Revision 2*. January 2022. Revised version of nr 2017-007. The software package (last updated 2022-09-12) can be downloaded from <https://www.it.uu.se/research/publications/reports/2022-002/RecursiveNonlinearNetworkedIdentificationSW-r3.zip>.
- [2022-001] Diane Golay and Åsa Cajander. *Sjuksköterskors upplevelse av att jobba med IT-system: sammanfattning*. January 2022. In Swedish.
- [2021-008] Torbjörn Wigren. *MATLAB Software for Recursive Identification and Scaling Using a Structured Nonlinear Black-box Model - Revision 7*. December 2021. Revised version of nr 2010-022. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2021-008/NRISSoftwareRev7.zip>.
- [2021-007] Giovanni Barbarino, Melker Claesson, Sven-Erik Ekström, Carlo Garoni, David Meadon and Hendrik Speleers. *Matrix-Less Eigensolver for Large Structured Matrices*. November 2021. Updated version of nr 2021-005.
- [2021-006] Torsten Söderström and Umberto Soverini. *When are Errors-in-Variables Aspects Particularly Important to Consider in System Identification?* September 2021.
- [2021-005] Giovanni Barbarino, Melker Claesson, Sven-Erik Ekström, Carlo Garoni and David Meadon. *Matrix-Less Eigensolver for Large Structured Matrices*. August 2021. Updated 2021-09-03 and 2021-09-08.
- [2021-004] Minna Salminen Karlsson. *IT-system i sjuksköterskors arbetsmiljö. Att tänka på vid upphandling och införande*. April 2021. In Swedish.
- [2021-003] Ivo Dravins and Maya Neytcheva. *On the Numerical Solution of State- and Control-Constrained Optimal Control Problems*. April 2021.
- [2021-002] Rafael Diaz Fuentes, Mariarosa Mazza and Stefano Serra-Capizzano. *A  $\omega$ -Circulant Regularization for Linear Systems Arising in Interpolation with Subdivision Schemes*. March 2021.
- [2021-001] Arve Gengelbach and Johannes Åman Pohjola. *Towards Correctly Checking for Cycles in Overloaded Definitions*. March 2021.
- [2020-004] Malin Källén, Sverker Holmgren and Ebba Thora Hvannberg. *Impact of Code Refactoring using Object-Oriented Methodology on a Scientific Computing Application*. October 2020.
- [2020-003] Sven-Erik Ekström, Carlo Garoni, Adam Jozefiak and Jesse Perla. *Eigenvalues and Eigenvectors of Tau Matrices with Applications to Markov Processes and Economics*. August 2020.

- [2020-002] Owe Axelsson, Michal Bérés and Radim Blaheta. *A Boundary Optimal Control Identification Problem*. May 2020.
- [2020-001] Åsa Cajander, Marta Larusdottir and Gustaf Hedström. *Digital arbetsmiljö och projektet Nära vård online*. March 2020.
- [2019-011] Pietro Benedusi, Paola Ferrari, Carlo Garoni, Rolf Krause and Stefano Serra-Capizzano. *Fast Parallel Solver for the Space-Time IgA-DG Discretization of the Anisotropic Diffusion Equation*. November 2019.
- [2019-010] Umberto Soverini and Torsten Söderström. *The Frisch Scheme: Time and Frequency Domain Aspects*. November 2019.
- [2019-009] Kristiina Ausmees. *Evaluation of Methods Handling Missing Data in PCA on Genotype Data: Applications for Ancient DNA*. October 2019.
- [2019-008] Kristiina Ausmees, Federico Sanchez-Quinto, Mattias Jakobsson and Carl Nettelblad. *An Empirical Evaluation of Genotype Imputation of Ancient DNA*. October 2019.
- [2019-007] Malin Källén and Tobias Wrigstad. *Performance of an OO Compute Kernel on the JVM: Revisiting Java as a Language for Scientific Computing Applications (Extended Version)*. September 2019.
- [2019-006] Umberto Soverini and Torsten Söderström. *Frequency Domain Identification of FIR Models from Noisy Input-Output Data*. August 2019.
- [2019-005] Giovanni Barbarino, Carlo Garoni and Stefano Serra-Capizzano. *Block Generalized Locally Toeplitz Sequences: Theory and Applications in the Multidimensional Case*. July 2019.
- [2019-004] Giovanni Barbarino, Carlo Garoni and Stefano Serra-Capizzano. *Block Generalized Locally Toeplitz Sequences: Theory and Applications in the Unidimensional Case*. July 2019.
- [2019-003] Ricardo Alves, Stefanos Kaxiras and David Black-Schaffer. *Minimizing Replay under Way-Prediction*. May 2019. This paper is an extension of another paper published in ICCD 2018 “Dynamically Disabling Way-prediction to Reduce Instruction Replay”.
- [2019-002] C. Garoni and S. Serra-Capizzano. *Block Generalized Locally Toeplitz Sequences: Theory and Applications*. April 2019.
- [2018-014] Nikos Nikoleris, Erik Hagersten and Trevor E. Carlson. *Delorean: Virtualized Directed Profiling for Cache Modeling in Sampled Simulation*. December 2018.
- [2018-013] Stanislav Morozov, Stefano Serra-Capizzano and Eugene Tyrtyshnikov. *How to Extend the Application Scope of GLT-Sequences*. November 2018.

- [2018-012] Sven-Erik Ekström and Stefano Serra-Capizzano. *Eigenvalue Isogeometric Approximations Based on B-splines: Tools and Results*. July 2018.
- [2018-011] Tatiana Chistiakova, Per Mattsson, Bengt Carlsson and Torbjörn Wigren. *Nonlinear System Identification of the Dissolved Oxygen to Effluent Ammonium Dynamics in an Activated Sludge Process*. June 2018.
- [2018-010] Owe Axelsson and Maya Neytcheva. *Preconditioners for Two-by-Two Block Matrices with Square Blocks*. May 2018.
- [2018-009] Carlo Garoni, Mariarosa Mazza and Stefano Serra-Capizzano. *Block Generalized Locally Toeplitz Sequences: From the Theory to the Applications*. May 2018.
- [2018-008] Owe Axelsson, Maya Neytcheva and Anders Ström. *An Efficient Preconditioning Method for State Box-Constrained Optimal Control Problems*. March 2018. This is a major revision of Technical Report 2017-004. In the new version all the numerical experiments have been rerun with new much more efficient dynamic stopping criteria.
- [2018-007] Umberto Soverini and Torsten Söderström. *Identification of Two Dimensional Complex Sinusoids in White Noise: a State-Space Frequency Approach*. April 2018. Updated version of Technical Report 2017-021.
- [2018-006] Umberto Soverini and Torsten Söderström. *2D-Frequency Domain Identification of Complex Sinusoids in the Presence of Additive Noise*. April 2018. Updated version of Technical Report 2017-020.
- [2018-005] Sven-Erik Ekström, Isabella Furci and Stefano Serra-Capizzano. *Exact Formulae and Matrix-Less Eigensolvers for Block Banded Symmetric Toeplitz Matrices*. March 2018.
- [2018-004] Giovanni Barbarino and Stefano Serra-Capizzano. *Non-Hermitian Perturbations of Hermitian Matrix-Sequences and Applications to the Spectral Analysis of Approximated PDEs*. February 2018.
- [2018-003] Jonatan Lindén and Bengt Jonsson. *A Skiplist-Based Concurrent Priority Queue with Minimal Memory Contention*. February 2018. Revised and corrected version of Technical Report 2013-025.
- [2018-002] Pietro Benedusi, Carlo Garoni, Rolf Krause, Xiaozhou Li and Stefano Serra-Capizzano. *Discontinuous Galerkin Discretization of the Heat Equation in Any Dimension: the Spectral Symbol*. January 2018.
- [2018-001] Carlo Garoni, Stefano Serra-Capizzano and Debora Sesana. *The Theory of Block Generalized Locally Toeplitz Sequences*. January 2018. Updated 2018-01-30.

- [2017-024] Torbjörn Wigren and Maarten Schoukens. *Coupled Electric Drives Data Set and Reference Models*. November 2017. The data set can be downloaded from <http://www.it.uu.se/research/publications/reports/2017-024/CoupledElectricDrivesDataSetAndReferenceModels.zip>.
- [2017-023] Kim-Anh Tran, Alexandra Jimborean, Trevor E. Carlson, Magnus Själander, Konstantinos Koukos and Stefanos Kaxiras. *Transcending Hardware Limits with Software Out-Of-Order Execution*. October 2017.
- [2017-022] Ali Dorostkar. *Function-Based Algebraic Multigrid Method for the 3D Poisson Problem on Structured Meshes*. October 2017. Updated 2017-10-26.
- [2017-021] Umberto Soverini and Torsten Söderström. *Identification of Two Dimensional Complex Sinusoids in White Noise: a State-Space Frequency Approach*. October 2017. Updated by Technical Report 2018-007, April 2018. See <http://www.it.uu.se/research/publications/reports/2018-007>.
- [2017-020] Umberto Soverini and Torsten Söderström. *2D-Frequency Domain Identification of Complex Sinusoids in the Presence of Additive Noise*. October 2017. Updated by Technical Report 2018-006, April 2018. See <http://www.it.uu.se/research/publications/reports/2018-006>.
- [2017-019] Zhouyang Ge, Hanna Holmgren, Martin Kronbichler, Luca Brandt and Gunilla Kreiss. *Effective Slip Over Partially Filled Microcavities and its Possible Failure*. September 2017.
- [2017-018] Antonio Cicone, Carlo Garoni and Stefano Serra-Capizzano. *Spectral and Convergence Analysis of the Discrete ALIF Method*. September 2017.
- [2017-017] Owe Axelsson, Zhao-Zheng Liang and Maya Neytcheva. *Parallel Solution Methods and Preconditioners for Evolution Equations*. September 2017.
- [2017-016] Sven-Erik Ekström, Isabella Furci and Stefano Serra-Capizzano. *Are the Eigenvalues of the B-spline IgA Approximation of  $-\Delta u = \lambda u$  Known in Almost Closed Form?* August 2017.
- [2017-015] Sven-Erik Ekström and Carlo Garoni. *An Interpolation-Extrapolation Algorithm for Computing the Eigenvalues of Preconditioned Banded Symmetric Toeplitz Matrices*. August 2017.
- [2017-014] Zhao-Zheng Liang, Owe Axelsson and Maya Neytcheva. *A Robust Structured Preconditioner for Time-Harmonic Parabolic Optimal Control Problems*. August 2017.
- [2017-013] Davide Bianchi and Stefano Serra-Capizzano. *Spectral Analysis of Finite-Difference Approximations of  $1 - d$  Waves in Non-Uniform Grids*. July 2017.

- [2017-012] Fayyaz Ahmad, Eman Salem Al-Aidarous, Dina Abdullah Alrehaili, Sven-Erik Ekström, Isabella Furci and Stefano Serra-Capizzano. *Are the Eigenvalues of Preconditioned Banded Symmetric Toeplitz Matrices Known in Almost Closed Form?* June 2017.
- [2017-011] Sholeh Yasini and Torbjörn Wigren. *Parametric Convergence Analysis of an Adaptive Filtering Algorithm with Output Quantization.* June 2017.
- [2017-010] Sven-Erik Ekström and Stefano Serra-Capizzano. *Eigenvalues and Eigenvectors of Banded Toeplitz Matrices and the Related Symbols.* May 2017.
- [2017-009] Mariarosa Mazza, Ahmed Ratnani and Stefano Serra-Capizzano. *Spectral Analysis and Spectral Symbol for the 2D curl-curl (Stabilized) Operator with Applications to the Related Iterative Solutions.* April 2017.
- [2017-008] Mahdad Davari, Erik Hagersten and Stefanos Kaxiras. *Scope-Aware Classification: Taking the Hierarchical Private/Shared Data Classification to the Next Level.* April 2017.
- [2017-007] Torbjörn Wigren. *MATLAB Software for Nonlinear and Delayed Recursive Identification - Revision 1.* April 2017. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2017-007/RecursiveNonlinearNetworkedIdentificationSW.zip>.
- [2017-006] Karl Ljungkvist and Martin Kronbichler. *Multigrid for Matrix-Free Finite Element Computations on Graphics Processors.* April 2017. Updated 2017-04-20.
- [2017-005] Saleh Rezaeiravesh and Mattias Liefvendahl. *Grid Construction Strategies for Wall-Resolving Large Eddy Simulation and Estimates of the Resulting Number of Grid Points.* April 2017.
- [2017-004] Owe Axelsson, Maya Neytcheva and Anders Ström. *An Efficient Preconditioning Method for State Box-Constrained Optimal Control Problems.* March 2017. Updated 2017-04-12. A major revision appears in Technical Report 2018-008, see <http://www.it.uu.se/research/publications/reports/2018-008>.
- [2017-003] Pavol Bauer and Stefan Engblom. *The URDME manual Version 1.3.* March 2017.
- [2017-002] C. Garoni and S. Serra-Capizzano. *Generalized Locally Toeplitz Sequences: Theory and Applications.* February 2017.
- [2017-001] Mattias Liefvendahl, Timofey Mukha and Saleh Rezaeiravesh. *Formulation of a Wall Model for LES in a Collocated Finite-Volume Framework.* January 2017.
- [2016-017] S.-E. Ekström and S. Serra-Capizzano. *Eigenvalues of Banded Symmetric Toeplitz Matrices are Known Almost in Close Form?* September 2016.

- [2016-016] Torsten Söderström and Umberto Soverini. *Errors-in-Variables Identification using Maximum Likelihood Estimation in the Frequency Domain*. September 2016.
- [2016-015] Afshin Zafari, Elisabeth Larsson, Marco Righero, M. Alessandro Francavilla, Giorgio Giordanengo, Francesca Vipiana and Giuseppe Vecchi. *Task Parallel Implementation of a Solver for Electromagnetic Scattering Problems*. August 2016.
- [2016-014] Vasilis Spiliopoulos, Andreas Sembrant, Georgios Keramidas, Erik Hagersten and Stefanos Kaxiras. *A Unified DVFS-Cache Resizing Framework*. August 2016.
- [2016-013] Elias Castegren and Tobias Wrigstad. *LOLCAT: Relaxed Linear References for Lock-free Programming*. July 2016.
- [2016-012] Marco Donatelli, Paola Novara, Lucia Romani, Stefano Serra-Capizzano and Debora Sesana. *Surface Subdivision Algorithms and Structured Linear Algebra: a Computational Approach to Determine Bounds of Extraordinary Rule Weights*. July 2016.
- [2016-011] Ken Mattsson. *Diagonal-Norm Upwind SBP Operators*. June 2016.
- [2016-010] Afshin Zafari, Elisabeth Larsson and Martin Tillenius. *DuctTeip: A Task-Based Parallel Programming Framework for Distributed Memory Architectures*. June 2016.
- [2016-009] Andreas Svensson. *On the Role of Monte Carlo Methods in Swedish M. Sc. Engineering Education*. May 2016.
- [2016-008] Andreas Svensson and Thomas B. Schön. *Comparing Two Recent Particle Filter Implementations of Bayesian System Identification*. May 2016.
- [2016-007] Elias Castegren and Tobias Wrigstad. *Reference Capabilities for Trait Based Reuse and Concurrency Control*. May 2016. Extended version of *Reference Capabilities for Concurrency Control*, ECOOP 2016..
- [2016-006] Josefin Ahlkrona. *The ISCAL method and the Grounding Line - Combining the Stokes equations with the Shallow Ice Approximation and Shelfy Stream Approximation*. April 2016.
- [2016-005] Josefin Ahlkrona and Victor Shcherbakov. *A Meshfree Approach to Non-Newtonian Free Surface Ice Flow: Application to the Haut Glacier d Arolla*. April 2016.
- [2016-004] Nikos Nikoleris, Andreas Sandberg, Erik Hagersten and Trevor E. Carlson. *Implementing Fast, Virtualized Profiling to Eliminate Cache Warming*. March 2016.
- [2016-003] Torbjörn Wigren. *A Tradeoff Between Data Rate and Regulation Performance in Networked Data Flow Control*. January 2016.

