Comparison of linear and non-linear monotonicity-based shape reconstruction using exact matrix characterizations
Garde, H. 2018 In: Inverse Problems in Science and Engineering. 26, 1, p. 33-50
Publication: Research - peer-review › Journal article – Annual report year: 2018

Computing segmentations directly from x-ray projection data via parametric deformable curves: Paper
Publication: Research - peer-review › Journal article – Annual report year: 2018

Near-wellbore modeling of a horizontal well with Computational Fluid Dynamics
Publication: Research - peer-review › Journal article – Annual report year: 2018

Overnight glucose control in people with type 1 diabetes
Publication: Research - peer-review › Journal article – Annual report year: 2018

Evaluation of pharmacokinetic model designs for subcutaneous infusion of insulin aspart
Publication: Research - peer-review › Journal article – Annual report year: 2017

Cauchy Noise Removal by Nonconvex ADMM with Convergence Guarantees
Publication: Research - peer-review › Journal article – Annual report year: 2017

A Convex Reconstruction Model for X-ray Tomographic Imaging with Uncertain Flat-fields
Publication: Research - peer-review › Journal article – Annual report year: 2017

Adaptive control in an artificial pancreas for people with type 1 diabetes
Publication: Research - peer-review › Journal article – Annual report year: 2016

Adaptive Unscented Kalman Filter using Maximum Likelihood Estimation
Publication: Research - peer-review › Conference article – Annual report year: 2017

A deep learning approach to adherence detection for type 2 diabetics
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Adiabatic continuous stirred tank reactor
Publication: Research - peer-review » Report – Annual report year: 2017

A high-performance Riccati based solver for tree-structured quadratic programs
Publication: Research - peer-review » Conference article – Annual report year: 2017

AIR Tools II: algebraic iterative reconstruction methods, improved implementation
Publication: Research - peer-review » Journal article – Annual report year: 2017

A least squares approach for efficient and reliable short-term versus long-term optimization
Christiansen, L. H., Capolei, A. & Jørgensen, J. B. 2017 In : Computational Geosciences. 21, 3, p. 411-26
Publication: Research - peer-review » Journal article – Annual report year: 2017

An Adaptive Nonlinear Basal-Bolus Calculator for Patients With Type 1 Diabetes
Publication: Research - peer-review » Journal article – Annual report year: 2017

An algorithm for gradient-based dynamic optimization of UV flash processes
Publication: Research - peer-review » Journal article – Annual report year: 2017

An efficient and rigorous thermodynamic library and optimal-control of a cryogenic air separation unit
Publication: Research - peer-review » Article in proceedings – Annual report year: 2017

An experimentally validated simulation model for a four-stage spray dryer
Publication: Research - peer-review » Journal article – Annual report year: 2017

A Novel Approach for Risk Minimization in Life-Cycle Oil Production Optimization
Publication: Research - peer-review » Article in proceedings – Annual report year: 2017

A Riccati-Based Interior Point Method for Efficient Model Predictive Control of SISO Systems
Publication: Research - peer-review » Conference article – Annual report year: 2017

Artifacts and Visible Singularities in Limited Data X-Ray Tomography
Quinto, T. 2017 In : Sensing and Imaging. 18, 1, 14 p.
Publication: Research - peer-review » Journal article – Annual report year: 2017

A Thermodynamic Library for Simulation and Optimization of Dynamic Processes
Publication: Research - peer-review » Conference article – Annual report year: 2017

Bounds on the stably recoverable information for the Helmholtz equation in R^2
Publication: Research - peer-review » Conference abstract in proceedings – Annual report year: 2017
C code generation applied to nonlinear model predictive control for an artificial pancreas
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Comparison of three control strategies for optimization of spray dryer operation
Publication: Research - peer-review › Journal article – Annual report year: 2017

Computation of Phase Equilibrium and Phase Envelopes
Publication: Research - peer-review › Report – Annual report year: 2017

Cross-Validation of a Glucose-Insulin-Glucagon Pharmacodynamics Model for Simulation using Data from Patients with Type 1 Diabetes
Publication: Research - peer-review › Journal article – Annual report year: 2017

Data Descriptor: A multiscale imaging and modelling dataset of the human inner ear
Publication: Research - peer-review › Journal article – Annual report year: 2017

Design, economics and parameter uncertainty in dynamic operation of post-combustion CO2 capture using piperazine (PZ) and MEA
Publication: Research - peer-review › Conference article – Annual report year: 2016

Distinguishability Revisited: Depth Dependent Bounds on Reconstruction Quality in Electrical Impedance Tomography: Depth dependent bounds on reconstruction quality in electrical impedance tomography
Publication: Research - peer-review › Journal article – Annual report year: 2017

Distributed primal–dual interior-point methods for solving tree-structured coupled convex problems using message-passing
Khoshfetrat Pakazad, S., Hansson, A., Andersen, M. S. & Nielsen, I. 2017 In : Optimization Methods and Software. 32, 3, p. 401-435
Publication: Research - peer-review › Journal article – Annual report year: 2016

