Morten Brøns - DTU Orbit (31/03/2019)

Morten Brøns
Professor, Head of section

Department of Applied Mathematics and Computer Science

Mathematics

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Research outputs:

Vorticity topology of vortex pair interactions at low Reynolds numbers
Research output: Research - peer-review › Journal article – Annual report year: 2019

Preface: Seventh International Symposium on Bifurcations and Instabilities in Fluid Dynamics (BIFD2017): Preface
Research output: Research - peer-review › Editorial – Annual report year: 2018

Canards in stiction: on solutions of a friction oscillator by regularization
Research output: Research - peer-review › Journal article – Annual report year: 2018

On the approximation of the canard explosion point in singularly perturbed systems without an explicit small parameter
Research output: Research - peer-review › Journal article – Annual report year: 2017

Singular limit analysis of a model for earthquake faulting
Research output: Research - peer-review › Journal article – Annual report year: 2016

Sparse identification of a predator-prey system from simulation data of a convection model
Research output: Research - peer-review › Journal article – Annual report year: 2017

Topological bifurcations in the evolution of coherent structures in a convection model
Research output: Research - peer-review › Journal article – Annual report year: 2017

Topological fluid mechanics of the formation of the Kármán-vortex street
Research output: Research - peer-review › Journal article – Annual report year: 2017

Bifurcations of a creeping air–water flow in a conical container
Research output: Research - peer-review › Journal article – Annual report year: 2016

Patterns of a slow air-water flow in a semispherical container
Research output: Research - peer-review › Journal article – Annual report year: 2016

Sixth International Symposium on Bifurcations and Instabilities in Fluid Dynamics (BIFD2015): Foreword
Research output: Research - peer-review › Editorial – Annual report year: 2016
Topology of streamlines and vorticity contours for two-dimensional flows
Research output: Research › Ph.D. thesis – Annual report year: 2014

Vorticity generation and wake transition for a translating circular cylinder: Wall proximity and rotation effects
Research output: Research › peer-review › Journal article – Annual report year: 2013

An iterative method for the canard explosion in general planar systems
Research output: Research › peer-review › Article in proceedings – Annual report year: 2012

Bilinear Relative Equilibria of Identical Point Vortices
Research output: Research › peer-review › Journal article – Annual report year: 2012

Statistical modelling of the interplay between solute shape and rejection in porous membranes
Research output: Research › peer-review › Journal article – Annual report year: 2012

Canard explosion of limit cycles in templator models of self-replication mechanisms
Research output: Research › peer-review › Journal article – Annual report year: 2012

Chaos and Integrability in Ideal Body-Fluid Interactions
Research output: Research › Ph.D. thesis – Annual report year: 2011

Stabilization of vortices in the wake of a circular cylinder using harmonic forcing
Research output: Research › peer-review › Journal article – Annual report year: 2011

Bifurcation analysis in a vortex flow generated by an oscillatory magnetic obstacle
Research output: Research › peer-review › Journal article – Annual report year: 2010

Canards and mixed-mode oscillations in a forest pest model
Research output: Research › peer-review › Journal article – Annual report year: 2010

Continuation of Sets of Constrained Orbit Segments
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Topology of vortex creation in the cylinder wake
Research output: Research › peer-review › Journal article – Annual report year: 2010

Dye visualization near a three-dimensional stagnation point: application to the vortex breakdown bubble
Research output: Research › peer-review › Journal article – Annual report year: 2009

Experimental vortex breakdown topology in a cylinder with a free surface
Research output: Research › peer-review › Journal article – Annual report year: 2009

A coaxial vortex ring model for vortex breakdown
Research output: Research › peer-review › Journal article – Annual report year: 2008

Introduction to focus issue: Mixed mode oscillations: Experiment, computation, and analysis
Research output: Research › peer-review › Journal article – Annual report year: 2008

Two-vortex model for vortex breakdown
Research output: Research › peer-review › Article in proceedings – Annual report year: 2008
Streamline topology of the near wake of a circular cylinder at low Reynolds numbers
Research output: Research - peer-review › Poster – Annual report year: 2004

Canard explosion in a model for discontinuous plastic deformation
Research output: Research - peer-review › Article in proceedings – Annual report year: 2003