- [2016-002] Stefan Pålsson and Björn Victor. *Proceedings från 5:e Utvecklingskonferensen för Sveriges ingenjörsutbildningar*. February 2016. In Swedish.
- [2016-001] Marco Donatelli, Ali Dorostkar, Mariarosa Mazza, Maya Neytcheva and Stefano Serra-Capizzano. *A Block Multigrid Strategy for Two-Dimensional Coupled PDEs*. January 2016.
- [2015-038] Sven-Olof Nyström. *Subtyping and Algebraic Data Types*. December 2015.
- [2015-037] Muneeb Khan, David Black-Schaffer and Erik Hagersten. *Perf-Insight: A Simple, Scalable Approach to Optimal Data Prefetching in Multicores*. December 2015.
- [2015-036] Owe Axelsson, Shiraz Farouq and Maya Neytcheva. *A Preconditioner for Optimal Control Problems, Constrained by Stokes Equation with a Time-Harmonic Control*. December 2015.
- [2015-035] Johan Öfverstedt and Per Normann. *Deterministic Parallel Graph Coloring with Repartitioning by Auxiliary Graph Coloring*. December 2015.
- [2015-034] Adriaan Larmuseau, Marco Patrignani and Dave Clarke. *Implementing a Secure Abstract Machine – Extended Version*. November 2015. This technical report serves as the companion report to a SEC@SAC 2016 paper of the same name.
- [2015-033] Volkan Cambazoglu, Ramūnas Gutkovas, Johannes Åman Pohjola and Björn Victor. *Modelling and Analysing a WSN Secure Aggregation Protocol: A Comparison of Languages and Tool Support*. November 2015. Updated 2015-12-02: The results in subsection 4.1.3 are updated because we realised that Pwb can evaluate the SHIA model faster for network sizes of 2 and 4, and also can handle network size of 8.
- [2015-032] Sofia Cassel, Falk Howar, Bengt Jonsson and Bernhard Steffen. *Active Learning for Extended Finite State Machines*. October 2015. This report updates and supercedes Technical Report 2015-004.
- [2015-031] Per Normann and Johan Öfverstedt. *Deterministic Parallel Graph Coloring with Symmetry Breaking*. October 2015.
- [2015-030] Owe Axelsson, Shiraz Farouq and Maya Neytcheva. *Comparison of preconditioned Krylov subspace iteration methods for PDE-constrained optimization problems. Stokes control*. September 2015.
- [2015-029] Nanna Kjellin Lagerqvist. *Resultat och reflektioner kring mailkategorisering av användares mail till Uppsala läns landsting kring åtkomst av journaler via nätet*. September 2015. In Swedish. Updates and supercedes Technical Report nr 2015-010.



- [2015-028] Adriaan Larmuseau, Marco Patrignani and Dave Clarke. *A Secure Compiler for ML Modules - Extended Version*. September 2015. This technical report is an updated version of TR 2015-017 that serves as the companion report to an APLAS 2015 paper of the same title.
- [2015-027] Umberto Soverini and Torsten Söderström. *Frequency Domain Identification of Autoregressive Models in the Presence of Additive Noise*. September 2015.
- [2015-026] Adriaan Larmuseau and Dave Clarke. *Modelling an Assembly Attacker by Reflection*. August 2015. This technical report is an extended version of a paper titled: *A High-Level Model for an Assembly Language Attacker by means of Reflection* that is to appear at SETTA 2015.
- [2015-025] Fritjof Fagerlund, Fredrik Hellman, Axel Målqvist and Auli Niemi. *Improved Monte Carlo Methods for Computing Failure Probabilities of Porous Media Flow Systems*. August 2015.
- [2015-024] Owe Axelsson, Shiraz Farouq and Maya Neytcheva. *Comparison of Preconditioned Krylov Subspace Iteration Methods for PDE-Constrained Optimization Problems. Poisson and Convection-Diffusion Control*. August 2015.
- [2015-023] Carlo Garoni and Stefano Serra-Capizzano. *The theory of Generalized Locally Toeplitz sequences: a review, an extension, and a few representative applications*. August 2015. Revised, corrected, updated and extended version of TR 2015-016.
- [2015-022] Tomas Wilkinson and Anders Brun. *Experiments on Large Scale Document Visualization using Image-based Word Clouds*. July 2015.
- [2015-021] Joachim Parrow, Johannes Borgström, Lars-Henrik Eriksson, Ramūnas Gutkovas and Tjark Weber. *Modal Logics for Nominal Transition Systems*. June 2015. Accepted for CONCUR 2015. This version includes proofs in an appendix.
- [2015-020] Per Normann and Johan Öfverstedt. *Deterministic Parallel Graph Coloring with Hashing*. June 2015.
- [2015-019] Andreas Svensson, Thomas B Schön and Manon Kok. *Some Details on State Space Smoothing using the Conditional Particle Filter*. June 2015.
- [2015-018] Johannes Nygren, Torbjörn Wigren and Kristiaan Pelckmans. *Delay-Independent Stability Criteria for Networked Control Systems*. June 2015.
- [2015-017] Adriaan Larmuseau, Marco Patrignani and Dave Clarke. *A Secure Compiler for ML Modules - Extended Version*. June 2015.
- [2015-016] Carlo Garoni and Stefano Serra-Capizzano. *Generalized Locally Toeplitz sequences: a review and an extension*. May 2015. Revised, corrected, updated and extended by TR 2015-023 (<http://www.it.uu.se/research/publications/reports/2015-023>).

- [2015-015] Adriaan Larmuseau and Dave Clarke. *Formalizing a Secure Foreign Function Interface - Extended Version*. May 2015. This technical report is an extended version of the paper of the same name that is to appear at SEFM 2015.
- [2015-014] Timofey Mukha and Mattias Liefvendahl. *Large-Eddy Simulation of Turbulent Channel Flow*. May 2015.
- [2015-013] Torbjörn Wigren. *Constraints in nonlinear  $\mathcal{L}_2$ -stable networked control*. May 2015.
- [2015-012] Carlo Garoni, Carla Manni, Stefano Serra-Capizzano, Debora Sesana and Hendrik Speleers. *Lusin Theorem, GLT Sequences and Matrix Computations: An Application to the Spectral Analysis of PDE Discretization Matrices*. March 2015.
- [2015-011] Ali Dorostkar, Maya Neytcheva and Stefano Serra-Capizzano. *Schur Complement Matrix and its (Elementwise) Approximation: A Spectral Analysis Based on GLT Sequences*. March 2015.
- [2015-010] Nanna Kjellin Lagerqvist. *Resultat och reflektioner kring mailkategorisering av användares mail till Uppsala läns landsting kring åtkomst av journaler via nätet*. March 2015. In Swedish. Updated and superceded by Technical Report nr 2015-029.
- [2015-009] Emilie Blanc. *Approximation of the Diffusive Representation by Decreasing Exponential Functions*. February 2015.
- [2015-008] Ali Dorostkar, Maya Neytcheva and Stefano Serra-Capizzano. *Spectral Analysis of Coupled PDEs and of their Schur Complements via the Notion of Generalized Locally Toeplitz Sequences*. February 2015.
- [2015-007] Aletta Nylén and Mohamed Shenify. *Proceedings from the 1st Albaha University–Uppsala University Collaborative Symposium on Quality in Computing Education*. February 2015.
- [2015-006] Farshid Besharati, Mahdad Davari, Christian Danheimer Furedal, Björn Forsberg, Niklas Forsmark, Henrik Grandin, Jimmy Gunnarsson, Engla Ling, Marcus Lofvars, Sven Lundgren, Luis Mauricio, Erik Norgren, Magnus Norgren, Johan Risch, Christos Sakalis and Stefanos Kaxiras. *The EVI Distributed Shared Memory System*. February 2015.
- [2015-005] Carlo Garoni, Carla Manni, Stefano Serra-Capizzano, Debora Sesana and Hendrik Speleers. *Spectral Analysis and Spectral Symbol of Matrices in Isogeometric Galerkin Methods*. January 2015.
- [2015-004] Sofia Cassel, Falk Howar, Bengt Jonsson and Bernhard Steffen. *Learning Extended Finite State Machines (extended version)*. February 2015. Updated and superceded by Technical Report 2015-032.
- [2015-003] Ali Dorostkar, Maya Neytcheva and Björn Lund. *On Some Block-Preconditioners for Saddle Point Systems and their CPU-GPU Performance*. January 2015.

- [2015-002] Marco Donatelli, Mariarosa Mazza and Stefano Serra-Capizzano. *Spectral Analysis and Structure Preserving Preconditioners for Fractional Diffusion Equations*. January 2015.
- [2015-001] Victor Shcherbakov and Elisabeth Larsson. *Radial Basis Function Partition of Unity Methods for Pricing Vanilla Basket Options*. January 2015.
- [2014-024] Stefano Serra-Capizzano. *Toeplitz Matrices: Spectral Properties and Preconditioning in the CG Method*. December 2014.
- [2014-023] Venkatraman Iyer, Frederik Hermans and Thiemo Voigt. *Detecting and Avoiding Multiple Sources of Interference in the 2.4 GHz Spectrum*. December 2014.
- [2014-022] Carlo Garoni, Stefano Serra-Capizzano and Paris Vassalos. *Tools for Determining the Asymptotic Spectral Distribution of Hermitian Matrix-Sequences and Applications*. December 2014.
- [2014-021] Carlo Garoni, Stefano Serra-Capizzano and Debora Sesana. *Spectral Analysis and Spectral Symbol of  $d$ -variate  $\mathbb{Q}_p$  Lagrangian FEM Stiffness Matrices*. November 2014.
- [2014-020] Magnus Grandin and Sverker Holmgren. *Parallel Data Structures and Algorithms for High-Dimensional Structured Adaptive Mesh Refinement*. October 2014.
- [2014-019] Magnus Grandin. *Data Structures and Algorithms for High-Dimensional Structured Adaptive Mesh Refinement*. October 2014.
- [2014-018] Olov Rosén and Alexander Medvedev. *Parallelization of the Particle Filter via Series Expansions*. August 2014.
- [2014-017] David R. Cok, Aaron Stump and Tjark Weber. *The 2013 SMT Evaluation*. July 2014.
- [2014-016] Torbjörn Wigren. *Identifiability and Limit Cycles*. May 2014.
- [2014-015] Sven-Olof Nyström. *Subtyping, consistency and derivability*. May 2014.
- [2014-014] Torbjörn Wigren. *MATLAB Software for Identification of Nonlinear Autonomous Systems - Revision 1*. April 2014. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2014-014/SWAutonomous.zip>.
- [2014-013] Thomas Lind, Åsa Cajander and Bengt Sandblad. *Införandet av Rindance Bokföringsportal vid Uppsala universitet - En kortfattad rapport från KiA-projektet*. April 2014. In Swedish.
- [2014-012] Per Lötstedt and Lina Meinecke. *Simulation of Stochastic Diffusion via First Exit Times*. April 2014.

- [2014-011] Martin Tillenius, Elisabeth Larsson, Erik Lehto and Natasha Flyer. *A Task Parallel Implementation of an RBF-generated Finite Difference Method for the Shallow Water Equations on the Sphere*. April 2014.
- [2014-010] Martin Tillenius. *SuperGlue: A Shared Memory Framework using Data-Versioning for Dependency-Aware Task-Based Parallelization*. April 2014.
- [2014-009] Torbjörn Wigren. *On a Limitation in Networked Flow Control*. March 2014.
- [2014-008] Torsten Söderström, Roberto Diversi and Umberto Soverini. *A Generalized Instrumental Variable Framework for EIV Identification Methods when the Measurement Noises are Mutually Correlated*. March 2014.
- [2014-007] Ali Dorostkar, Dimitar Lukarski, Björn Lund, Maya Neytcheva, Yvan Notay and Peter Schmidt. *Parallel Performance Study of Block-Preconditioned Iterative Methods on Multicore Computer Systems*. March 2014.
- [2014-006] Lars Josef Höök. *On the Bimodality in an Introductory Programming Course: an Analysis of Student Performance Factors*. March 2014.
- [2014-005] Andreas Sandberg, Erik Hagersten and David Black-Schaffer. *Full Speed Ahead: Detailed Architectural Simulation at Near-Native Speed*. March 2014.
- [2014-004] Emil Kieri. *Stiff Convergence of Force-Gradient Operator Splitting Methods*. February 2014.
- [2014-003] Åsa Cajander, Thomas Lind, Gerolf Nauwerck, Britta Nyberg and Bengt Sandblad. *Ekonomiadministratörernas IT-relaterade arbetsmiljö vid Uppsala universitet - En kortfattad rapport från KIA-projektet*. February 2014. In Swedish.
- [2014-002] Peter Hellström. *Problems in the Integration of Timetabling and Train Traffic Control*. January 2014.
- [2014-001] Martin Tillenius, Elisabeth Larsson, Rosa M. Badia and Xavier Martorell. *Resource-Aware Task Scheduling*. January 2014.
- [2013-027] Bengt Sandblad. *Checklista för god arbetsmiljö vid datorstött arbete*. December 2013. In Swedish.
- [2013-026] Sofia Cassel, Falk Howar, Bengt Jonsson, Maik Merten and Bernhard Steffen. *A Succinct Canonical Register Automaton Model*. December 2013. This is an extended version of a paper published in ATVA 2011. The extended version has been accepted for publication in JLAP.
- [2013-025] Jonatan Lindén and Bengt Jonsson. *A Skiplist-Based Concurrent Priority Queue with Minimal Memory Contention*. December 2013. Updated by Technical Report 2018-003, February 2018. See <http://www.it.uu.se/research/publications/reports/2018-003>.

- [2013-024] Thomas Lind, Fredrik Brattlöv, Åsa Cajander, Bengt Sandblad, Bengt Göransson and Anders Jansson. *Förstudierapport: Införande av verksamhetsstödjande IT-system. Problem, effekter och nytta*. December 2013. In Swedish.
- [2013-023] Ali Safdari-Vaighani, Alfa Heryudono and Elisabeth Larsson. *A Radial Basis Function Partition of Unity Collocation Method for Convection-Diffusion Equations*. November 2013.
- [2013-022] Lina Meinecke and Per Lötstedt. *Stochastic Diffusion Processes on Cartesian Meshes*. November 2013.
- [2013-021] Bengt Carlsson and Jesús Zambrano. *Fault Detection and Isolation of Sensors in Aeration Control Systems – the Airflow Ratio Method*. October 2013.
- [2013-020] Dimitar Lukarski and Tobias Skoglund. *A Priori Power Estimation of Linear Solvers on Multi-Core Processors*. September 2013.
- [2013-019] Emil Kieri, Gunilla Kreiss and Olof Runborg. *Coupling of Gaussian Beam and Finite Difference Solvers for Semiclassical Schrödinger Equations*. September 2013.
- [2013-018] Martin Almquist, Ilkka Karasalo and Ken Mattsson. *Atmospheric Sound Propagation over Large-Scale Irregular Terrain*. September 2013.
- [2013-017] T. Söderström and J. Yuz. *Analysing Model Validation Methods for Errors-in-Variables Estimation*. September 2013.
- [2013-016] Ken Mattsson, Martin Almquist and Mark H. Carpenter. *Optimal Diagonal-Norm SBP Operators*. September 2013.
- [2013-015] Olov Rosén and Alexander Medvedev. *Parallel Recursive Bayesian Estimation on Multicore Computational Platforms Using Orthogonal Basis Functions*. August 2013.
- [2013-014] Johannes Åman Pohjola, Johannes Borgström, Joachim Parrow, Palle Raabjerg and Ioana Rodhe. *Negative Premises in Applied Process Calculi*. June 2013.
- [2013-013] Jens Berg and Jan Nordström. *Duality Based Boundary Conditions and Dual Consistent Finite Difference Discretizations of the Navier-Stokes and Euler Equations*. May 2013.
- [2013-012] Mikael Erlandsson and Anders Jansson. *General Domain Properties in Vehicle Operation: A Comparison between Trains and High-Speed Ferries*. May 2013.
- [2013-011] Daniel Elfverson and Axel Målqvist. *Discontinuous Galerkin Multi-scale Methods for Convection Dominated Problems*. May 2013.
- [2013-010] Mark B. Flegg, Stefan Hellander and Radek Erban. *Convergence of Methods for Coupling of Microscopic and Mesoscopic Reaction-Diffusion Simulations*. April 2013.