Dynamic Optimization of UV Flash Processes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Economic MPC based on LPV model for thermostatically controlled loads
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017
Economic Optimizing Control for Single-Cell Protein Production in a U-Loop Reactor
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Fault and meal detection by redundant continuous glucose monitors and the unscented Kalman filter
Publication: Research - peer-review › Journal article – Annual report year: 2017

Finite volume method room acoustic simulations integrated into the architectural design process
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2017

Hardware Tailored Linear Algebra for Implicit Integrators in Embedded NMPC.
Publication: Research - peer-review › Conference article – Annual report year: 2017

Helbredstjek af dansk sundhedsteknologi: Sektorudviklingsrapport
Publication: Commissioned › Report – Annual report year: 2017

Image fusion and denoising using fractional-order gradient information
Publication: Research › Report – Annual report year: 2017

Image reconstruction under non-Gaussian noise
Publication: Research › Ph.D. thesis – Annual report year: 2017

Implementation of advanced process control on the four tank pilot plant
Publication: Research › Report – Annual report year: 2017

Iterative Reconstruction Methods for Inverse Problems in Tomography with Hybrid Data
Publication: Research › Ph.D. thesis – Annual report year: 2018

LBAS: Lanczos Bidiagonalization with Subspace Augmentation for Discrete Inverse Problems
Publication: Research › Report – Annual report year: 2017

Linear discrete-time state space realization of a modified quadruple tank system with state estimation using Kalman filter
Publication: Research - peer-review › Conference article – Annual report year: 2017
Model for Simulating Fasting Glucose in Type 2 Diabetes and the Effect of Adherence to Treatment.
Publication: Research - peer-review › Conference article – Annual report year: 2017

Modeling Pharmacokinetics and Pharmacodynamics of Glucagon for Simulation of the Gluco-regulatory System in Patients with Type 1 Diabetes.
Publication: Research › Ph.D. thesis – Annual report year: 2017

Modeling surface imperfections in thin films and nanostructured surfaces
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Multilevel techniques for Reservoir Simulation
Publication: Research › Ph.D. thesis – Annual report year: 2017

Multiple shooting applied to robust reservoir control optimization including output constraints on coherent risk measures
Publication: Research - peer-review › Journal article – Annual report year: 2017

Numerical Multilevel Upscaling for Incompressible Flow in Reservoir Simulation: An Element-based Algebraic Multigrid (AMGe) Approach
Publication: Research - peer-review › Journal article – Annual report year: 2017

Offset Risk Minimization for Open-loop Optimal Control of Oil Reservoirs
Capolei, A., Christiansen, L. H. & Jørgensen, J. B. 2017 In : IFAC-PapersOnLine. 50, 1, p. 10620-10625
Publication: Research - peer-review › Journal article – Annual report year: 2017

Polynomial Collocation for Handling an Inaccurately Known Measurement Configuration in Electrical Impedance Tomography
Publication: Research - peer-review › Journal article – Annual report year: 2017

Random walks with statistical shape prior for cochlea and inner ear segmentation in micro-CT images
Publication: Research - peer-review › Journal article – Annual report year: 2017

Reduction of variable-truncation artifacts from beam occlusion during in situ x-ray tomography: Paper
Borg, L., Jørgensen, J. S., Frikel, J. & Sporring, J. 2017 In : Measurement Science and Technology. 28, 12, 19 p., 124004
Publication: Research - peer-review › Journal article – Annual report year: 2017

Relationship between Optimum Mini-doses of Glucagon and Insulin Levels when Treating Mild Hypoglycaemia in Patients with Type 1 Diabetes - A Simulation Study
Publication: Research - peer-review › Journal article – Annual report year: 2017
Segmentation-Driven Tomographic Reconstruction.
Publication: Research › Ph.D. thesis – Annual report year: 2017

Simulating clinical studies of the glucoregulatory system: in vivo meets in silico
Publication: Research › Report – Annual report year: 2017

SparseBeads data: benchmarking sparsity-regularized computed tomography
Publication: Research - peer-review › Journal article – Annual report year: 2017

Stochastic derivation and solution of simplified radiative transfer using the Fokker-Planck equation
Karamehmedovic, M., Chen, X. & Karamehmedovic, M. 2017
Publication: Research - peer-review › Poster – Annual report year: 2017

The Adjoint Method for Gradient-based Dynamic Optimization of UV Flash Processes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Tomographic image reconstruction using training images
Publication: Research - peer-review › Journal article – Annual report year: 2016

Tomographic Reconstruction Methods for Decomposing Directional Components
Publication: Research › Report – Annual report year: 2017

Total Variation Based Parameter-Free Model for Impulse Noise Removal
Sciacchitano, F., Dong, Y. & Andersen, M. S. 2017 In : Numerical Mathematics-theory Methods and Applications. 10, 1, p. 186-204
Publication: Research - peer-review › Journal article – Annual report year: 2017

Towards characterizing and reducing artifacts caused by varying projection truncation
Publication: Research › Report – Annual report year: 2017

Unified quantum theory of elastic and inelastic atomic scattering from a physisorbed monolayer solid
Publication: Research - peer-review › Journal article – Annual report year: 2017

