Technical reports from the Department of Information Technology

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[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.


[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 subsonic and supersonic flow).


Jens Berg and Jan Nordström. *A Stable and Dual Consistent Boundary Treatment Using Finite Differences on Summation-By-Parts Form*. July 2012.


[2010-026] Xin He, Maya Neytcheva and Stefano Serra Capizzano. On an Augmented Lagrangian-Based Preconditioning of Oseen Type Problems. November 2010.


[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.


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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.