- [2013-009] Stefan Hellander. *Single Molecule Simulations in Complex Geometries with Embedded Dynamic One-Dimensional Structures*. April 2013.
- [2013-008] Nan Guan, Pontus Ekberg, Martin Stigge and Wang Yi. *Improving the Scheduling of Certifiable Mixed-Criticality Sporadic Task Systems*. April 2013.
- [2013-007] Emil Kieri. *Accelerated Convergence for Schrödinger Equations with Non-Smooth Potentials*. April 2013.
- [2013-006] Torbjörn Wigren and Johan Schoukens. *Data for Benchmarking in Nonlinear System Identification*. March 2013. The data can be downloaded from <http://www.it.uu.se/research/publications/reports/2013-006/SNLA80mVZipped.zip>.
- [2013-005] Owe Axelsson, Maya Neytcheva and Bashir Ahmad. *A Comparison of Iterative Methods to Solve Complex Valued Linear Algebraic Systems*. March 2013.
- [2013-004] Peter Hansbo, Mats G. Larson and Sara Zahedi. *Characteristic Cut Finite Element Methods for Convection-Diffusion Problems on Time Dependent Surfaces*. March 2013.
- [2013-003] Rebecka Janols, Bengt Göransson and Bengt Sandblad. *Slutrapport för Projektet IVAN 2008-2011*. March 2013. In Swedish.
- [2013-002] Rebecka Janols, Bengt Sandblad, Bengt Göransson and Thomas Lind. *Användarnas synpunkter på IT-lösningar i vården - Sammanfattande erfarenheter från utvärderingar vid Landstinget i Uppsala län (2008-2012)*. March 2013. In Swedish. Updated title 2013-03-16.
- [2013-001] Rebecka Janols and Erik Borälv. *Informationssystem i Vården Användbarhet och Nytt (IVAN). Förstudierapport 2008*. January 2013. In Swedish. Updated title 2013-03-16.
- [2012-036] Pavol Bauer, Brian Drawert, Stefan Engblom and Andreas Hellander. *URDME v. 1.2: User's manual*. December 2012. Also available at <http://arxiv.org/abs/0902.2912>.
- [2012-035] Per Pettersson, Gianluca Iaccarino and Jan Nordström. *An Intrusive Hybrid Method for Discontinuous Two-Phase Flow under Uncertainty*. December 2012.
- [2012-034] Siyang Wang, Johan Elf, Stefan Hellander and Per Lötstedt. *Stochastic Reaction-Diffusion Processes with Embedded Lower Dimensional Structures*. December 2012.
- [2012-033] Per Pettersson, Gianluca Iaccarino and Jan Nordström. *A Stochastic Galerkin Method for the Euler Equations with Roe Variable Transformation*. November 2012. This is a complete rewrite of report nr 2012-021 with new results. A more general framework for the representation of uncertainty is used. All figures have been replaced and more numerical results have been added (methods of manufactured

solutions, convergence in space and the stochastic dimension for subsonic and supersonic flow).

- [2012-032] Sofia Eriksson and Jan Nordström. *Exact Non-Reflecting Boundary Conditions Revisited: Well-Posedness and Stability*. October 2012.
- [2012-031] Parosh Aziz Abdulla, Mohamed Faouzi Atig and Jonathan Cederberg. *Timed Lossy Channel Systems*. October 2012.
- [2012-030] David Eklöv, Nikos Nikoleris and Erik Hagersten. *A Profiling Method for Analyzing Scalability Bottlenecks on Multicores*. October 2012.
- [2012-029] David Eklöv, Nikos Nikoleris, David Black-Schaffer and Erik Hagersten. *Quantitative Characterization of Memory Contention*. October 2012.
- [2012-028] Per Pettersson, Alireza Doostan and Jan Nordström. *On Stability and Monotonicity Requirements of Discretized Stochastic Conservation Laws with Random Viscosity*. September 2012.
- [2012-027] Carl Nettelblad. *Breakdown of Methods for Phasing and Imputation in the Presence of Double Genotype Sharing*. September 2012.
- [2012-026] Carl Nettelblad. *Inferring Haplotypes and Parental Genotypes in Larger Full Sib-Ships and Other Pedigrees with Missing or Erroneous Genotype Data*. September 2012.
- [2012-025] Jens Berg and Jan Nordström. *On the Impact of Boundary Conditions on Dual Consistent Finite Difference Discretizations*. September 2012.
- [2012-024] Katharina Kormann and Elisabeth Larsson. *An RBF-Galerkin Approach to the Time-Dependent Schrödinger Equation*. September 2012.
- [2012-023] Katharina Kormann. *A Time-Space Adaptive Method for the Schrödinger Equation*. August 2012. Updated 2012-09-12 (typos fixed).
- [2012-022] Olof Rensfelt, Frederik Hermans, Thiemo Voigt, Edith Ngai, Lars-Åke Nordén and Per Gunningberg. *SoNIC: Classifying and Surviving Interference in 802.15.4-based Sensor Networks*. August 2012.
- [2012-021] Per Pettersson, Gianluca Iaccarino and Jan Nordström. *A Roe Variable Based Chaos Method for the Euler Equations under Uncertainty*. August 2012. A complete rewrite with new results appears as report nr 2012-033.
- [2012-020] Elisabeth Larsson, Erik Lehto, Alfa Heryudono and Bengt Fornberg. *Stable Computation of Differentiation Matrices and Scattered Node Stencils Based on Gaussian Radial Basis Functions*. August 2012.
- [2012-019] Owe Axelsson, Xin He and Maya Neytcheva. *Numerical Solution of the Time-Dependent Navier-Stokes Equation for Variable Density-Variable Viscosity*. August 2012.

- [2012-018] Bengt Fornberg, Erik Lehto and Collin Powell. *Stable Calculation of Gaussian-based RBF-FD Stencils*. August 2012.
- [2012-017] Xin He, Marcus Holm and Maya Neytcheva. *Efficiently Parallel Implementation of the Inverse Sherman-Morrison Algorithm*. August 2012.
- [2012-016] Xin He and Maya Neytcheva. *On Preconditioning Incompressible Non-Newtonian Flow Problems*. August 2012.
- [2012-015] Josefin Ahlkrona, Nina Kirchner and Per Lötstedt. *A Numerical Study of the Validity of Shallow Ice Approximations*. July 2012.
- [2012-014] Jens Berg and Jan Nordström. *A Stable and Dual Consistent Boundary Treatment Using Finite Differences on Summation-By-Parts Form*. July 2012.
- [2012-013] Philip Axer, Rolf Ernst, Heiko Falk, Alain Girault, Daniel Grund, Nan Guan, Bengt Jonsson, Peter Marwedel, Jan Reineke, Christine Rochange, Maurice Sebastian, Reinhard von Hanxleden, Reinhard Wilhelm and Wang Yi. *Building Timing Predictable Embedded Systems*. July 2012.
- [2012-012] Anders Goude and Stefan Engblom. *Adaptive Fast Multipole Methods on the GPU*. May 2012.
- [2012-011] Margarida Martins da Silva, Torbjörn Wigren and Teresa Mendonca. *An Adaptive Controller for Propofol in Anesthesia under Synergistic Remifentanyl Disturbances*. May 2012.
- [2012-010] Muneeb Khan, Nikos Nikoleris and Erik Hagersten. *Investigating How Simple Software Optimizations Effect Relative Throughput Scaling on Multicores*. May 2012.
- [2012-009] Petia Boyanova and Maya Neytcheva. *Efficient Numerical Solution of Discrete Multi-Component Cahn-Hilliard Systems*. April 2012.
- [2012-008] Kenneth Duru and Gunilla Kreiss. *Numerical Interaction of Boundary Waves with Perfectly Matched Layers in Elastic Waveguides*. April 2012.
- [2012-007] Kenneth Duru and Gunilla Kreiss. *Boundary Waves and Stability of the Perfectly Matched Layer*. April 2012.
- [2012-006] Johanna Björklund, Eric Jönsson and Lisa Kaati. *Aspects of Plan Operators in a Tree Automata Framework*. April 2012.
- [2012-005] Stefan Engblom. *On the Stability of Stochastic Jump Kinetics*. February 2012.
- [2012-004] Jens Berg and Jan Nordström. *Superconvergent Functional Output for Time-Dependent Problems using Finite Differences on Summation-By-Parts Form*. February 2012.



- [2012-003] David Eklöv, Nikos Nikoleris, David Black-Schaffer and Erik Hagersten. *Design and Evaluation of the Bandwidth Bandit*. February 2012.
- [2012-002] O. Axelsson, P. Boyanova, M. Kronbichler, M. Neytcheva and X. Wu. *Numerical and Computational Efficiency of Solvers for Two-Phase Problems*. January 2012.
- [2012-001] Magnus Gustafsson, James Demmel and Sverker Holmgren. *Numerical Evaluation of the Communication-Avoiding Lanczos Algorithm*. January 2012.
- [2011-032] Björn Halvarsson, Torsten Wik and Bengt Carlsson. *New Input-Output Pairing Strategies Based on Linear Quadratic Gaussian Control*. December 2011.
- [2011-031] Håkan Selg. *Om nya kontaktmönster i arbetslivet: Facebook, LinkedIn, Twitter*. December 2011. In Swedish.
- [2011-030] P. Boyanova, I. Georgiev, S. Margenov and L. Zikatanov. *Multilevel Preconditioning of Graph-Laplacians: Polynomial Approximation of the Pivot Blocks Inverses*. November 2011.
- [2011-029] Alberto Ros and Stefanos Kaxiras. *VIPS: Simple Directory-Less Broadcast-Less Cache Coherence Protocol*. November 2011.
- [2011-028] Gunnika Isaksson-Luttemann, Bengt Sandblad, Arne W. Andersson and Simon Tchirner. *Reducing Unnecessary Cognitive Load in Traffic Control*. November 2011.
- [2011-027] Gunnika Isaksson-Lutteman, Arvid Kauppi, Arne W Andersson, Bengt Sandblad and Mikael Erlandsson. *Operative Tests of a New System for Train Traffic Control*. November 2011.
- [2011-026] Martin Kronbichler and Gunilla Kreiss. *A Hybrid Level-Set-Phase-Field Method for Two-Phase Flow with Contact Lines*. December 2011.
- [2011-025] Martin Kronbichler and Katharina Kormann. *A Generic Interface for Parallel Cell-Based Finite Element Operator Application*. November 2011.
- [2011-024] Martin Kronbichler, Claudio Walker, Gunilla Kreiss and Bernhard Müller. *Multiscale Modeling of Capillary-Driven Contact Line Dynamics*. November 2011.
- [2011-023] Hossein Bani-Hashemian, Stefan Hellander and Per Lötstedt. *Efficient Sampling in Event-Driven Algorithms for Reaction-Diffusion Processes*. October 2011.
- [2011-022] Magnus Gustafsson, Anna Nissen and Katharina Kormann. *Stable Difference Methods for Block-Structured Adaptive Grids*. October 2011.

- [2011-021] Håkan Selg. *Om nya kontaktmönster i arbetslivet: SMS, chatt, e-post och telefoni - När används vad?* October 2011. In Swedish.
- [2011-020] Natasha Flyer, Erik Lehto, Sébastien Blaise, Grady B. Wright and Amik St-Cyr. *RBF-Generated Finite Differences for Nonlinear Transport on a Sphere: Shallow Water Simulations*. September 2011.
- [2011-019] Qaisar Abbas and Jan Nordström. *A Weak Boundary Procedure for High Order Finite Difference Approximations of Hyperbolic Problems*. September 2011.
- [2011-018] Magnus Johansson, Björn Victor and Joachim Parrow. *Computing Strong and Weak Bisimulations for Psi-Calculi – with proofs*. August 2011.
- [2011-017] Anna Nissen, Gunilla Kreiss and Margot Gerritsen. *Stability at Non-conforming Grid Interfaces for a High Order Discretization of the Schrödinger Equation*. August 2011. Typos corrected October 7, 2011.
- [2011-016] Elena Sundkvist and Elisabeth Larsson. *Implementation of a Collocated Boundary Element Method for Acoustic Wave Propagation in Multilayered Fluid Media*. June 2011.
- [2011-015] Elena Sundkvist and Kurt Otto. *Discretization of a Hybrid Model for Acoustic Wave Propagation in Layered Fluid Media*. June 2011. Updated 2011-08-08.
- [2011-014] Anna Nissen, Gunilla Kreiss and Margot Gerritsen. *High Order Stable Finite Difference Methods for the Schrödinger Equation*. May 2011.
- [2011-013] Hans Norlander. *On the Impact of Model Accuracy for Active Damping of a Viscoelastic Beam*. May 2011.
- [2011-012] Jens Lindström and Jan Nordström. *Stable Robin Boundary Conditions for the Navier-Stokes Equations*. April 2011.
- [2011-011] Petia Boyanova, Minh Do-Quang and Maya Neytcheva. *Efficient Preconditioners for Large Scale Binary Cahn-Hilliard Models*. April 2011.
- [2011-010] Linda Åmand. *Control of Aeration Systems in Activated Sludge Plants - a review*. April 2011.
- [2011-009] Owe Axelsson and Maya Neytcheva. *Operator Splittings for Solving Nonlinear, Coupled Multiphysics Problems with an Application to the Numerical Solution of an Interface Problem*. April 2011.
- [2011-008] Kenneth Duru, Ken Mattsson and Gunilla Kreiss. *Stable and Conservative Time Propagators for Second Order Hyperbolic Systems*. April 2011.
- [2011-007] Vasileios Spiliopoulos, Stefanos Kaxiras and Georgios Keramidas. *A Framework for Continuously Adaptive DVFS*. March 2011.

- [2011-006] Xin He and Maya Neytcheva. *Preconditioning the Incompressible Navier-Stokes Equations with Variable Viscosity*. March 2011. Updated April 5, 2011.
- [2011-005] Andreas Hellander, Stefan Hellander and Per Lötstedt. *Coupled Mesoscopic and Microscopic Simulation of Stochastic Reaction-Diffusion Processes in Mixed Dimensions*. 2011.
- [2011-004] Petia Boyanova, Minh Do-Quang and Maya Neytcheva. *Solution Methods for the Cahn-Hilliard Equation Discretized by Conforming and Non-Conforming Finite Elements*. March 2011.
- [2011-003] Brian Drawert, Stefan Engblom and Andreas Hellander. *URDME v. 1.1: User's manual*. March 2011. The latest version of URDME can be obtained from [www.urdme.org](http://www.urdme.org). For earlier versions of URDME consult Technical Report 2008-022.
- [2011-002] Johannes Nygren and Bengt Carlsson. *Benchmark Simulation Model no. 1 with a Wireless Sensor Network for Monitoring and Control*. January 2011.
- [2010-031] Bengt Carlsson. *Constant is Optimal - a Strategy for Resource Efficient Control of a Class of Processes*. December 2010.
- [2010-030] Jens Lindström and Jan Nordström. *Spectral Analysis of the Continuous and Discretized Heat and Advection Equation on Single and Multiple Domains*. December 2010.
- [2010-029] Owe Axelsson and Maya Neytcheva. *A General Approach to Analyse Preconditioners for Two-by-Two Block Matrices*. November 2010.
- [2010-028] Håkan Selg. *Om professionell användning av sociala medier och andra digitala kanaler*. November 2010.
- [2010-027] Arnold Pears and Carsten Schulte. *Proceedings of the 9th Koli Calling International Conference on Computing Education Research*. November 2010. Typographical updates 2010-11-25.
- [2010-026] Xin He, Maya Neytcheva and Stefano Serra Capizzano. *On an Augmented Lagrangian-Based Preconditioning of Oseen Type Problems*. November 2010.
- [2010-025] Soma Tayamon and Torbjörn Wigren. *Recursive Identification and Scaling of Non-linear Systems using Midpoint Numerical Integration*. October 2010.
- [2010-024] Elias Rudberg and Emanuel H. Rubensson. *Assessment of Density Matrix Methods for Electronic Structure Calculations*. October 2010.
- [2010-023] Ken Mattsson. *Summation by Parts Operators for Finite Difference Approximations of Second-Derivatives with Variable Coefficients*. October 2010.