User-friendly simultaneous tomographic reconstruction and segmentation with class priors
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017
Validation of a Simulation Model Describing the Glucose-Insulin-Glucagon Pharmacodynamics in Patients with Type 1 Diabetes
Publication: Research › Poster – Annual report year: 2017

A Hierarchical Algorithm for Integrated Scheduling and Control With Applications to Power Systems
Publication: Research - peer-review › Journal article – Annual report year: 2017

Algorithms and Methods for High-Performance Model Predictive Control
Publication: Research › Ph.D. thesis – Annual report year: 2016

An analytic mapping property of the Dirichlet-to-Neumann operator in Helmholtz boundary problems
Karamehmedovic, M. 2016
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

An Efficient Implementation of Partial Condensing for Nonlinear Model Predictive Control
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

An Efficient UD-Based Algorithm for the Computation of Maximum Likelihood Sensitivity of Continuous-Discrete Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

An Ensemble Nonlinear Model Predictive Control Algorithm in an Artificial Pancreas for People with Type 1 Diabetes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

An open-source thermodynamic software library
Publication: Research › Report – Annual report year: 2016

Application of Economic MPC to Frequency Control in a Single-Area
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Application of the Continuous-Discrete Extended Kaiman Filter for Fault Detection in Continuous Glucose Monitors for Type 1 Diabetes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

A robust WENO scheme for nonlinear waves in a moving reference frame
Publication: Research - peer-review › Journal article – Annual report year: 2016
A Spectral Geometrical Model for Compton Scatter Tomography Based on the SSS Approximation
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

A stabilised nodal spectral element method for fully nonlinear water waves
Publication: Research - peer-review › Journal article – Annual report year: 2016

A tensor-based dictionary learning approach to tomographic image reconstruction
Publication: Research - peer-review › Journal article – Annual report year: 2016

A two-stage model of rough-interface scattering for embedded nano-structures
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Automatic Model Generation Framework for Computational Simulation of Cochlear Implantation
Publication: Research - peer-review › Journal article – Annual report year: 2016

Bregman Cost for Non-Gaussian Noise
Publication: Research › Report – Annual report year: 2016

Cauchy Noise Removal by Nonconvex ADMM with Convergence Guarantees
Publication: Research › Report – Annual report year: 2016

Cochlear implant electrode localization in post-operative CT using a spherical measure
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Cochlea Segmentation using Iterated Random Walks with Shape Prior
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Comparison of Three Nonlinear Filters for Fault Detection in Continuous Glucose Monitors
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Contrast Invariant SNR
Publication: Research › Report – Annual report year: 2016
Efficient uncertainty quantification of a fully nonlinear and dispersive water wave model with random inputs
Publication: Research - peer-review › Journal article – Annual report year: 2016

Enzymes in CO2 Capture
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

High-definition velocity-space tomography of fast-ion dynamics
Publication: Research - peer-review › Journal article – Annual report year: 2016

Industrial application of model predictive control to a milk powder spray drying plant
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Inexact proximal Newton methods for self-concordant functions
Publication: Research - peer-review › Journal article – Annual report year: 2016

Large-scale Optimization of Contoured Beam Reflectors and Reflectarrays
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Limited Data Problems for the Generalized Radon Transform in $\mathbb{R}^n$
Publication: Research - peer-review › Journal article – Annual report year: 2016

Methods and Algorithms for Economic MPC in Power Production Planning
Publication: Research › Ph.D. thesis – Annual report year: 2016

Model Identification using Continuous Glucose Monitoring Data for Type 1 Diabetes
Publication: Research - peer-review › Conference article – Annual report year: 2016

Modeling and Control of Price Responsive Electricity Loads
Publication: Research › Ph.D. thesis – Annual report year: 2016

Modeling and Prediction Using Stochastic Differential Equations
Publication: Research - peer-review › Book chapter – Annual report year: 2016
Modelling of glucose-insulin-glucagon pharmacodynamics in man
Publication: Research - peer-review › Paper – Annual report year: 2016

Modelling the glucose-insulin-glucagon dynamics after subcutaneous administration of native glucagon and a novel glucagon analogue in dogs
Publication: Research - peer-review › Poster – Annual report year: 2016

Modelling the glucose-insulin-glucagon dynamics after subcutaneous administration of native glucagon and a novel glucagon analogue in dogs
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Model of the Glucose-Insulin-Glucagon Dynamics after Subcutaneous Administration of a Glucagon Rescue Bolus in Healthy Humans
Publication: Research › Poster – Annual report year: 2016

Model of the Glucose-Insulin-Glucagon Dynamics after Subcutaneous Administration of a Glucagon Rescue Bolus in Healthy Humans
Publication: Research › Conference abstract for conference – Annual report year: 2016

Multi-region Statistical Shape Model for Cochlear Implantation
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Noise robustness of a combined phase retrieval and reconstruction method for phase-contrast tomography
Publication: Research - peer-review › Journal article – Annual report year: 2016

Nonlinear Multigrid for Reservoir Simulation
Publication: Research - peer-review › Journal article – Annual report year: 2015

