Technical reports from the Department of Information Technology

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[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.


[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.


[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 sub-
sonic and supersonic flow).

[2012-032] Sofia Eriksson and Jan Nordström. Exact Non-Reflecting Boundary

[2012-031] Parosh Aziz Abdulla, Mohamed Faouzi Atig and Jonathan Ceder-


[2012-029] David Eklöv, Nikos Nikoleris, David Black-Schaffer and Erik Hager-
sten. Quantitative Characterization of Memory Contention. October
2012.

[2012-028] Per Pettersson, Alireza Doostan and Jan Nordström. On Stability
and Monotonicity Requirements of Discretized Stochastic Conserva-


[2012-026] Carl Nettelblad. Inferring Haplotypes and Parental Genotypes in
Large 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 Condi-
tions on Dual Consistent Finite Difference Discretizations. Septem-
ber 2012.

[2012-024] Katharina Kormann and Elisabeth Larsson. An RBF-Galerkin Ap-
proach to the Time-Dependent Schrödinger Equation. September
2012.

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 Vari-
able Based Chaos Method for the Euler Equations under Uncertainty.
August 2012. A compete 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-


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

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.

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

StatCC: Design and Evaluation.  
June 2010.

Interaction of Waves with Frictional Interfaces Using Summation-By-Parts Difference Operators, 2. Extension to Full Elastodynamics.  
June 2010.

June 2010.

Parametric Identification of Complex Modulus.  
June 2010.

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.

Ways to Understand Class Diagrams.  

A Student Perspective on Software Development and Maintenance.  
March 2010.

Recursive Prediction Error Identification and Scaling of Non-linear Systems with Midpoint Numerical Integration.  
March 2010.


Reduced order models for diffusion systems. August 2000.

Reduced order models for diffusion systems via collocation methods. August 2000.


Loss of High Order Spatial Accuracy Due to Boundary Error Caused by Runge-Kutta Time Integration. May 2000.


Managing Large Scale Computational Markets. April 2000.

Efficient Approximation of Values in Gain scheduled Routing. April 2000.

Gain Scheduled Routing in Multi-Service Networks. April 2000.

Predictive Gain Scheduling for Control of Self-Similar Call Traffic in Broadband Networks. April 2000.

On numerical errors in the boundary conditions of the Euler equations. April 2000.