- [2010-022] Torbjörn Wigren, Linda Brus and Soma Tayamon. *MATLAB Software for Recursive Identification and Scaling Using a Structured Nonlinear Black-box Model - Revision 6*. September 2010. Revised version of nr 2010-002. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2010-022/NRISSoftwareRev6.zip>.
- [2010-021] Michael Thuné and Anna Eckerdal. *Students' Conceptions of Computer Programming*. September 2010. The phenomenographic outcome space presented in this report has previously been published as part of a journal article (Thuné and Eckerdal 2009). Due to space limitations in the journal publication, we have found it appropriate to make available a more comprehensive description of the outcome space, in the present technical report.
- [2010-020] Torbjörn Wigren. *Input-Output Data Sets for Development and Benchmarking in Nonlinear Identification*. August 2010. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2010-020/NonlinearData.zip>.
- [2010-019] David Eklöv, David Black-Schaffer and Erik Hagersten. *StatCC: Design and Evaluation*. June 2010.
- [2010-018] Jeremy E. Kozdon, Eric M. Dunham and Jan Nordström. *Interaction of Waves with Frictional Interfaces Using Summation-By-Parts Difference Operators, 2. Extension to Full Elastodynamics*. June 2010.
- [2010-017] Jeremy E. Kozdon, Eric M. Dunham and Jan Nordström. *Interaction of Waves with Frictional Interfaces Using Summation-By-Parts Difference Operators, 1. Weak Enforcement of Nonlinear Boundary Conditions*. June 2010.
- [2010-016] A. Rensfelt and T. Söderström. *Parametric Identification of Complex Modulus*. June 2010.
- [2010-015] Parosh Aziz Abdulla, Yu-Fang Chen, Giorgio Delzanno, Frédéric Haziza, Chih-Duo Hong and Ahmed Rezine. *Constrained Monotonic Abstraction: a CEGAR for Parameterized Verification*. June 2010.
- [2010-014] Stefan Hellander and Per Lötstedt. *Flexible Single Molecule Simulation of Reaction-Diffusion Processes*. May 2010.
- [2010-013] Jonas Boustedt. *Ways to Understand Class Diagrams*. March 2010. Typographic updates 2010-05-04.
- [2010-012] Jonas Boustedt. *A Student Perspective on Software Development and Maintenance*. March 2010.
- [2010-011] Soma Tayamon and Torbjörn Wigren. *Recursive Prediction Error Identification and Scaling of Non-linear Systems with Midpoint Numerical Integration*. March 2010.

- [2010-010] Maya Neytcheva, Erik Bängtsson and Elisabeth Linnér. *Finite-Element Based Sparse Approximate Inverses for Block-Factorized Preconditioners*. March 2010.
- [2010-009] Salman Toor, Bjarte Mohn, David Cameron and Sverker Holmgren. *Case-Study for Different Models of Resource Brokering in Grid Systems*. March 2010.
- [2010-008] Margarida Martins da Silva, Teresa Mendonça and Torbjörn Wigren. *Online Nonlinear Identification of the Effect of Drugs in Anaesthesia Using a Minimal Parameterization and BIS Measurements*. March 2010.
- [2010-007] Egi Hidayat and Alexander Medvedev. *Parameter Estimation in a Pulsatile Hormone Secretion Model*. March 2010.
- [2010-006] Carl Nettelblad and Sverker Holmgren. *Stochastically Guaranteed Global Optimums Achievable with a Divide-and-Conquer Approach to Multidimensional QTL Searches*. March 2010.
- [2010-005] Carl Nettelblad, Örjan Carlborg and José M. lvarez Castro. *Assessing Orthogonality and Statical Properties of Linear Regression Methods for Interval Mapping with Partial Information*. March 2010.
- [2010-004] Kenneth Duru and Gunilla Kreiss. *A Well-posed and Discretely Stable Perfectly Matched Layer for Elastic Wave Equations in Second Order Formulation*. February 2010.
- [2010-003] Andreas Hellander and Per Lötstedt. *Incorporating Active Transport of Cellular Cargo in Stochastic Mesoscopic Models of Living Cells*. February 2010.
- [2010-002] Torbjörn Wigren, Linda Brus and Soma Tayamon. *MATLAB Software for Recursive Identification and Scaling Using a Structured Nonlinear Black-box Model - Revision 5*. January 2010. Revised version of nr 2008-007. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2010-002/NRISSoftwareRev5.zip>. **Note** that the software package was updated on 2010-03-16.
- [2010-001] Mahen Jayawardena, Salman Toor and Sverker Holmgren. *Computational and Visualization tools for Genetic Analysis of Complex Traits*. January 2010.
- [2009-027] Jens Lindström and Jan Nordström. *A Stable and High Order Accurate Conjugate Heat Transfer Problem*. November 2009.
- [2009-026] Sara Zahedi, Martin Kronbichler and Gunilla Kreiss. *Spurious Currents in a Finite-Element Based Level Set Method for Two Phase Flow*. November 2009.
- [2009-025] Olof Rensfelt, Frederik Hermansand Christofer Ferm, Per Gunningberg and Lars-Åke Larzon. *Sensei-UU: A Nomadic Sensor Network Testbed Supporting Mobile Nodes*. October 2009.

- [2009-024] Iordanis Kavathatzopoulos. *AvI-index: A tool to assess usability*. October 2009.
- [2009-023] Margarida Martins da Silva, Torbjörn Wigren and Teresa Mendonca. *Nonlinear Identification of a Minimal NeuroMuscular Blockade Model in Anaesthesia*. September 2009.
- [2009-022] Katharina Kormann, Sverker Holmgren and Hans O. Karlsson. *A Fourier-Coefficient Based Solution of an Optimal Control Problem in Quantum Chemistry*. September 2009.
- [2009-021] Katharina Kormann, Sverker Holmgren and Hans O. Karlsson. *Global Error Control of the Time-Propagation for the Schrödinger Equation with a Time-Dependent Hamiltonian*. September 2009.
- [2009-020] Bengt Fornberg, Elisabeth Larsson and Natasha Flyer. *Stable Computations with Gaussian Radial Basis Functions in 2-D*. August 2009.
- [2009-019] David Eklöv and Erik Hagersten. *Statstack: Efficient Modeling of LRU Caches*. July 2009.
- [2009-018] Parosh Aziz Abdulla, Muhsin Atto, Jonathan Cederberg and Ran Ji. *Automated Analysis of Data-Dependent Programs with Dynamic Memory*. June 2009.
- [2009-017] Anna Nissen and Gunilla Kreiss. *An Optimized Perfectly Matched Layer for the Schrödinger Equation*. June 2009.
- [2009-016] Torsten Söderström. *Expressions for the Covariance Matrix of Covariance Data*. May 2009.
- [2009-015] Håkan Selg. *Två kulturer på Internet: Resultat av faktor- och klusteranalys*. May 2009. In Swedish.
- [2009-014] Mark H. Carpenter, Jan Nordström and David Gottlieb. *Revisiting and Extending Interface Penalties for Multi-Domain Summation-by-Parts Operators*. May 2009.
- [2009-013] Jim Wilenius. *Combinatorial and Simultaneous Auction: A Pragmatic Approach to Tighter Bounds on Expected Revenue*. May 2009. Updated May 28, 2009.
- [2009-012] Björn Halvarsson and Bengt Carlsson. *New Input/Output Pairing Strategies based on Minimum Variance Control and Linear Quadratic Gaussian Control*. May 2009. Updated June 2009.
- [2009-011] Jan Nordström and Sofia Eriksson. *Well Posed, Stable and Weakly Coupled Fluid Structure Interaction Problems*. April 2009.
- [2009-010] Lars Ferm, Andreas Hellander and Per Lötstedt. *An Adaptive Algorithm for Simulation of Stochastic Reaction-Diffusion Processes*. April 2009.

- [2009-009] Sofia Eriksson and Jan Nordström. *Analysis of the Order of Accuracy for Node-Centered Finite Volume Schemes*. March 2009.
- [2009-008] Henrik Johansson. *A Meta-Partitioner for Run-Time Selection and Evaluation of Multiple Partitioning Algorithms for SAMR Grid Hierarchies*. March 2009.
- [2009-007] Henrik Johansson. *Run-Time Selection of Partitioning Algorithms for Parallel SAMR Applications*. March 2009.
- [2009-006] Jan Nordström, Jing Gong, Edwin van der Weide and Magnus Svärd. *A Stable and Conservative High Order Multi-block Method for the Compressible Navier-Stokes Equations*. February 2009.
- [2009-005] Sven-Olof Nyström. *Ideas for a new Erlang*. February 2009.
- [2009-004] Arnold Pears and Lauri Malmi. *The 8th Koli Calling International Conference on Computing Education Research*. February 2009. Updated June 2009.
- [2009-003] Erik Nordström, Per Gunningberg and Christian Rohner. *A Search-based Network Architecture for Mobile Devices*. January 2009.
- [2009-002] Anna Eckerdal. *Ways of Thinking and Practising in Introductory Programming*. 2009.
- [2009-001] Arne Andersson and Jim Wilenius. *A New Analysis of Revenue in the Combinatorial and Simultaneous Auction*. January 2009. Updated May 2009.
- [2008-026] Björn Holmberg. *Stereoscopic Estimation of Surface Movement from Inter-Frame Matched Skin Texture*. October 2008.
- [2008-025] Björn Holmberg. *High Dimensional Human Motion Estimation using Particle Filtering*. October 2008.
- [2008-024] Therese Bohlin and Bengt Jonsson. *Regular Inference for Communication Protocol Entities*. September 2008.
- [2008-023] Pierre Flener, Justin Pearson and Meinolf Sellmann. *Static and Dynamic Structural Symmetry Breaking*. September 2008.
- [2008-022] Josef Cullhed, Stefan Engblom and Andreas Hellander. *The URDME Manual version 1.0*. September 2008.
- [2008-021] Åsa Cajander, Elina Eriksson, Jan Gulliksen, Iordanis Kavathatzopoulos and Bengt Sandblad. *Användbara IT-stöd - En utvärdering av ett forskningsprojekt vid CSN, Centrala studiestödsnämnden*. August 2008. In Swedish.
- [2008-020] Stefan Engblom. *Parallel in Time Simulation of Multiscale Stochastic Chemical Kinetics*. August 2008. Extended abstract to appear in Proceedings of ICNAAM 2008.
- [2008-019] Ken Mattsson, Frank Ham and Gianluca Iaccarino. *Stable Boundary Treatment for the Wave Equation on Second-Order Form*. June 2008.

- [2008-018] Pierre Flener and Xavier Lorca. *A Complete Characterisation of the Classification Tree Problem*. June 2008.
- [2008-017] Henrik Johansson. *Design and Implementation of a Dynamic and Adaptive Meta-Partitioner for Parallel SAMR Grid Hierarchies*. June 2008.
- [2008-016] Parosh Aziz Abdulla, Pavel Krchal and Wang Yi. *R-automata*. June 2008.
- [2008-015] Parosh Aziz Abdulla, Ahmed Bouajjani, Jonathan Cederberg, Frédéric Haziza and Ahmed Rezine. *Monotonic Abstraction for Programs with Dynamic Memory Heaps*. 2008.
- [2008-014] Olga Grinchtein and Bengt Jonsson. *Inference of Event-Recording Automata using Timed Decision Trees*. April 2008.
- [2008-013] Olga Grinchtein, Bengt Jonsson and Martin Leucker. *Learning of Event-Recording Automata*. April 2008.
- [2008-012] Stefan Engblom, Lars Ferm, Andreas Hellander and Per Lötstedt. *Simulation of Stochastic Reaction-Diffusion Processes on Unstructured Meshes*. April 2008.
- [2008-011] Per Pettersson, Gianluca Iaccarino and Jan Nordström. *Numerical Analysis of Burgers' Equation with Uncertain Boundary Conditions Using the Stochastic Galerkin Method*. March 2008.
- [2008-010] Parosh Aziz Abdulla, Noomene Ben Henda, Giorgio Delzanno, Frédéric Haziza and Ahmed Rezine. *Parameterized Tree Systems*. March 2008. Accepted at FORTE'08: [http://www-higashi.ist.osaka-u.ac.jp/FORTE08/](http://www.higashi.ist.osaka-u.ac.jp/FORTE08/).
- [2008-009] Peter Naucrér and Torsten Söderström. *Linear and Nonlinear Regression with Application to Unbalance Estimation*. March 2008.
- [2008-008] Mei Hong and Torsten Söderström. *Relations between Bias-Eliminating Least Squares, the Frisch Scheme and Extended Compensated Least Squares Methods for Identifying Errors-in-Variables Systems*. March 2008.
- [2008-007] Torbjörn Wigren and Linda Brus. *MATLAB Software for Recursive Identification and Scaling Using a Structured Non-linear Black-box Model - Revision 4*. March 2008. Revised version of nr 2007-013. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2008-007/NRISoftwareRev4.zip>. Note that the software package was updated on 2010-03-16.
- [2008-006] Linda Brus. *MATLAB Software for Feedforward Optimal Control of Systems with Flow Varying Time Delays - Revision 2*. March 2008. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2008-006/NOCSsoftwareV2.zip>.



- [2008-005] Stefan Engblom. *A Discrete Spectral Method for the Chemical Master Equation*. February 2008. Supersedes report nr 2006-036. Updated Feb 29, 2008.
- [2008-004] Arne Andersson and Jim Wilenius. *A New Analysis of Combinatorial vs Simultaneous Auctions: Revenue and Efficiency*. February 2008.
- [2008-003] Iordanis Kavathatzopoulos. *Ett förbättrat verktyg för mätning av användbarhet, stress och nytta: Andra försöket inom CSN*. January 2008. In Swedish.
- [2008-002] Owe Axelsson and Janos Karatson. *Equivalent Operator Preconditioning for Linear Elliptic Problems*. January 2008. A preliminary version of the same article is published as Preprint 2007-04, ELTE Dept. Appl. Anal. Comp. Math., <http://www.cs.elte.hu/applanal/preprints>.
- [2008-001] Björn Holmberg, Bo Nordin, Ewert Bengtsson and Håkan Lanshammar. *On the Plausibility of Using Skin Texture as Virtual Markers in the Human Motion Analysis Context, a 2D Study*. January 2008.
- [2007-035] Mayank Saxena, Oskar Wibling and Bengt Jonsson. *Graph Grammar Modeling and Verification of Ad Hoc Routing Protocols*. December 2007. Updated March 2008. Extended abstract to appear in proc. 14th Int. Conf. on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2008).
- [2007-034] Stefan Seipel and Lars Winkler Pettersson. *PixelActiveSurface: A Tabletop Rear-Projection Display for Collaboration with Pixel-Accurate Interaction*. December 2007. Extended abstract appeared in ACM Conference on Supporting Group Work (GROUP'07).
- [2007-033] Owe Axelsson, Radim Blaheta and Maya Neytcheva. *A Black-Box Generalized Conjugate Gradient Minimum Residual Method Based on Variable Preconditioners and Local Element Approximations*. December 2007.
- [2007-032] Pierre Flener, Justin Pearson, Meinolf Sellmann, Pascal Van Hentenryck and Magnus Ågren. *Structural Symmetry Breaking for Constraint Satisfaction Problems*. November 2007.
- [2007-031] Niklas Hardenborg, Iordanis Kavathatzopoulos and Bengt Sandblad. *Performing the Vision Seminar Process*. November 2007.
- [2007-030] Parosh Abdulla, Noomene Ben Henda, Giorgio Delzanno and Ahmed Rezne. *Handling Parameterized Systems with Non-Atomic Global Conditions*. November 2007. Updated 20 Mar 2008. To appear in the Proc. of VMCAI 2008.
- [2007-029] Jing Gong, Jan Nordström and Edwin van der Weide. *A Hybrid Method for the Unsteady Compressible Navier-Stokes Equations*. October 2007.