Nonlinear Multigrid solver exploiting AMGe Coarse Spaces with Approximation Properties
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

On nonlinear wave-structure interaction using an immersed boundary method in 2D
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2016

On the significance of the noise model for the performance of a linear MPC in closed-loop operation
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

PK/PD modelling of glucose-insulin-glucagon dynamics in healthy dogs after a subcutaneous bolus administration of native glucagon or a novel glucagon analogue
3D reconstruction for partial data electrical impedance tomography using a sparsity prior
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

A Bolus Calculator Based on Continuous-Discrete Unscented Kalman Filtering for Type 1 Diabetics
Publication: Research - peer-review › Conference article – Annual report year: 2015

A Continuous-Discrete Extended Kalman Filter for State and Parameter Estimation in People with Type 1 Diabetes
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Adaptive spectral tensor-strain decomposition for the construction of surrogate models
Bigoni, D., Engsig-Karup, A. P. & Marzouk, Y. M. 2015
Publication: Research - peer-review › Poster – Annual report year: 2015

A dynamic mathematical model for packed columns in carbon capture plants
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

A Homogeneous and Self-Dual Interior-Point Linear Programming Algorithm for Economic Model Predictive Control
Publication: Research - peer-review › Journal article – Annual report year: 2015

Algorithms for Electromagnetic Scattering Analysis of Electrically Large Structures
Publication: Research › Ph.D. thesis – Annual report year: 2015

Analysis of Electrically Large Antennas using Fast Physical Optics
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

An artificial pancreas for automated blood glucose control in patients with Type 1 diabetes
Schmidt, S., Boiroux, D., Ranjan, A., Jørgensen, J. B., Madsen, H. & Nørgaard, K. 2015 In : Therapeutic Delivery. 6, 5, p. 211-221
Publication: Research - peer-review › Journal article – Annual report year: 2015

A novel tuning approach for offset-free MPC
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

A Parameter Choice Method for Simultaneous Reconstruction and Segmentation
Publication: Research › Report – Annual report year: 2015

A Spectral Element Method for Nonlinear and Dispersive Water Waves
Engsig-Karup, A. P., Bigoni, D. & Eskilsson, C. 2015
Publication: Research - peer-review › Poster – Annual report year: 2015
Bi-hormonal Closed-loop Control of Blood Glucose for People With Type 1 Diabetes - the Diacon Project

Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2015

Bi-hormonal control of blood glucose in people with type 1 diabetes

Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Characterization of nano-textured samples in a production environment

Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Chordal Graphs and Semidefinite Optimization

Publication: Research - peer-review › Journal article – Annual report year: 2015

Comparison of Linear and Nonlinear Model Predictive Control for Optimization of Spray Dryer Operation

Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Comparison of Prediction Models for a Dual-Hormone Artificial Pancreas

Publication: Research - peer-review › Conference article – Annual report year: 2015

Computational Hydrodynamics: How Portable and Scalable Are Heterogeneous Programming Paradigms?

Pawlak, W., Glimberg, S. L. & Engsig-Karup, A. P. 2015
Publication: Research - peer-review › Poster – Annual report year: 2015

Contingency-Constrained Unit Commitment in Meshed Isolated Power Systems

Publication: Research - peer-review › Journal article – Annual report year: 2015

Control of a post-combustion CO2 capture plant during process start-up and load variations

Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Control of a post-combustion CO2 capture plant during process start-up and load variations

Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Control of Electricity Load in Future Smart Cities

Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015
Control of Electricity Loads in Future Electric Energy Systems
Publication: Research - peer-review › Book chapter – Annual report year: 2015

Economic Model Predictive Control for Large-Scale and Distributed Energy Systems
Publication: Research › Ph.D. thesis – Annual report year: 2015

Economic Optimization of Spray Dryer Operation using Nonlinear Model Predictive Control with State Estimation
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Edge-promoting reconstruction of absorption and diffusivity in optical tomography
Publication: Research - peer-review › Journal article – Annual report year: 2015

Efficient solvers for soft-constrained MPC
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Empirical average-case relation between undersampling and sparsity in X-ray CT
Publication: Research - peer-review › Journal article – Annual report year: 2015

Fast Characterization of Moving Samples with Nano-Textured Surfaces
Publication: Research - peer-review › Journal article – Annual report year: 2015

High-Performance Small-Scale Solvers for Moving Horizon Estimation
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

High-resolution imaging methods in array signal processing
Publication: Research › Ph.D. thesis – Annual report year: 2015

How little data is enough? Phase-diagram analysis of sparsity-regularized X-ray computed tomography
Publication: Research - peer-review › Journal article – Annual report year: 2015

Improving the efficiency of deconvolution algorithms for sound source localization
Publication: Research - peer-review › Journal article – Annual report year: 2015

Mathematical beauty in service of deep approach to learning
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015
Profit and Risk Measures in Oil Production Optimization
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Real-time nonlinear MPC and MHE for a large-scale mechatronic application
Vukov, M., Gros, S., Horn, C., Frison, G., Geebelen, K., Jørgensen, J. B., Swevers, J. & Diehl, M. 2015 In : Control Engineering Practice. 45, p. 64-78
Publication: Research - peer-review › Journal article – Annual report year: 2015

Reconstruction Methods for Inverse Problems with Partial Data
Publication: Research › Ph.D. thesis – Annual report year: 2015

Relaxed Simultaneous Tomographic Reconstruction and Segmentation with Class Priors for Poisson Noise
Publication: Research › Report – Annual report year: 2015

Remarks on models for estimating the carbohydrate to insulin ratio and insulin sensitivity in T1DM
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Simultaneous tomographic reconstruction and segmentation with class priors
Publication: Research - peer-review › Journal article – Annual report year: 2015

Sparse acoustic imaging with a spherical array
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Sparse DOA estimation with polynomial rooting
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Spectral element modelling of floating bodies in a Boussinesq framework
Publication: Research › Conference abstract for conference – Annual report year: 2015

Stability patterns for a size-structured population model and its stage-structured counterpart
Publication: Research - peer-review › Journal article – Annual report year: 2015

Studies of Sensitivity in the Dictionary Learning Approach to Computed Tomography: Simplifying the Reconstruction Problem, Rotation, and Scale
Publication: Research › Report – Annual report year: 2015

Testable uniqueness conditions for empirical assessment of undersampling levels in total variation-regularized X-ray CT
The contribution of glucagon in an Artificial Pancreas for people with type 1 diabetes
Publication: Research › Article in proceedings – Annual report year: 2015

The equivalent source method as a sparse signal reconstruction
Publication: Research › Article in proceedings – Annual report year: 2015

Tomographic Image Reconstruction Using Training Images with Matrix and Tensor Formulations
Publication: Research › Ph.D. thesis – Annual report year: 2015

TV-constrained incremental algorithms for low-intensity CT image reconstruction
Publication: Research › Article in proceedings – Annual report year: 2015

Uncertainty Quantification with Applications to Engineering Problems
Publication: Research › Ph.D. thesis – Annual report year: 2015

Variational approach for restoring blurred images with cauchy noise
Publication: Research › Journal article – Annual report year: 2015

A Branch and Bound Algorithm for a Class of Biobjective Mixed Integer Programs
Publication: Research › Journal article – Annual report year: 2014

A computationally efficient tool for assessing the depth resolution in large-scale potential-field inversion
Publication: Research › Journal article – Annual report year: 2014

A Computationally Efficient Tool for Assessing the Depth Resolution in Potential-Field Inversion
Publication: Research › Report – Annual report year: 2014

A Dantzig-Wolfe decomposition algorithm for linear economic model predictive control of dynamically decoupled subsystems
Publication: Research › Journal article – Annual report year: 2014

Adaptive grouping for the higher-order multilevel fast multipole method
Publication: Research › Journal article – Annual report year: 2014
A Decomposition Algorithm for Mean-Variance Economic Model Predictive Control of Stochastic Linear Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

A Family of High-Performance Solvers for Linear Model Predictive Control
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

A Mean-Variance Criterion for Economic Model Predictive Control of Stochastic Linear Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

A mean–variance objective for robust production optimization in uncertain geological scenarios
Publication: Research - peer-review › Journal article – Annual report year: 2014

An algorithm for total variation regularized photoacoustic imaging
Publication: Research - peer-review › Journal article – Annual report year: 2014

Analysis of efficient preconditioned defect correction methods for nonlinear water waves
Publication: Research - peer-review › Journal article – Annual report year: 2014

Anomaly detection in homogenous populations: A sparse multiple kernel-based regularization method
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

A non-linear wave decomposition model for efficient wave–structure interaction. Part A: Formulation, validations and analysis
Publication: Research - peer-review › Journal article – Annual report year: 2014

Application of Constrained Linear MPC to a Spray Dryer
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Application of incremental algorithms to CT image reconstruction for sparse-view, noisy data
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

A Realistic Process Example for MIMO MPC based on Autoregressive Models
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

A Reduced Dantzig-Wolfe Decomposition for a Suboptimal Linear MPC
Assessment of Model Predictive and Adaptive Glucose Control Strategies for People with Type 1 Diabetes
Preprints of the 19th World Congress The International Federation of Automatic Control (IFAC 2014), p. 231-236
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

A tuning approach for offset-free MPC with conditional reference adaptation
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

A Tuning Approach for Offset-free MPC with Conditional Reference Adaptation.
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Bihormonal model predictive control of blood glucose in people with type 1 diabetes
Batora, V., Tarnik, M., Murgas, J., Schmidt, S., Nørgaard, K., Poulsen, N. K., Madsen, H. & Jørgensen, J. B. 2014
Proceedings of the IEEE Conference on Control Applications (CCA), 2014. IEEE, p. 1693-1698
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Conditional Reference Adaptation for Offset-free MPC
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Decomposition in conic optimization with partially separable structure
Publication: Research - peer-review › Journal article – Annual report year: 2014