- [2007-028] Paul Sjöberg. *PDE and Monte Carlo Approaches to Solving the Master Equation Applied to Gene Regulation*. October 2007.
- [2007-027] Andreas Hellander. *Efficient Computation of Transient Solutions of the Chemical Master Equation Based on Uniformization and Quasi-Monte Carlo*. October 2007.
- [2007-026] Linda Brus. *MATLAB Software for Feedforward Optimal Control of Systems with Flow Varying Time Delays*. September 2007. A revised version can be found as technical report nr 2008-006. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2007-026/NOCSsoftware.zip>.
- [2007-025] Peter Nauc ler and Torsten S derstr m. *Polynomial Feedforward Design Techniques for a Mechanical Wave Diode System*. September 2007.
- [2007-024] John H kansson and Paul Pettersson. *Partial Order Reduction for Verification of Real-Time Components*. September 2007. A shorter version will appear in the Proceedings of FORMATS 2007, LNCS 4762, pp 211-226.
- [2007-023] Lars Ferm and Per L tstedt. *Adaptive Solution of the Master Equation in Low Dimensions*. September 2007.
- [2007-022] Mei Hong, Torsten S derstr m, Johan Schoukens and Rik Pintelon. *Accuracy Analysis of Time Domain Maximum Likelihood Method and Sample Maximum Likelihood Method for Errors-in-Variables Identification*. September 2007.
- [2007-021] Mei Hong, Torsten S derstr m, Umberto Soverini and Roberto Diversi. *Comparison of Three Frisch Methods for Errors-in-Variables Identification*. August 2007.
- [2007-020] J. Nordstr m, F. Ham, M. Shoeybi, E. van der Weide, M. Sv rd, K. Mattsson, G. Iaccarino and J. Gong. *A Hybrid Method for Unsteady Fluid Flow*. August 2007.
- [2007-019] Sofia Eriksson, Magnus Sv rd and Jan Nordstr m. *Simulations of Ground Effects on Wake Vortices at Runways*. June 2007.
- [2007-018] Robin Adams, Sally Fincher, Arnold Pears, Jonas Boustedt, J rgen B rstler, Peter Dalenius, Gunilla Eken, Tim Heyer, Andreas Jakobsson, Vanja Lindberg, Bengt Molin, Jan Erik Mostr m and Mattias Wiggberg. *What is the Word for "Engineering" in Swedish: Swedish Students Conceptions of their Discipline*. June 2007.
- [2007-017] Olof Rensfelt and Lars- ke Larzon. *A Bandwidth Study of a DHT in a Heterogeneous Environment*. May 2007.
- [2007-016] Erik Nordstr m, Per Gunningberg, Christian Rohner and Oskar Wibling. *A Cross-Environment Study of Routing Protocols for Wireless Multi-hop Networks*. April 2007.

- [2007-015] Torbjörn Wigren. *MATLAB Software for Recursive Identification of Systems With Output Quantization Revision 1*. April 2007. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2007-015/QRISRev1.zip>.
- [2007-014] Parosh Aziz Abdulla, Giorgio Delzanno and Ahmed Rezine. *Parameterized Verification of Infinite-state Processes with Global Conditions*. April 2007. A short version of this paper will appear in the proceedings of *Computer Aided Verification (CAV) 2007*.
- [2007-013] Torbjörn Wigren and Linda Brus. *MATLAB Software for Recursive Identification and Scaling Using a Structured Non-linear Black-box Model - Revision 3*. April 2007. Revised version of nr 2005-022. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2007-013/NRISoftwareRev3.zip>.
- [2007-012] Alexander Churilov, Alexander Medvedev and Alexander Shepeljavyi. *Mathematical Model of Non-Basal Testosterone Regulation in the Male by Pulse Modulated Feedback*. April 2007.
- [2007-011] Lars Ferm, Per Lötstedt and Andreas Hellander. *A Hierarchy of Approximations of the Master Equation Scaled by a Size Parameter*. April 2007.
- [2007-010] Torbjörn Wigren. *MATLAB software for Recursive Identification of Wiener Systems - Revision 2*. March 2007. The software package was updated to handle FIR systems, revision 3, April 2007. The updated software package and manual can be downloaded from <http://www.it.uu.se/research/publications/reports/2007-010/WRIS.zip>.
- [2007-009] Magnus Ågren, Pierre Flener and Justin Pearson. *On Constraint-Oriented Neighbours for Local Search*. March 2007.
- [2007-008] Erik Bängtsson and Maya Neytcheva. *Finite Element Block-Factorized Preconditioners*. March 2007.
- [2007-007] Malin Ljungberg. *Composable Difference Operators for Coordinate Invariant Partial Differential Equations*. February 2007.
- [2007-006] Anders Berglund and Mattias Wiggberg (eds.). *Proceedings from the 6th Baltic Sea Conference in Computing Education Research, Koli Calling*. February 2007.
- [2007-005] Parosh Aziz Abdulla, Noomene Ben Henda, Richard Mayr, Sven Sandberg and Luca de Alfaro. *Stochastic Games with Lossy Channels*. February 2007. Updated 14 December 2007. To appear in the proceedings of FoSSaCS 2008.
- [2007-004] Jonas Persson. *Pricing American Options Using a Space-time Adaptive Finite Difference Method*. January 2007.

- [2007-003] Pierre Flener, Justin Pearson, Magnus Ågren, Carlos Garcia Avello and Mete Çeliktin. *Air-Traffic Complexity Resolution in Multi-Sector Planning*. January 2007.
- [2007-002] Jing Gong and Jan Nordström. *A Stable and Efficient Hybrid Scheme for Viscous Problems in Complex Geometries*. January 2007.
- [2006-052] Parosh Aziz Abdulla, Noomene Ben Henda, Giorgio Delzanno and Ahmed Rezzine. *Regular Model Checking without Transducers (On Efficient Verification of Parameterized Systems)*. December 2006. To appear in the proceedings of TACAS 2007.
- [2006-051] Erik Bängtsson and Björn Lund. *A Comparison Between Two Solution Techniques to Solve the Equations of Linear Isostasy*. December 2006.
- [2006-050] Iordanis Kavathatzopoulos. *AvI-enkäten: Ett verktyg för att mäta användbarhet, stress och nytta av IT-stöd*. December 2006. In Swedish.
- [2006-049] Stefan Blomkvist. *The User as a Personality: A Reflection on the Theoretical and Practical Use of Personas in HCI Design*. November 2006.
- [2006-048] Owe Axelsson, Radim Blaheta and Maya Neytcheva. *Preconditioning of Boundary Value Problems using Elementwise Schur Complements*. November 2006.
- [2006-047] Henrik Johansson and Johan Steensland. *A Performance Characterization of Load Balancing Algorithms for Parallel SAMR Applications*. October 2006.
- [2006-046] Mei Hong, Torsten Söderström and Wei Xing Zheng. *Asymptotic Accuracy Analysis of Bias-Eliminating Least Squares Estimates for Identification of Errors in Variables Systems*. October 2006.
- [2006-045] Anders Hessel and Paul Pettersson. *Model-Based Testing of a WAP Gateway: an Industrial Case-Study*. September 2006.
- [2006-044] Mei Hong, Torsten Söderström, Johan Schoukens and Rik Pintelon. *Comparison of Time Domain Maximum Likelihood Method and Sample Maximum Likelihood Method in Errors-in-Variables Identification*. September 2006.
- [2006-043] Jarmo Rantakokko. *Case-Centered Learning of Scientific Computing*. September 2006.
- [2006-042] Eddie Wadbro. *On the Far-Field Properties of an Acoustic Horn*. September 2006.
- [2006-041] Markus Nordén. *Performance Modelling for Parallel PDE Solvers on NUMA-Systems*. August 2006.

- [2006-040] Mei Hong, Torsten Söderström and Wei Xing Zheng. *A Simplified Form of the Bias-Eliminating Least Squares Method for Errors-In-Variables Identification*. August 2006.
- [2006-039] Andreas Hellander and Per Lötstedt. *Hybrid Method for the Chemical Master Equation*. August 2006.
- [2006-038] Markus Nordén, Henrik Löf, Jarmo Rantakokko and Sverker Holmgren. *Geographical Locality and Dynamic Data Migration for OpenMP Implementations of Adaptive PDE Solvers*. August 2006. To appear in *Proceedings of the 2:nd International Workshop on OpenMP (IWOMP)*.
- [2006-037] Elisabeth Larsson, Krister Åhlander and Andreas Hall. *Multi-Dimensional Option Pricing using Radial Basis Functions and the Generalized Fourier Transform*. August 2006.
- [2006-036] Stefan Engblom. *A Discrete Spectral Method for the Chemical Master Equation*. June 2006. Superseded by report nr 2008-005.
- [2006-035] Owe Axelsson and Janos Karátson. *Mesh Independent Superlinear PCG Rates via Compact-Equivalent Operators*. June 2006.
- [2006-034] Agnes Rensfelt and Torsten Söderström. *Optimal Excitation for Nonparametric Identification of Viscoelastic Materials*. June 2006.
- [2006-033] Parosh Aziz Abdulla, Noomene Ben Henda, Richard Mayr and Sven Sandberg. *Limiting Behavior of Markov Chains with Eager Attractors*. June 2006.
- [2006-032] Torsten Söderström. *Extending the Frisch Scheme for Errors-in-Variables Identification to Correlated Output Noise*. June 2006.
- [2006-031] Håkan Zeffner and Erik Hagersten. *A Case for Low-Complexity Multi-CMP Architectures*. June 2006.
- [2006-030] Lars-Henrik Eriksson. *The GTO Toolset and Method*. June 2006.
- [2006-029] Lars-Henrik Eriksson. *Use of Domain Theories in Applied Formal Methods*. June 2006.
- [2006-028] Ulrika Pettersson, Elisabeth Larsson, Gunnar Marcusson and Jonas Persson. *Improved Radial Basis Function Methods for Multi-Dimensional Option Pricing*. May 2006.
- [2006-027] Jan Nordström. *Error Bounded Schemes for Time-Dependent Hyperbolic Problems*. May 2006.
- [2006-026] Jan Nordström, Ken Mattsson and Charles Swanson. *Boundary Conditions for a Divergence Free Velocity-Pressure Formulation of the Incompressible Navier-Stokes Equations*. May 2006.
- [2006-025] Johan Wikström, Arvid Kauppi, Arne W. Andersson and Bengt Sandblad. *Designing a Graphical User Interface for Train Traffic Control*. 2006.

- [2006-024] Arvid Kauppi, Johan Wikström, Bengt Sandblad and Arne W. Andersson. *Control Strategies for Managing Train Traffic, Difficulties Today and Solutions for the Future*. May 2006.
- [2006-023] Gergana Bencheva, Svetozar Margenov and Jiří Starý. *MPI Implementation of a PCG Solver for Nonconforming FEM Problems: Overlapping of Communications and Computations*. May 2006.
- [2006-022] Niclas Sandgren and Petre Stoica. *On Moving Average Parameter Estimation*. April 2006.
- [2006-021] Gunilla Linde, Jonas Persson and Lina von Sydow. *High-Order Adaptive Space-Discretizations for the Black–Scholes Equation*. April 2006.
- [2006-020] Nicolas Beldiceanu, Pierre Flener and Xavier Lorca. *Combining Tree Partitioning, Precedence, Incomparability, and Degree Constraints, with an Application to Phylogenetic and Ordered-Path Problems*. April 2006.
- [2006-019] Jing Gong and Jan Nordström. *Stable, Accurate and Efficient Interface Procedures for Viscous Problems*. April 2006.
- [2006-018] Dan Wallin, Henrik Löf, Erik Hagersten and Sverker Holmgren. *Multigrid and Gauss-Seidel Smoothers Revisited: Parallelization on Chip Multiprocessors*. April 2006.
- [2006-017] André Yamba Yamba, Krister Åhlander and Malin Ljungberg. *Designing for Geometrical Symmetry Exploitation*. April 2006.
- [2006-016] Johan Petrini and Tore Risch. *Scalable RDF Views of Relational Databases through Partial Evaluation*. March 2006. Updated April 2006.
- [2006-015] Jonas Persson and Jonatan Eriksson. *Pricing Turbo Warrants*. March 2006.
- [2006-014] O. Amoignon. *Moving Mesh Adaptation for Aerodynamic Shape Optimization*. March 2006.
- [2006-013] O. Amoignon and M. Berggren. *Adjoint of a Median-Dual Finite-Volume Scheme Applied to 2D and 3D Transonic Aerodynamic Shape Optimization*. March 2006.
- [2006-012] Marianne Ahlford, Martin Andersson, Hanna Blomquist, Magnus Ekström, Lars Ericsson, Johannes Gumbel, Anna Holmgren, Peter Holmberg, Leonard Kia, Anton Lindström, Magnus Lyrberg, Shaman Mahmoudi, Bengt Nolin, Jesper Sundien, Henrik Wallentin, Olle Gällmo, Anders Hessel, Leonid Mokrushin and Paul Pettersson. *Uppsala Underdogs - A Robot Soccer Project*. March 2006.
- [2006-011] Bahram Bahar, Adam Bolcsfoldi, Jonas Falkevik, Roger Jakobsen, Kristoer Kobosko, Jimmy Kallstrom, Alexander Harju, Andreas Hasselberg, Johan Persson, Mattias Wadman, Olle Gällmo, Anders Hessel, Leonid Mokrushin and Paul Pettersson. *Developing A-GPS as a Student Project*. March 2006.

- [2006-010] Mattias Andreasson, Andrée Bylund, Syrus Dargahi, Daniel Johansson, Martin Larsson, Bennie Lundmark, Jonas Mellberg, Fredrik Stenh, Olle Gällmo, Anders Hessel, Leonid Mokrushin and Paul Pettersson. *Project Avatar - Developing a Distributed Mobile Phone Game*. March 2006. Online copy corrected April 7, 2006.
- [2006-009] Parosh Aziz Abdulla, Noomene Ben Henda, Richard Mayr and Sven Sandberg. *Eager Markov Chains*. March 2006.
- [2006-008] Pavel Krcal and Wang Yi. *Communicating Timed Automata: The More Synchronous, the More Difficult to Verify*. March 2006.
- [2006-007] Stefan Engblom. *Gaussian Quadratures with Respect to Discrete Measures*. February 2006.
- [2006-006] Hans Hansson (editor). *ARTES - A Network for Real-Time Research and Graduate Education in Sweden 1997–2006*. 2006. Also published as report MDH-MRTC-197/2006-1-SE, Mälardalens Högskola.
- [2006-005] Magnus Ågren, Pierre Flener and Justin Pearson. *Inferring Variable Conflicts for Local Search from High-Level Models*. February 2006. Updated March 2006.
- [2006-004] Owe Axelsson and Janos Karatson. *Symmetric Part Preconditioning of the CG for Stokes Type Saddle-Point Systems*. February 2006.
- [2006-003] Fredrik Bergholm. *Intermittent Open Boundaries for Shallow Water Equations*. February 2006.
- [2006-002] Torsten Söderström. *Statistical Analysis of the Frisch Scheme for Identifying Errors-in-Variables Systems*. January 2006.
- [2006-001] Lars Ferm and Per Lötstedt. *Numerical Method for Coupling the Macro and Meso Scales in Stochastic Chemical Kinetics*. January 2006.
- [2005-044] Paul Sjöberg, Per Lötstedt and Johan Elf. *Fokker-Planck Approximation of the Master Equation in Molecular Biology*. December 2005.
- [2005-043] Krister Åhlander. *Sparse Generalized Fourier Transforms*. December 2005.
- [2005-042] Olof Sivertsson. *Construction of Synthetic CDO Squared*. December 2005. M.Sc. thesis.
- [2005-041] Håkan Zeffner, Zoran Radovic, Martin Karlsson and Erik Hagersten. *TMA: A Trap-Based Memory Architecture*. December 2005. Revised version of Technical Report 2005-015.
- [2005-040] Martin Karlsson. *Conserving Memory Bandwidth in Chip Multi-Processors with Runahead Execution*. December 2005.
- [2005-039] Erik Nordström, Richard Gold and Per Gunningberg. *Mythbusters: Whatever You Thought About MANET Routing, Think Again...* November 2005.