Distributed Interior-point Method for Loosely Coupled Problems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Distributed Robustness Analysis of Interconnected Uncertain Systems Using Chordal Decomposition
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Distributed Solutions for Loosely Coupled Feasibility Problems Using Proximal Splitting Methods
Publication: Research - peer-review › Journal article – Annual report year: 2014

Economic Optimization of Spray Dryer Operation using Nonlinear Model Predictive Control
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Efficient Implementation of Solvers for Linear Model Predictive Control on Embedded Devices
Gaussian translation operator for Multi-Level Fast Multipole Method

Generalized Row-Action Methods for Tomographic Imaging

High-performance small-scale solvers for linear Model Predictive Control

Improved Multilevel Fast Multipole Method for Higher-Order discretizations

Input-constrained model predictive control via the alternating direction method of multipliers

Interior Point Methods on GPU with application to Model Predictive Control

Iso-geometric shape optimization of magnetic density separators

Iterative Reconstruction Methods for Hybrid Inverse Problems in Impedance Tomography
Hoffmann, K. & Knudsen, K. 2014 In : Sensing and Imaging. 15, 27 p., 96

Mathematical Modeling and Dimension Reduction in Dynamical Systems

Modelling and computation for nanoparticle reconstruction using Electron Energy Loss Spectroscopy

Model Predictive Control for Smart Energy Systems
Multicore Performance of Block Algebraic Iterative Reconstruction Methods
Publication: Research - peer-review › Journal article – Annual report year: 2014

Multilevel Fast Multipole Method for Higher Order Discretizations
Publication: Research - peer-review › Journal article – Annual report year: 2014

Numerical nonlinear complex geometrical optics algorithm for the 3D Calderón problem
Delbary, F. & Knudsen, K. 2014 In : Inverse Problems and Imaging. 8, 4, p. 991-1012
Publication: Research - peer-review › Journal article – Annual report year: 2015

On devising Boussinesq-type models with bounded eigenspectra: One horizontal dimension
Publication: Research - peer-review › Journal article – Annual report year: 2014

On the importance of the distance measures used to train and test knowledge-based potentials for proteins
Publication: Research - peer-review › Journal article – Annual report year: 2014

Planar Parametrization in Isogeometric Analysis
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

"Plug-and-play" edge-preserving regularization
Publication: Research - peer-review › Journal article – Annual report year: 2014

Predicting Plasma Glucose From Interstitial Glucose Observations Using Bayesian Methods
Publication: Research - peer-review › Journal article – Annual report year: 2014

R3GMRES: including prior information in GMRES-type methods for discrete inverse problems
Publication: Research - peer-review › Journal article – Annual report year: 2014

Real-time economic optimization for a fermentation process using Model Predictive Control
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Reduced-Complexity Semidefinite Relaxations of Optimal Power Flow Problems
Publication: Research - peer-review › Journal article – Annual report year: 2014

Reflector antenna analysis using physical optics on Graphics Processing Units
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Rotational image deblurring with sparse matrices
Publication: Research - peer-review › Journal article – Annual report year: 2014
Semi-convergence properties of Kaczmarz’s method
Publication: Research - peer-review › Journal article – Annual report year: 2014

Sensitivity Analysis of the Critical Speed in Railway Vehicle Dynamics
Bigoni, D., True, H. & Engsig-Karup, A. P. 2014 In : Vehicle System Dynamics. 52, Suppl. 1, p. 272-286
Publication: Research - peer-review › Conference article – Annual report year: 2014

Size-based predictions of food web patterns
Publication: Research - peer-review › Journal article – Annual report year: 2013

Sparse data structures in 3DXRD
Karamehmedovic, M. 2014
Publication: Research › Conference abstract for conference – Annual report year: 2014

Spectral Tensor-Train Decomposition for low-rank surrogate models
Bigoni, D., Engsig-Karup, A. P. & Marzouk, Y. M. 2014
Publication: Research › Poster – Annual report year: 2014

Stable finite difference discretizations of the forward speed seakeeping problem
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

State space Newton’s method for topology optimization
Publication: Research - peer-review › Journal article – Annual report year: 2014

System identification via sparse multiple kernel-based regularization using sequential convex optimization techniques
Publication: Research - peer-review › Journal article – Annual report year: 2014

Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Using Operators to Expand the Block Matrices Forming the Hessian of a Molecular Potential
Carlsen, M. 2014 In : Journal of Computational Chemistry. 35, 15, p. 1149-1158
Publication: Research - peer-review › Journal article – Annual report year: 2014

Med computeren på jagt efter gode former i strømninger
Publication: Communication › Internet publication – Annual report year: 2013

A Convex Variational Model for Restoring Blurred Images with Multiplicative Noise
Dong, Y. & Tieyong Zeng 2013 In : S I A M Journal on Imaging Sciences. 6, 3, p. 1598-1625
Publication: Research - peer-review › Journal article – Annual report year: 2013

A Dantzig-Wolfe Decomposition Algorithm for Economic MPC of Distributed Energy Systems
A Decomposition Algorithm for Optimal Control of Distributed Energy System

A Fast Condensing Method for Solution of Linear-Quadratic Control Problems

A free boundary problem for a reaction-diffusion system with nonlinear memory

A Grey-Box Model for Spray Drying Plants

A Riccati Based Homogeneous and Self-Dual Interior-Point Method for Linear Economic Model Predictive Control