- [2005-038] GianLuigi Ferrari, Ugo Montanari, Emilio Tuosto, Björn Victor and Kidane Yemane. *Modelling Fusion Calculus using HD-Automata*. November 2005. A shorter version appeared in the proceedings of CALCO 2005.
- [2005-037] Marino Miculan, Emilio Tuosto and Kidane Yemane. *HD-Automata for Open Bisimulation*. November 2005.
- [2005-036] Mahen Jayawardena, Kajsa Ljungberg and Sverker Holmgren. *Using Parallel Computing and Grid Systems for Genetic Mapping of Multifactorial Traits*. December 2005.
- [2005-035] Kajsa Ljungberg, Kateryna Mishchenko and Sverker Holmgren. *Efficient Algorithms for Multi-Dimensional Global Optimization in Genetic Mapping of Complex Traits*. November 2005.
- [2005-034] Maria Eriksson. *Detecting Symmetries in Relational Models of CSPs*. November 2005. M.Sc. thesis.
- [2005-033] Kajsa Ljungberg. *Efficient Evaluation of the Residual Sum of Squares for Quantitative Trait Locus Models in the Case of Complete Marker Genotype Information*. November 2005.
- [2005-032] Niklas Johansson and Bengt Sandblad. *Efficient IT support in care for the elderly - Experiences from the VIHO project*. November 2005.
- [2005-031] Jan Nordström and R.C. Swanson. *Boundary Conditions for a Divergence Free Velocity-Pressure Formulation of the Incompressible Navier-Stokes Equations*. November 2005.
- [2005-030] Erik Bängtsson. *A Consistent Stabilized Formulation for a Nonsymmetric Saddle-Point Problem*. October 2005.
- [2005-029] Niklas Johansson and Stina Nylander. *Usability in Mobile IT systems*. October 2005.
- [2005-028] Erik Berg, Håkan Zeffner and Erik Hagersten. *A Statistical Multiprocessor Cache Model*. October 2005.
- [2005-027] Timo Qvist. *Fast Simulation of Concurrent Agents with P-Nets - the GPSim tool*. September 2005. M.Sc. thesis.
- [2005-026] Erik Abenius, Fredrik Edelvik and Christer Johansson. *Waveguide Truncation Using UPML in the Finite-Element Time-Domain Method*. September 2005.
- [2005-025] Paul Pettersson and Wang Yi (eds.). *Pre-Proceedings of the 3rd International Conference on Formal Modelling and Analysis of Timed Systems*. September 2005.
- [2005-024] Torsten Söderström, Erik K. Larsson, Kaushik Mahata and Magnus Mossberg. *Approaches for Continuous-Time Modeling in Errors-in-Variables Identification*. September 2005.



- [2005-023] Per Lötstedt and Lars Ferm. *Dimensional Reduction of the Fokker-Planck Equation for Stochastic Chemical Reactions*. August 2005.
- [2005-022] Torbjörn Wigren. *MATLAB Software for Recursive Identification and Scaling Using a Structured Nonlinear Black-box Model – Revision 2*. August 2005. Revised version of nr 2005-002. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2005-022/NRISoftwareRev2.zip>.
- [2005-021] Mei Hong, Torsten Söderström and Wei Xing Zheng. *Accuracy Analysis of Bias-Eliminating Least Squares Estimates for Identification of Errors-in-Variables Systems*. August 2005.
- [2005-020] Stefan Engblom. *Computing the Moments of High Dimensional Solutions of the Master Equation*. June 2005.
- [2005-019] Torsten Söderström. *Computing the Covariance Matrix for PEM Estimates and the Cramer-Rao Lower Bound for Linear State Space Models*. June 2005.
- [2005-018] Eva Olsson, Niklas Johansson, Jan Gulliksen and Bengt Sandblad. *A Participatory Process Supporting Design of Future Work*. May 2005.
- [2005-017] Tobias Bandh. *Evaluation of Authentication Algorithms for Small Devices*. May 2005.
- [2005-016] Håkan Zeffer and Erik Hagersten. *Adaptive Coherence Batching for Trap-Based Memory Architectures*. May 2005.
- [2005-015] Håkan Zeffer, Zoran Radovic, Martin Karlsson and Erik Hagersten. *TMA: A Trap-Based Memory Architecture*. May 2005. A revised version is available as Technical Report 2005-041.
- [2005-014] Richard Gold and Mats Uddenfeldt. *Daigan: Constructing Proxy Networks with SelNet*. April 2005.
- [2005-013] Håkan Zeffer, Zoran Radovic and Erik Hagersten. *Flexibility Implies Performance*. April 2005.
- [2005-012] Milena Ivanova and Tore Risch. *Customizable Parallel Execution of Scientific Stream Queries*. April 2005.
- [2005-011] Per Carlsson and Arne Andersson. *A Flexible Model for Tree-Structured Multi-Commodity Markets*. April 2005. Extended version of conference paper accepted for IEEE CEC2005, München, July 2005.
- [2005-010] Pär Samuelsson, Björn Halvarsson and Bengt Carlsson. *Cost-Efficient Operation of a Denitrifying Activated Sludge Process - An Initial Study*. April 2005.
- [2005-009] Claes Olsson. *Disturbance Observer-Based Automotive Engine Vibration Isolation Dealing with Non-Linear Dynamics and Transient Excitation*. April 2005.

- [2005-008] Linda Brus. *Nonlinear Identification of a Solar Heating System*. March 2005.
- [2005-007] Linda Brus. *Nonlinear Identification of an Anaerobic Digestion Process*. March 2005.
- [2005-006] Agnes Runqvist, Magnus Mossberg and Torsten Söderström. *On Optimal Sensor Locations for Nonparametric Identification of Viscoelastic Materials*. February 2005.
- [2005-005] Torsten Söderström. *Accuracy Analysis of the Frisch Scheme for Identifying Errors-in-Variables Systems*. February 2005.
- [2005-004] Michael Baldamus, Joachim Parrow and Björn Victor. *A Fully Abstract Encoding of the  $\pi$ -Calculus with Data Terms*. February 2005. Updated April 2005.
- [2005-003] Claes Olsson. *Structure Flexibility Impacts on Robust Active Vibration Isolation Using Mixed Sensitivity Optimisation*. February 2005.
- [2005-002] Torbjörn Wigren. *MATLAB Software for Recursive Identification and Scaling Using a Structured Nonlinear Black-box Model — Revision 1*. January 2005. The software package can be downloaded from <http://www.it.uu.se/research/publications/reports/2005-002/NRISoftware.zip>.
- [2005-001] Henrik Brandén and Per Sundqvist. *Preconditioners Based on Fundamental Solutions*. January 2005. Revised version of IT technical report 2000-032.
- [2004-058] Anna Eckerdal. *On the Understanding of Object and Class*. December 2004.
- [2004-057] Erik Borälv. *Evaluation and Reflections on the Design of the WeAidU System*. December 2004.
- [2004-056] Erik Borälv. *Design and Evaluation of the CHILI System*. December 2004.
- [2004-055] Per Lötstedt, Jonas Persson, Lina von Sydow and Johan Tysk. *Space-Time Adaptive Finite Difference Method for European Multi-Asset Options*. December 2004.
- [2004-054] Lars Ferm, Per Lötstedt and Paul Sjöberg. *Adaptive, Conservative Solution of the Fokker-Planck Equation in Molecular Biology*. November 2004.
- [2004-053] Bharath Bhikkaji, Kaushik Mahata and Torsten Söderström. *Recursive Algorithms for Estimating the Parameters in a One Dimensional Heat Diffusion System: Analysis*. November 2004.
- [2004-052] Bharath Bhikkaji, Torsten Söderström and Kaushik Mahata. *Recursive Algorithms for Estimating the Parameters in a One Dimensional Heat Diffusion System: Derivation and Implementation*. November 2004.

- [2004-051] Claes Olsson. *Comparative Study of Recursive Parameter Estimation Algorithms with Application to Active Vibration Isolation*. November 2004.
- [2004-050] Stefan Johansson. *High Order Summation by Parts Operator Based on a DRP Scheme Applied to 2D Aeroacoustics*. October 2004.
- [2004-049] Erik Borälv, Niklas Johansson, Emmanouel Papaioannou and Athanasios Demiris. *A Design Case: Interactive Sports Content Broadcasting*. October 2004.
- [2004-048] Henrik Löf and Jarmo Rantakokko. *Algorithmic Optimizations of a Conjugate Gradient Solver on Shared Memory Architectures*. October 2004.
- [2004-047] Iordanis Kavathatzopoulos, Jenny Öhman Persson and Carl Åborg. *Assessing Health and Moral Stress in IT-Based Work*. October 2004.
- [2004-046] Per Carlsson. *Market Simulations*. October 2004.
- [2004-045] Per Carlsson and Arne Andersson. *A Flexible Model for Tree-Structured Multi-Commodity Markets*. October 2004.
- [2004-044] Erik Cedheim, Ramzi Ferchichi, Anders Jonsson, Dan Lind, Henrik Nyman, Olof Sivertsson, Andreas Widenfalk, Jöns Åkerlund, Leonid Mokrushin and Paul Pettersson. *Kelb - A Real-Time Programming Environment for the Sony Aibo*. October 2004.
- [2004-043] Iordanis Kavathatzopoulos, Jenny Persson and Carl Åborg. *Skattekontoret i Falun: Ett mönsterkontor*. October 2004. In Swedish. Originally written 2002.
- [2004-042] Per Sundqvist. *Boundary Summation Equations*. September 2004.
- [2004-041] Paul Pettersson and Wang Yi (Eds.). *Proceedings of the 16th Nordic Workshop on Programming Theory*. October 2004.
- [2004-040] Magnus Svärd and Jan Nordström. *On the Order of Accuracy for Difference Approximations of Initial-Boundary Value Problems*. September 2004.
- [2004-039] Jing Gong and Jan Nordström. *A Stable Hybrid Method for Hyperbolic Problems*. September 2004.
- [2004-038] Martin Nilsson. *Different Methods that Reduce Cost in Monostatic RCS Computations for MOM Accelerated by MLFMA*. September 2004. To appear in Proceedings of EMB04 - Computational Electromagnetics - Methods and Applications, October 18-19, 2004.
- [2004-037] Torsten Söderström and Mei Hong. *Identification of Dynamic Errors-in-Variables Systems with Periodic Data*. August 2004.
- [2004-036] Stefan Johansson. *High Order Finite Difference Operators with the Summation by Parts Property Based on DRP Schemes*. August 2004.

- [2004-035] Emad Abd-Elrady and Torsten Söderström. *Bias Analysis in Least Squares Estimation of Periodic Signals Using Nonlinear ODE's*. August 2004.
- [2004-034] Parosh Abdulla, Pritha Mahata and Richard Mayr. *Decidability of Zenoness, Token Liveness and Boundedness of Dense-Timed Petri Nets*. August 2004. To appear in FSTTCS '04.
- [2004-033] Parosh Abdulla, Johann Deneux and Pritha Mahata. *Closed, Open and Robust Timed Networks*. August 2004. To appear in Infinity '04.
- [2004-032] Malin Ljungberg and Kurt Otto. *Curvilinear Coordinates in a PDE Solver Framework; Validation*. August 2004.
- [2004-031] Malin Ljungberg. *Curvilinear Coordinates in a PDE Solver Framework; Analysis*. August 2004.
- [2004-030] Wendy Kress and Per Lötstedt. *Time Step Restrictions using Semi-Implicit Methods for the Incompressible Navier-Stokes Equations*. July 2004.
- [2004-029] Krister Åhlander and Hans Munthe-Kaas. *On Applications of the Generalized Fourier Transform in Numerical Linear Algebra*. July 2004.
- [2004-028] Lars-Henrik Eriksson. *Using Formal Methods in a Retrospective Safety Case*. July 2004. Accepted for publication in the Proceedings of the 23rd International Conference on Computer Safety, Reliability and Security (SAFECOMP'04).
- [2004-027] Thorild Selén. *Reorganisation in the Skewed-Associative TLB*. June 2004. M.Sc. thesis.
- [2004-026] David Lundberg. *Ad Hoc Protocol Evaluation and Experiences of Real World Ad Hoc Networking*. June 2004. M.Sc. thesis.
- [2004-025] David Lundberg. *Feasibility Study of WLAN Technology for the Uppsala - Stockholm Commuter Train*. June 2004.
- [2004-024] Mathias Spjuth, Martin Karlsson and Erik Hagersten. *Low Power and Conflict Tolerant Cache Design*. May 2004.
- [2004-023] Jarmo Rantakokko. *Interactive Learning of Algorithms*. May 2004. Accepted to *Third Program Visualization Workshop (PVW'2004)*.
- [2004-022] Pascal Van Hentenryck, Pierre Flener, Justin Pearson and Magnus Ågren. *Compositional Derivation of Symmetries for Constraint Satisfaction*. May 2004.
- [2004-021] Erik Berg and Erik Hagersten. *Efficient Data-Locality Analysis of Long-Running Applications*. May 2004.

- [2004-020] Malin Ljungberg and Krister Åhlander. *Generic Programming Aspects of Symmetry Exploiting Numerical Software*. May 2004. To appear in the proceedings of the mini-symposium “Software Concepts and Free Software for PDEs” of the ECCOMAS 2004 congress, Jyväskylä, Finland, 24-28 July 2004.
- [2004-019] Owe Axelsson and Maya Neytcheva. *Eigenvalue Estimates for Preconditioned Saddle Point Matrices*. May 2004.
- [2004-018] Emmanuel Papaioannou, Erik Borälv, Athanasios Demiris, Niklas Johansson and Nikolaos Ioannidis. *User Interface Design for Multiplatform Interactive Sports Content Broadcasting*. May 2004. Accepted to AVI 2004 (Advanced Visual Interfaces), Gallipoli (Lecce), Italy.
- [2004-017] Parosh Aziz Abdulla and Aletta Nylen. *Better-Structured Transition Systems*. April 2004.
- [2004-016] Maya Neytcheva, Erik Bängtsson and Björn Lund. *Numerical Solution Methods for Glacial Rebound Models*. April 2004. Typographic corrections April 2005.
- [2004-015] Magnus Ågren. *Set Variables and Local Search*. April 2004. Updated May 2004.
- [2004-014] Pär Samuelson, Björn Halvarsson and Bengt Carlsson. *Analysis of the Input-Output Couplings in a Wastewater Treatment Plant Model*. April 2004.
- [2004-013] Andreas Westling. *Inter-Networking MPLS and SelNet*. April 2004. M.Sc. thesis.
- [2004-012] Parosh Aziz Abdulla, Johann Denez and Pritha Mahata. *Multi-Clock Timed Networks*. April 2004.
- [2004-011] Henrik Björklund, Sven Sandberg and Sergei Vorobyov. *Randomized Subexponential Algorithms for Infinite Games*. April 2004.
- [2004-010] Neil Ghani, Kidane Yemane and Björn Victor. *Relationally Staged Computations in Calculi of Mobile Processes*. March 2004. Accepted for CMCS 2004.
- [2004-009] Henrik Johansson and Johan Steensland. *A Characterization of a Hybrid and Dynamic Partitioner for SAMR Applications*. March 2004.
- [2004-008] Pär Samuelsson and Bengt Carlsson. *An Integrating Linearization Method for Static Input Nonlinearities*. March 2004.
- [2004-007] Erik Nordström, Per Gunningberg and Christian Tschudin. *Comparison of Gateway Forwarding Strategies in Ad hoc Networks*. March 2004.

- [2004-006] Henrik Löf, Markus Nordén and Sverker Holmgren. *Improving Geographical Locality of Data for Shared Memory Implementations of PDE Solvers*. February 2004.
- [2004-005] Håkan Zeffer, Zoran Radovic, Oskar Grenholm and Erik Hagersten. *Evaluation, Implementation and Performance of Write Permission Caching in the DSZOOM System*. February 2004. Updated June 2004.
- [2004-004] Torbjörn Wigren. *Recursive Prediction Error Identification of Non-linear State Space Models*. January 2004.
- [2004-003] Johan Elf, Per Lötstedt and Paul Sjöberg. *Problems of High Dimension in Molecular Biology*. January 2004. This paper was presented at the 19th GAMM-Seminar in Leipzig, January 23-25, 2003.
- [2004-002] Pablo Giambiagi, Gerardo Schneider and Frank D. Valencia. *On the Expressiveness of CCS-like Calculi*. January 2004.
- [2004-001] Torsten Söderström, Torbjörn Wigren and Emad Abd-Elrady. *Maximum Likelihood Modeling of Orbits of Nonlinear ODEs*. January 2004.
- [2003-065] Michael Baldamus, Richard Mayr and Gerardo Schneider. *A Backward/Forward Strategy for Verifying Safety Properties of Infinite-State Systems*. December 2003.
- [2003-064] Arnim Brüger, Bertil Gustafsson, Per Lötstedt and Jonas Nilsson. *High Order Accurate Solution of the Incompressible Navier-Stokes Equations*. December 2003.
- [2003-063] Michael Baldamus, Joachim Parrow and Björn Victor. *Spi Calculus Translated to  $\pi$ -Calculus Preserving May-Testing*. December 2003.
- [2003-062] Emilio Tuosto, Björn Victor and Kidane Yemane. *Polyadic History-Dependent Automata for the Fusion Calculus*. December 2003.
- [2003-061] Lars Ferm and Per Lötstedt. *Space-Time Adaptive Solution of First Order PDEs*. December 2003.
- [2003-060] Pierre Flener. *Realism in Project-Based Software Engineering Courses: Rewards, Risks, and Recommendations*. December 2003.
- [2003-059] Jonas Persson and Lina von Sydow. *Pricing European Multi-asset Options Using a Space-time Adaptive FD-method*. December 2003.
- [2003-058] Erik Berg and Erik Hagersten. *StatCache: A Probabilistic Approach to Efficient and Accurate Data Locality Analysis*. December 2003.
- [2003-057] Erik Berg and Erik Hagersten. *Low-Overhead Spatial and Temporal Data Locality Analysis*. December 2003.
- [2003-056] Parosh Aziz Abdulla, Johann Deneux, Pritha Mahata and Aletta Nylén. *Forward Reachability Analysis of Timed Petri Nets*. December 2003.

- [2003-055] Martin Nilsson. *Rapid Solution of Parameter-Dependent Linear Systems for Electromagnetic Problems in the Frequency Domain*. November 2003.
- [2003-054] Martin Nilsson. *Stability of the Fast Multipole Method for Helmholtz Equation in Three Dimensions*. November 2003.
- [2003-053] Erik Bängtsson and Maya Neytcheva. *Approaches to Reduce the Computational Cost when Solving Linear Systems of Equations Arising in Boundary Element Method Discretizations*. November 2003.
- [2003-052] Magnus Svärd and Jan Nordström. *Well Posed Boundary Conditions for the Navier-Stokes Equations*. November 2003. Updated March 2004.
- [2003-051] Pavel Krcaľ and Wang Yi. *Decidable and Undecidable Problems in Schedulability Analysis Using Timed Automata*. November 2003.
- [2003-050] Alexandre David. *Hierarchical Modeling and Analysis of Timed Systems*. November 2003. PhD thesis.
- [2003-049] Martin Nilsson. *A Parallel Shared Memory Implementation of the Fast Multipole Method for Electromagnetics*. October 2003.
- [2003-048] Timour Katchaounov and Tore Risch. *Interface Capabilities for Query Processing in Peer Mediator Systems*. September 2003.
- [2003-047] Jimmy Flink. *Simuleringsmotor för tågtrafik med stöd för experimentell konfiguration*. September 2003. M.Sc. thesis. In Swedish.
- [2003-046] Mathias Spjuth, Martin Karlsson and Erik Hagersten. *The Elbow Cache: A Power-Efficient Alternative to Highly Associative Caches*. September 2003.
- [2003-045] Sven-Olof Nyström. *A Polyvariant Type Analysis for Erlang*. September 2003.
- [2003-044] Dan Wallin, Henrik Johansson and Sverker Holmgren. *Cache Memory Behavior of Advanced PDE Solvers*. August 2003. A short version of this paper will appear in the proceedings of *Parallel Computing 2003 (ParCo2003)*, Dresden, Germany.
- [2003-043] Kajsa Ljungberg, Sverker Holmgren and Örjan Carlborg. *Simultaneous Search for Multiple QTL Using the Global Optimization Algorithm DIRECT*. August 2003.
- [2003-042] Gerardo Schneider. *Invariance Kernels of Polygonal Differential Inclusions*. August 2003. Updated October 2003.
- [2003-041] Wendy Kress. *A Compact Fourth Order Time Discretization Method for the Wave Equation*. August 2003.
- [2003-040] Wendy Kress. *Error Estimates for Deferred Correction Methods in Time*. August 2003.

- [2003-039] Therese Berg, Bengt Jonsson, Martin Leucker and Mayank Saksena. *Insights to Angluin's Learning*. August 2003.
- [2003-038] Henrik Björklund, Sven Sandberg and Sergei Vorobyov. *On Fixed-Parameter Complexity of Infinite Games*. August 2003.
- [2003-037] Dan Wallin and Erik Hagersten. *Bundling: Reducing the Overhead of Multiprocessor Prefetchers*. August 2003.
- [2003-036] Emad Abd-Elrady, Torsten Söderström and Torbjörn Wigren. *Periodic Signal Modeling Based on Liénard's Equation*. August 2003.
- [2003-035] Elisabeth Larsson and Bengt Fornberg. *Theoretical and Computational Aspects of Multivariate Interpolation with Increasingly Flat Radial Basis Functions*. June 2003.
- [2003-034] Per Lötstedt, Alison Ramage, Lina von Sydow and Stefan Söderberg. *Preconditioned Implicit Solution of Linear Hyperbolic Equations with Adaptivity*. May 2003.
- [2003-033] Daniel Noreland. *A Gradient Based Optimisation Algorithm for the Design of Brass-Wind Instruments*. May 2003.
- [2003-032] Daniel Noreland. *Impedance Boundary Conditions for Acoustic Waves in a Duct with a Step Discontinuity*. May 2003.
- [2003-031] Daniel Noreland. *Ill-Posedness of Absorbing Boundary Conditions Applied on Convex Surfaces*. May 2003.
- [2003-030] M. Ekman, P. Samuelsson and B. Carlsson. *Adaptive Control of the Nitrate Level in an Activated Sludge Process Using an External Carbon Source - Extended Version*. May 2003. A shorter version is also available in: Preprints of Reglermöte 2002, Linköping, Sweden, May 29–30 2002, pp 308–313, and another version in: Proc. of the 1st World Water Congress of the IWA. Melbourne, 2002 (poster presentation). Updated July 2003.
- [2003-029] Oskar Grenholm, Zoran Radovic and Erik Hagersten. *Latency-hiding and Optimizations of the DSZOOM Instrumentation System*. May 2003.
- [2003-028] Erik K. Larsson. *Limiting Properties of Sampled Stochastic Systems*. May 2003.
- [2003-027] Per Carlsson, Arne Andersson and Fredrik Ygge. *A Tractable Mechanism for Time Dependent Markets*. April 2003. Updated October 2004 with new complexity results.
- [2003-026] Henrik Löf, Zoran Radovic and Erik Hagersten. *THROOM — Running POSIX Multithreaded Binaries on a Cluster*. April 2003.
- [2003-025] Torbjörn Wigren and Torsten Söderström. *Second Order ODEs are Sufficient for Modeling of Many Periodic Signals*. April 2003.



- [2003-024] Parosh Aziz Abdulla, Bengt Jonsson, Marcus Nilsson and Julien d’Orso. *Algorithmic Improvements in Regular Model Checking*. April 2003. Extended version of paper accepted for publication in in CAV’2003.
- [2003-023] Bertil Gustafsson and Per Wahlund. *Time Compact Difference Methods for Wave Propagation in Discontinuous Media*. April 2003.
- [2003-022] Bharath Bhikkaji, Kaushik Mahata and Torsten Söderström. *Reduced order models for a two-dimensional heat diffusion system*. April 2003.
- [2003-021] Christian Tschudin and Richard Gold. *LUNAR: Lightweight Underlay Network Ad-hoc Routing*. April 2003. Originally written January 2002; updated April 2002.
- [2003-020] Christian Tschudin and Richard Gold. *SelNet: A Translating Underlay Network*. April 2003. Originally written October 2001.
- [2003-019] Henrik Björklund, Sven Sandberg and Sergei Vorobyov. *Randomized Subexponential Algorithms for Parity Games*. April 2003.
- [2003-018] Magnus Svärd, Ken Mattsson and Jan Nordström. *Steady State Computations Using Summation-by-Parts Operators*. March 2003.
- [2003-017] Henrik Björklund, Sven Sandberg and Sergei Vorobyov. *An Improved Subexponential Algorithm for Parity Games*. March 2003.
- [2003-016] Bertil Gustafsson and Eva Mossberg. *Time Compact High Order Difference Methods for Wave Propagation*. March 2003.
- [2003-015] Henrik Björklund and Sven Sandberg. *Algorithms for Combinatorial Optimization and Games Adapted from Linear Programming*. March 2003.
- [2003-014] Brahim Hnich, Julian Richardson and Pierre Flener. *Towards Automatic Generation and Evaluation of Implied Constraints*. March 2003.
- [2003-013] Ken Mattsson, Magnus Svärd and Jan Nordström. *Stable Artificial Dissipation Operators for High Order Finite Difference Schemes*. February 2003.
- [2003-012] Ken Mattsson and Jan Nordström. *Finite Difference Approximations of Second Derivatives on Summation by Parts Form*. February 2003. Updated 2003-03-21.
- [2003-011] Alexandre David, Gerd Behrmann, Kim G. Larsen and Wang Yi. *A Tool Architecture for the Next Generation of UPPAAL*. February 2003.
- [2003-010] Alexandre David, Johann Deneux and Julien d’Orso. *A Formal Semantics for UML Statecharts*. February 2003.

- [2003-009] Alexandre David, M. Oliver Möller and Wang Yi. *Verification of UML Statecharts with Real-Time Extensions*. February 2003.
- [2003-008] Julian Richardson and Pierre Flener. *Program Schemas as Proof Methods*. February 2003.
- [2003-007] Henrik Brandén, Sverker Holmgren and Per Sundqvist. *Discrete Fundamental Solution Preconditioning for Hyperbolic Systems of PDE*. February 2003.
- [2003-006] Henrik Brandén and Per Sundqvist. *An Algorithm for Computing Fundamental Solutions of Difference Operators*. February 2003.
- [2003-005] Samuel Sundberg. *Solving the linearized Navier-Stokes equations using semi-Toeplitz preconditioning*. February 2003.
- [2003-004] Kaushik Mahata and Torsten Söderström. *Subspace estimation of real-valued sine wave frequencies*. January 2003.
- [2003-003] Magnus Svärd and Jan Nordström. *A Stable and Accurate Summation-by-Parts Finite Volume Formulation of the Laplacian Operator*. January 2003.
- [2003-002] Henrik Björklund, Sven Sandberg and Sergei Vorobyov. *On Combinatorial Structure and Algorithms for Parity Games*. January 2003.
- [2003-001] Parosh Abdulla, Johann Deneux, Pritha Mahata and Aletta Nylén. *Downward Closed Language Generators*. January 2003.
- [2002-041] Per Lötstedt and Martin Nilsson. *A Minimum Residual Interpolation Method for Linear Equations with Multiple Right Hand Sides*. December 2002.
- [2002-040] Torsten Söderström. *Why are errors-in-variables problems often tricky?* November 2002.
- [2002-039] R. Blaheta, S. Margenov and M. Neytcheva. *Uniform estimate of the constant in the strengthened CBS inequality for anisotropic non-conforming FEM systems*. November 2002.
- [2002-038] Parosh Aziz Abdulla and Alexander Rabinovich. *Verification of Probabilistic Systems with Faulty Communication*. November 2002.
- [2002-037] Bob Melander and Mats Björkman. *Trace-Driven Network Path Emulation*. November 2002.
- [2002-036] Bernhard Müller. *Control Errors in CFD!* October 2002. Invited lecture to appear in the Proceedings of the 20th Aerospace Numerical Simulation Symposium at the National Aerospace Laboratory of Japan, held in Tokyo on July 3-5, 2002.
- [2002-035] Ken Mattsson, Magnus Svärd, Mark Carpenter and Jan Nordström. *Accuracy Requirements for Steady and Transient Aerodynamics*. October 2002.

- [2002-034] Stefan Johansson. *Numerical Solution of the Linearized Euler Equations Using High Order Finite Difference Operators with the Summation by Parts Property*. October 2002. Updated version, March 2003, available at <http://www.it.uu.se/research/publications/reports/2002-034/2002-034-updated> (PDF and Postscript).
- [2002-033] Henrik Björklund, Sven Sandberg and Sergei Vorobyov. *Memoryless Determinacy of Parity and Mean Payoff Games: A Simple Proof*. October 2002. Updated journal version, March 2003, available at <http://www.it.uu.se/research/publications/reports/2002-033/2002-033-journal>.
- [2002-032] Carl Åborg and Anders Billing. *Health Problems with Electronic Document Handling: a longitudinal study*. October 2002.
- [2002-031] Carl Åborg, Elisabeth Fernström and Mats Ericson. *Telework Work Environment and Well Being: A Longitudinal Study*. October 2002.
- [2002-030] Henrik Björklund, Sven Sandberg and Sergei Vorobyov. *An Experimental Study of Algorithms for Completely Unimodal Optimization*. October 2002.
- [2002-029] Bengt Eliasson. *Domain Decomposition of the Padé Scheme and Pseudo-Spectral Method, Used in Vlasov Simulations*. October 2002.
- [2002-028] Bengt Eliasson. *Numerical Modelling of the Two-Dimensional Vlasov-Maxwell System*. October 2002.
- [2002-027] Markus Nordén, Sverker Holmgren and Michael Thuné. *OpenMP versus MPI for PDE Solvers Based on Regular Sparse Numerical Operators*. October 2002.
- [2002-026] Henrik Björklund, Sven Sandberg and Sergei Vorobyov. *A Discrete Subexponential Algorithm for Parity Games*. September 2002.
- [2002-025] Paul Pettersson and Wang Yi (eds.). *Workshop on Real-Time Tools (Proceedings)*. July 2002.
- [2002-024] Jakob Engblom and Magnus Nilsson. *Time Accurate Simulation: Making a PC Behave Like a 8-Bit Embedded CPU*. July 2002.
- [2002-023] Lars Ferm and Per Lötstedt. *Anisotropic grid adaptation for Navier-Stokes' equations*. June 2002.
- [2002-022] Henrik Lundgren, Erik Nordström and Christian Tschudin. *Coping with Communication Gray Zones in IEEE 802.11b based Ad hoc Networks*. June 2002.
- [2002-021] Johan Runeson and Sven-Olof Nyström. *Generalizing Chaitin's Algorithm: Graph-Coloring Register Allocation for Irregular Architectures*. May 2002.
- [2002-020] Tobias Amnell, Elena Fersman, Paul Pettersson, Hongyan Sun and Wang Yi. *Code Synthesis for Timed Automata*. May 2002.