A sparse scattering model for nanoparticles on rough substrates

Atomic scattering from an adsorbed monolayer solid with a helium beam that penetrates to the substrate
Hansen, F. Y., Bruch, L. W. & Dammann, B. 2013 In : Journal of Chemical Physics. 138, 10, p. 104705

A Tuning Procedure for ARX-based MPC

A Tuning Procedure for ARX-based MPC of Multivariate Processes

Auto-tuning of level 1 and level 2 BLAS for GPUs
Sørensen, H. H. B. 2013 In : Concurrency and Computation: Practice & Experience. 25, 8, p. 1183-1198
Efficient Hybrid-Spectral Model for Fully Nonlinear Numerical Wave Tank
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Efficient Implementation of the Riccati Recursion for Solving Linear-Quadratic Control Problems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Exercise effects in a virtual type 1 diabetes patient: Using stochastic differential equations for model extension
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2013

Extracting knowledge from protein structure geometry
Røgen, P. & Koehl, P. 2013 In : Proteins - Structure Function and Bioinformatics. 81, 5, p. 841-851
Publication: Research - peer-review › Journal article – Annual report year: 2013

Fast hydrodynamics on heterogeneous many-core hardware
Publication: Research - peer-review › Book chapter – Annual report year: 2013

First-order convex feasibility algorithms for x-ray CT
Publication: Research - peer-review › Journal article – Annual report year: 2013

Hybrid-Spectral Model for Fully Nonlinear Numerical Wave Tank
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2013

Inclusion estimation from a single electrostatic boundary measurement: Paper
Publication: Research - peer-review › Journal article – Annual report year: 2013

Introduction to Continuous Optimization
Publication: Research - peer-review › Book – Annual report year: 2014

Inverse Problems in Geosciences: Modelling the Rock Properties of an Oil Reservoir
Publication: Research › Ph.D. thesis – Annual report year: 2013

Isogeometric shape optimization in fluid mechanics
Nørtoft, P. & Gravesen, J. 2013 In : Structural and Multidisciplinary Optimization. 48, 5, p. 909-925
Publication: Research - peer-review › Journal article – Annual report year: 2013

Model-Based Closed-Loop Glucose Control in Type 1 Diabetes: The DiaCon Experience
Publication: Research - peer-review › Journal article – Annual report year: 2013
Practical Implementations of Advanced Process Control for Linear Systems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Quantifying Admissible Undersampling for Sparsity-Exploiting Iterative Image Reconstruction in X-Ray CT
Publication: Research - peer-review › Journal article – Annual report year: 2013

Real-Time Simulation of Ship-Structure and Ship-Ship Interaction
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Sensitivity Analysis of the Critical Speed in Railway Vehicle Dynamics
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

SIPPI: A Matlab toolbox for sampling the solution to inverse problems with complex prior information: Part 1—Methodology
Hansen, T. M., Cordua, K. S., Caroline Looms, M. & Mosegaard, K. 2013 In : Computers & Geosciences. 52, p. 470-480
Publication: Research - peer-review › Journal article – Annual report year: 2013

SIPPI: A Matlab toolbox for sampling the solution to inverse problems with complex prior information: Part 2—Application to crosshole GPR tomography
Hansen, T. M., Cordua, K. S., Looms, M. C. & Mosegaard, K. 2013 In : Computers & Geosciences. 52, p. 481-492
Publication: Research - peer-review › Journal article – Annual report year: 2013

Sizing of Microparticles from Angular Scattering Ratio
Hjorth, P. G. & Karamehmedovic, M. 2013
Publication: Research - peer-review › Paper – Annual report year: 2013

Solar/electric heating systems for the future energy system
Publication: Research - peer-review › Report – Annual report year: 2013

Sparse Image Reconstruction in Computed Tomography
Publication: Research › Ph.D. thesis – Annual report year: 2013

Stochastic Wave Dynamics and Uncertainty Quantification
Engsig-Karup, A. P., Bigoni, D. & Glimberg, S. L. 2013
Publication: Research - peer-review › Poster – Annual report year: 2013

The Homogeneous Interior-Point Algorithm: Nonsymmetric Cones, Warmstarting, and Applications
Publication: Research › Ph.D. thesis – Annual report year: 2014

The Potential of Economic Model Predictive Control for Spray Drying Plants
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2013
Towards real time simulation of ship-ship interaction - Part II: double body flow linearization and GPU implementation
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Viscoelastic Modelling of Road Deflections for use with the Traffic Speed Deflectometer
Publication: Research › Ph.D. thesis – Annual report year: 2013

Warmstarting the homogeneous and self-dual interior point method for linear and conic quadratic problems
Skajaa, A., Andersen, E. D. & Ye, Y. 2013 In : Mathematical Programming Computation. 5, 1, p. 1-25
Publication: Research - peer-review › Journal article – Annual report year: 2013

Waterflooding optimization in uncertain geological scenarios
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Projects:

PhD Project: Segmentation-Driven Tomographic Reconstruction
Kongskov, R. D., Dong, Y. & Knudsen, K.
01/09/2014 → 31/08/2017
Project

A bi-hormonal Artificial Pancreas based on an Ensemble Nonlinear Model Predictive Control Algorithm
Boiroux, D.
01/08/2014 → 31/07/2017
Project

Alliance for Imaging and Modelling of Energy Applications
01/01/2014 → 31/12/2018
Project
Sizing of Microparticles from Angular Scattering Ratio
Karamehmedovic, M. & Hjorth, P. G.
22/10/2013 → 23/10/2013
Project

Activities:

Inverse Problems and Imaging (Journal)
Brander, T. O. (Reviewer)
2017
Activity: Research › Peer review of manuscripts

Mathematical modeling of neurons: Perspectives for the treatment of epilepsy
Boiroux, D. (Guest lecturer)
13 Dec 2017
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Aalto University
Brander, T. O. (Visiting researcher)
25 Sep 2017
Activity: Visiting an external institution › Visiting another research institution

Active-subspace analysis of speckle-based particle measurements
Karamehmedovic, M. (Guest lecturer)
20 Sep 2017
Activity: Talks and presentations › Conference presentations

Bounds on the stably recoverable information for the Helmholtz equation in R^2
Karamehmedovic, M. (Guest lecturer)
2 Jun 2017
Activity: Talks and presentations › Conference presentations

10th International Conference on Advanced Technologies and Treatments for Diabetes
Boiroux, D. (Participant)
15 Feb 2017 → 18 Feb 2017
Activity: Attending an event › Participating in or organising a conference

University of Virginia
Boiroux, D. (Visiting researcher)
1 Oct 2016 → 10 Dec 2016
Activity: Visiting an external institution › Visiting another research institution

Mathematics Working Group of the European Society for Engineering Education (External organisation)
Karamehmedovic, M. (Participant)
27 Jun 2016 → 29 Jun 2016
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

HD-Tomo Days
Karamehmedovic, M. (Participant)
6 Apr 2016 → 8 Apr 2016
Activity: Attending an event › Participating in or organising a conference

Inverse scattering problems in characterisation of nanomaterials
Karamehmedovic, M. (Invited speaker)
11 Feb 2016
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities
Montreal Clinical Research Institute (IRCM)
Wendt, S. L. (Visiting researcher)
15 Jun 2015 → 16 Oct 2015
Activity: Visiting an external institution › Visiting another research institution

Danish Exam - Novice Level
Wendt, S. L. (External examiner)
10 Jun 2015
Activity: Examinations and supervision › External examination

19th Nordic Process Control Workshop
Boiroux, D. (Speaker)
16 Jan 2015
Activity: Talks and presentations › Conference presentations

Inverse scattering: from formulation to application
Karamehmedovic, M. (Invited speaker)
10 Mar 2014
Activity: Talks and presentations › Conference presentations

Which distance measure is best for training and testing protein pair potentials?
Røgen, P. (Lecturer)
3 Dec 2013
Activity: Talks and presentations › Conference presentations

ASME 2013 Rail Transportation Division
Bigoni, D. (Speaker)
15 Oct 2013 → 17 Oct 2013
Activity: Talks and presentations › Conference presentations

23rd Symposium on Dynamics of Vehicles on Roads and Tracks (IAVSD 2013)
Bigoni, D. (Speaker)
19 Aug 2013 → 23 Aug 2013
Activity: Talks and presentations › Conference presentations

21st Annual International Conference on Intelligent Systems for Molecular Biology | 12th European Conference on Computational Biology
Carlsen, M. (Participant)
19 Jul 2013 → 23 Jul 2013
Activity: Attending an event › Participating in or organising a conference

Light Scattering
Karamehmedovic, M. (Participant)
27 May 2013 → 28 May 2013
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

University of California at Davis
Carlsen, M. (Visiting researcher)
21 Apr 2013 → 29 Apr 2013
Activity: Visiting an external institution › Visiting another research institution

Uncertainty in Reservoir Characterization
Bigoni, D. (Speaker)
18 Apr 2013 → 19 Apr 2013
Activity: Talks and presentations › Conference presentations
Danvak Dagen 2013
Hovgaard, T. G. (Invited speaker)
10 Apr 2013
Activity: Talks and presentations › Conference presentations

Inverse Problems and Numerical Methods in Applications
Karamehmedovic, M. (Organizer)
8 Mar 2012 → 9 Mar 2012
Activity: Attending an event › Participating in or organising a conference

Nano Structures on Surfaces and Light Scattering
Karamehmedovic, M. (Participant)
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Nano Particles, Nano Structures and Near Field Computation
Karamehmedovic, M. (Participant)
11 Mar 2010 → 12 Mar 2010
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Press clippings:

The Dane's Academy : Ph.d. in 3 minutes: Optimal Flows
Peter Nørtoft
05/04/2013
1 media contribution
Press / Media

Ph.d. Cup 2013: Using a computer to find the best shapes in flows
Peter Nørtoft
01/03/2013
1 media contribution
Press / Media