- [2002-019] Erik Bängtsson, Daniel Noreland and Martin Berggren. *Shape optimization of an acoustic horn*. May 2002.
- [2002-018] Henrik Björklund, Sven Sandberg and Sergei Vorobyov. *Optimization on Completely Unimodal Hypercubes*. May 2002.
- [2002-017] Eva Olsson, Stefan Seipel, Anders Jansson and Bengt Sandblad. *The Windscreen Used as a Display for Navigation Information. An introductory study*. May 2002.
- [2002-016] Fredrik Edelvik. *A New Technique for Accurate and Stable Modeling of Arbitrarily Oriented Thin Wires in the FDTD Method*. April 2002.
- [2002-015] Andreas Johnsson. *Differentiated Security in Wireless Networks*. April 2002. M.Sc. thesis.
- [2002-014] Samuel Sundberg and Lina von Sydow. *Analysis of a semi-Toeplitz preconditioner for a convection-diffusion problem*. April 2002.
- [2002-013] Jakob Engblom. *Effects of Branch Predictors on Execution Time*. April 2002.
- [2002-012] Lars Ferm and Per Lötstedt. *Accurate and Stable Grid Interfaces for Finite Volume Methods*. March 2002.
- [2002-011] Sheayun Lee, Andreas Ermedahl, Sang Lyul Min and Naehyuck Chang. *Statistical Derivation of an Accurate Energy Consumption Model for Embedded Processors*. March 2002.
- [2002-010] Jonas Boustedt. *Automated Analysis of Dynamic Web Services*. March 2002. M.Sc. thesis.
- [2002-009] Andy Bavier, Thiemo Voigt, Mike Wawrzoniak, Larry Peterson and Per Gunningberg. *SILK: Scout Paths in the Linux Kernel*. February 2002.
- [2002-008] Henrik Björklund and Sergei Vorobyov. *Two Adversary Lower Bounds for Parity Games*. February 2002.
- [2002-007] F. Edelvik, G. Ledfelt, P. Lötstedt and D. J. Riley. *An Unconditionally Stable Subcell Model for Arbitrarily Oriented Thin Wires in the FETD Method*. February 2002.
- [2002-006] Anders Berglund. *How do students understand network protocols? A phenomenographic study*. February 2002.
- [2002-005] Kajsa Ljungberg, Sverker Holmgren and Örjan Carlborg. *Efficient Kernel Algorithms for QTL Mapping Problems*. February 2002.
- [2002-004] Mats Löfberg, Jan Gulliksen and Torsten Norlander. *Användare i systemutvecklingsprocessen - ett fenomenologiskt perspektiv*. February 2002. In Swedish.
- [2002-003] Ken Mattsson, Magnus Svärd and Jan Nordström. *Stable and accurate artificial dissipation*. January 2002.

- [2002-002] S. Seipel and M. Lindkvist. *Methods and application of interactive 3D computer graphics in anthropology*. January 2002.
- [2002-001] Sônia M. Gomes and Bertil Gustafsson. *Combining Wavelets with Finite Differences: Consistency Analysis*. January 2002.
- [2001-030] Jakob Engblom, Andreas Ermedahl and Friedhelm Stappert. *Validating a Worst-Case Execution Time Analysis Method for an Embedded Processor*. December 2001.
- [2001-029] Henrik Lundgren, David Lundberg, Johan Nielsen, Erik Nordström and Christian Tschudin. *A Large-scale Testbed for Reproducible Ad hoc Protocol Evaluations*. November 2001. A shorter version of this paper is accepted for publication in the proceedings of IEEE WCNC'02.
- [2001-028] Magnus Berggren. *Wireless communication in telemedicine using Bluetooth and IEEE 802.11b*. November 2001. M.Sc. thesis.
- [2001-027] K. Mahata, T. Söderström, M. Mossberg, L. Hillström and S. Mousavi. *On the use of flexural wave propagation experiments for identification of complex modulus*. November 2001. Also in the proceedings of 3rd International Conference on Identification of Engineering System, Swansea 2002.
- [2001-026] Jan Gulliksen and Inger Boivie. *Usability Throughout the Entire Software Development Lifecycle - A Summary of the INTERACT 2001 Workshop*. November 2001.
- [2001-025] Emmanuel Boffara and Sergei Vorobyov. *Is Randomized Gurvich-Karzanov-Khachiyan's Algorithm for Parity Games Polynomial?* November 2001.
- [2001-024] Larisa Beilina, Klas Samuelsson and Krister Åhlander. *A hybrid method for the wave equation*. October 2001. Also available as Preprint 2001-14 in Chalmers Finite Element Center Preprint series.
- [2001-023] Pierre Flener, Alan Frisch, Brahim Hnich, Zeynep Kiziltan, Ian Miguel and Toby Walsh. *Matrix Modelling*. September 2001. Also released as Technical Report APES-36-2001 of the APES group, 2001, available at <http://www.dcs.st-and.ac.uk/~apes/reports/apes-36-2001.ps.gz>. Appears in the Proceedings of the CP-01 Workshop on Modelling and Problem Formulation. 7th International Conference on the Principles and Practice of Constraint Programming, 2001.
- [2001-022] Pierre Flener, Alan Frisch, Brahim Hnich, Zeynep Kiziltan, Ian Miguel, Justin Pearson and Toby Walsh. *Symmetry in Matrix Models*. September 2001. Also released as Technical Report APES-30-2001 of the APES group, 2001, available at <http://www.dcs.st-and.ac.uk/~apes/reports/apes-30-2001.ps.gz>. Appears in the Proceedings of the CP-01 Workshop on Symmetry in Constraints. 7th International Conference on the Principles and Practice of Constraint Programming, 2001.

- [2001-021] Inger Boivie. *Usability and Design Decisions in Software Development*. September 2001.
- [2001-020] Emmanuel Beffara and Sergei Vorobyov. *Adapting Gurvich-Karzanov-Khachiyan's Algorithm for Parity Games: Implementation and Experimentation*. September 2001.
- [2001-019] Wendy Kress and Jonas Nilsson. *Boundary conditions and estimates for the linearized Navier-Stokes equations on staggered grids*. September 2001.
- [2001-018] Emad Abd-Elrady. *An adaptive grid point RPEM algorithm for harmonic signal modeling*. August 2001.
- [2001-017] Henrik Björklund, Viktor Petersson and Sergei Vorobyov. *Experiments with Iterative Improvement Algorithms on Completely Unimodal Hypercubes*. August 2001.
- [2001-016] Robert Stjernström. *User-Centred Design of a Train Driver Display*. August 2001. M.Sc. thesis.
- [2001-015] Magnus Svärd. *On coordinate transformations for summation-by-parts operators*. August 2001.
- [2001-014] Paul Pettersson and Sergio Yovine. *Workshop on Real-Time Tools (Proceedings)*. August 2001.
- [2001-013] Eva Olsson, Lena Kecklund, Michael Ingre and Anders Jansson. *Lokförarens informationsmiljö och ATC. Ett användarperspektiv*. June 2001. In Swedish.
- [2001-012] Friedhelm Stappert, Andreas Ermedahl and Jakob Engblom. *Efficient Longest Executable Path Search for Programs with Complex Flows and Pipeline Effects*. June 2001.
- [2001-011] Torsten Söderström, Umberto Soverini and Kaushik Mahata. *Perspectives on errors-in-variables estimation for dynamic systems*. May 2001.
- [2001-010] Thiemo Voigt and Per Gunningberg. *Dealing with Memory-Intensive Web Requests*. May 2001.
- [2001-009] Johan Bengtsson. *Reducing Memory Usage in Symbolic State-Space Exploration for Timed Systems*. May 2001.
- [2001-008] Viktor Petersson and Sergei Vorobyov. *Parity Games: Interior-Point Approach*. May 2001.
- [2001-007] Sven Montan. *Validation of Cycle-Accurate CPU Simulators against Real Hardware*. April 2001. M.Sc. thesis.
- [2001-006] Erik K. Larsson and Torsten Söderström. *Identification of Continuous-Time AR Processes by Using Limiting Properties of Sampled Systems*. March 2001.

- [2001-005] Yordanos G. Beyene. *Firewalls in Linux: Principles and Implementation*. February 2001. M.Sc. thesis.
- [2001-004] Bernhard Müller and H.C. Yee. *High Order Numerical Simulation of Sound Generated by the Kirchhoff Vortex*. February 2001. Published as RIACS Technical Report 01.02, Jan. 2001, NASA Ames Research Center, and submitted to Computing and Visualization in Science.
- [2001-003] Karl Hörnell and Per Lötstedt. *Adaptive Iteration to Steady State of Flow Problems*. February 2001.
- [2001-002] Johan Steensland. *Dynamic Structured Grid Hierarchy Partitioners Using Inverse Space-Filling Curves*. February 2001.
- [2001-001] Viktor Petersson and Sergei Vorobyov. *A Randomized Subexponential Algorithm for Parity Games*. January 2001.
- [2000-035] Henrik Brandén and Sverker Holmgren. *Convergence acceleration for the steady state Euler equations*. December 2000.
- [2000-034] Alexander Shen. *Algorithmic Information Theory and Kolmogorov Complexity*. December 2000.
- [2000-033] Eva Olsson, Bengt Sandblad and Lena Kecklund. *Säkerhetssamtal. Nuläge och förändringsbehov*. December 2000. In Swedish.
- [2000-032] Henrik Brandén and Per Sundqvist. *Preconditioners Based on Fundamental Solutions*. November 2000. Revised version available as IT technical report 2005-001.
- [2000-031] Anders Jansson, Eva Olsson and Lena Kecklund. *Att köra tåg*. November 2000. In Swedish.
- [2000-030] Richard Carlsson, Björn Gustavsson, Erik Johansson, Thomas Lindgren, Sven-Olof Nyström, Mikael Pettersson and Robert Viriding. *Core Erlang 1.0 language specification*. November 2000.
- [2000-029] Mikael Pettersson. *A staged tag scheme for Erlang*. November 2000.
- [2000-028] Bharath Bhikkaji and Torsten Söderström. *Reduced order models for diffusion systems using singular perturbations*. November 2000.
- [2000-027] Emad Abd-Elrady. *Convergence of the RPEM as Applied to Harmonic Signal Modeling*. October 2000.
- [2000-026] Henrik Brandén. *Numerical Boundary Conditions for ODE*. October 2000.
- [2000-025] Huimin Lin and Wang Yi. *A Complete Axiomatisation for Timed Automata*. September 2000. A short version of this paper will be included in the proceedings of 20th FST-TCS, 2000.
- [2000-024] Saul Abarbanel, Adi Ditkowski and Bertil Gustafsson. *On error bounds of finite difference approximations to partial differential equations - temporal behavior and rate of convergence*. September 2000.

- [2000-023] Per Lötstedt, Stefan Söderberg, Alison Ramage and Lina Hemmingsson-Frändén. *Implicit solution of hyperbolic equations with space-time adaptivity*. September 2000.
- [2000-022] Johan Runeson, Sven-Olof Nyström and Jan Sjödin. *Optimizing Code Size through Procedural Abstraction*. September 2000. An extended abstract appears in the Proceedings of the ACM SIGPLAN 2000 Workshop on Languages, Compilers, and Tools for Embedded Systems (LCTES'2000).
- [2000-021] Parosh Aziz Abdulla and Aletta Nylén. *BQOs and Timed Petri Nets*. August 2000.
- [2000-020] Karl Hörnell and Per Lötstedt. *Time step selection for shock problems*. August 2000.
- [2000-019] Torsten Söderström and Bharath Bhikaji. *Reduced order models for diffusion systems*. August 2000.
- [2000-018] Torsten Söderström and Bharath Bhikaji. *Reduced order models for diffusion systems via collocation methods*. August 2000.
- [2000-017] Arne Andersson, Per Carlsson and Fredrik Ygge. *Resource Allocation With Noisy Functions*. August 2000.
- [2000-016] Ken Mattsson. *Imposing Boundary Conditions with the Injection, the Projection and the Simultaneous Approximation Term Method*. July 2000.
- [2000-015] Petre Stoica and Girish Ganesan. *On a Parameter Estimation Algorithm for MA Time Series*. June 2000.
- [2000-014] Sergei Vorobyov. *Better Decision Algorithms for Parity Games and the Mu-Calculus Model Checking*. June 2000.
- [2000-013] Marcus Johansson. *Loss of High Order Spatial Accuracy Due to Boundary Error Caused by Runge-Kutta Time Integration*. May 2000.
- [2000-012] Maria Karlsson and Fredrik Ygge. *Market-based Approaches to Optimization*. May 2000.
- [2000-011] Arne Andersson and Fredrik Ygge. *Managing Large Scale Computational Markets*. April 2000.
- [2000-010] Jakob Carlström. *Efficient Approximation of Values in Gain scheduled Routing*. April 2000.
- [2000-009] Jakob Carlström and Ernst Nordström. *Gain Scheduled Routing in Multi-Service Networks*. April 2000.
- [2000-008] Jakob Carlström. *Predictive Gain Scheduling for Control of Self-Similar Call Traffic in Broadband Networks*. April 2000.
- [2000-007] Lars Ferm and Per Lötstedt. *On numerical errors in the boundary conditions of the Euler equations*. April 2000.



- [2000-006] Elisabeth Larsson and Sverker Holmgren. *A Parallel Domain Decomposition Method for the Helmholtz Equation*. April 2000.
- [2000-005] Pär Samuelsson and Bengt Carlsson. *Feedforward control of the external carbon flow rate in an activated sludge process*. March 2000. A short version will appear at the 1st World Congress of the IWA, Paris 3-7 July 2000.
- [2000-004] Bengt Göransson and Jan Gulliksen. *Användarcentrerad systemutveckling*. March 2000. In Swedish. Also available as report TRITA-NA-D 0005, CID-71, KTH, Stockholm, Sweden. An extended and revised version is available in the book *Användarcentrerad systemdesign*, see <http://acsd.hci.uu.se>.
- [2000-003] Lars Ferm and Per Lötstedt. *Adaptive error control for steady state solutions of inviscid flow*. February 2000.
- [2000-002] Biniam Gebremichael and Kidane Yemane. *Linux Networking*. January 2000. M.Sc. thesis.
- [2000-001] Richard Carlsson. *Extending Erlang with structured module packages*. January 2000.
- [1999-016] Arne Andersson, Mattias Tenhunen and Fredrik Ygge. *Integer Programming for Automated Auctions*. November 1999. Final version published at ICMAS-00 available from <http://www.csd.uu.se/~arnea/abs/icmas00.html>.
- [1999-015] Bertil Gustafsson and Jonas Nilsson. *Boundary Conditions and Estimates for the Steady Stokes Equations on Staggered Grids*. November 1999.
- [1999-014] Bertil Gustafsson. *The Godunov-Ryabenkii condition: The beginning of a new stability theory*. November 1999.
- [1999-013] Huimin Lin and Wang Yi. *A Proof System for Timed Automata*. November 1999. To be included in the proceedings of FOSSACS'00.
- [1999-012] Erik G. Larsson and Petre Stoica. *Array Signal Processing with Incomplete Data*. November 1999.
- [1999-008] Björn Victor and Wang Yi (Eds.). *Proceedings of the 11th Nordic Workshop on Programming Theory*. October 1999.
- [1999-007] Andreas Jakobsson, S. Lawrence Marple, Jr. and Petre Stoica. *Two-Dimensional Capon Spectrum Analysis*. September 1999.
- [1999-006] Andreas Gustavsson and Mattias Ersson. *Formalizing the Intent of Design Patterns. An Approach Towards a Solution to the Indexing Problem*. July 1999.
- [1999-005] Anders Jansson, Erik Lindberg and Eva Olsson. *Trafiksäkerhet och informationsmiljö i tågförarsystemet. Litteraturöversikt och olycksfallsanalyser*. June 1999. In Swedish.

- [1999-004] Amnon H. Eden, Yoram Hirshfeld and Amiram Yehudai. *Towards a Mathematical Foundation for Design Patterns*. May 1999.
- [1999-003] Torsten Söderström and Susanne Halvarsson. *Parameter Estimation for Diffusion Models*. May 1999.
- [1999-002] Kristina Lundqvist and Lars Asplund. *A Formal Model of a Ravenscar-Compliant Run-Time Kernel and Application Code*. May 1999.
- [1999-001] Torsten Söderström. *Perturbation Results for Singular Values*. April 1999.