Low-dimensional modeling of a driven cavity flow with two free parameters
Research output: Research - peer-review › Journal article – Annual report year: 2003

Bifurcation to Infinity, Canards, and Chaotic Waves in Cubic Autocatalator Kinetics
Research output: Research - peer-review › Report – Annual report year: 2001

Explosion of limit cycles and chaotic waves in a simple nonlinear chemical system
Research output: Research - peer-review › Journal article – Annual report year: 2001

Streamline Patterns and their Bifurcations using Methods from Dynamical Systems
Research output: Research - peer-review › Book chapter – Annual report year: 2001

Topology of vortex Breakdown bubbles in a cylinder with rotating bottom and Free surface
Research output: Research - peer-review › Journal article – Annual report year: 2001

Evaluation of POD-based decomposition techniques applied to parameter-dependent non-turbulent flows
Research output: Research - peer-review › Journal article – Annual report year: 2000

Streamline topologies near simple degenerate critical points in two-dimensional flow away from boundaries
Research output: Research - peer-review › Journal article – Annual report year: 1999

Streamline topology of steady axisymmetric vortex breakdown in a cylinder with co- and counter-rotating end-covers
Research output: Research - peer-review › Journal article – Annual report year: 1999

Evaluation of POD-based decomposition techniques applied to parameter-dependent non-turbulent flows
Research output: Research - peer-review › Report – Annual report year: 1998

On stagnation points and streamline topology in vortex flows
Research output: Research - peer-review › Journal article – Annual report year: 1998

Streamline topologies near simple degenerate critical points in two-dimensional flow away from boundaries
Research output: Research - peer-review › Report – Annual report year: 1998

Streamline topology of steady axisymmetric vortex breakdown in a cylinder with co- and counter-rotating end-covers
Research output: Research - peer-review › Report – Annual report year: 1998

Topological fluid mechanics of Axisymmetric Flow
Research output: Research - peer-review › Article in proceedings – Annual report year: 1998

Circle maps and the Devil's staircase in a periodically perturbed Oregonator
Research output: Research - peer-review › Journal article – Annual report year: 1997

Local and global bifurcations at infinity in models of glycolytic oscillations
Research output: Research - peer-review › Journal article – Annual report year: 1997
On Stagnation points and streamline topology in vortex flows
Research output: Research - peer-review › Report – Annual report year: 1997

Progress in Industrial Mathematics at ECMI 96
Research output: Research - peer-review › Book – Annual report year: 1997

Streamline topology of axisymmetric flows
Research output: Research - peer-review › Report – Annual report year: 1997

Circle Maps and the Devil's Staircase in a Chemical Oscillator
Research output: Research - peer-review › Report – Annual report year: 1996

Coriolis Effects in the Dynamics of a Rotating Elastic Structure
Research output: Research - peer-review › Journal article – Annual report year: 1996

Dynamics of a Simple Rotating Structure
Research output: Research - peer-review › Journal article – Annual report year: 1996

Introduction to Dynamics, Supplementary Notes 0211/1743
Research output: Research - peer-review › Book – Annual report year: 1996

Topological Fluid Mechanics of Axisymmetric Flows
Research output: Research › Article in proceedings – Annual report year: 1996

Topological Fluid Mechanics of Axisymmetric Flows
Research output: Research › Article in proceedings – Annual report year: 1996

Topological Fluid Mechanics with Applications to Free Surfaces and Axisymmetric Flows
Research output: Research - peer-review › Journal article – Annual report year: 1996

Topological fluid dynamics of interfacial flows
Research output: Research - peer-review › Journal article – Annual report year: 1994

Projects:

On the Accuracy in Measurements of Time Intervals and Traffic Intensities with Application to Teletraffic and Simulation.
Project: PhD

Operations Research In Production Planning - Interconnections between Production and Demand.
Project: PhD

Methods for Control of Complex Dynamics Systems.
Project: PhD

ECOSYSTEMS - An Operational Research Approach
Project: PhD

Topology of Exotic Wakes
Project: PhD
Hvirveldynamik og strømningstopologi
Project: PhD

Topologisk Fluid Dynamik: Bifurkationer og strukturer i strømninger
Project: PhD

Hæmodynamisk modellering af hjertet
Project: PhD

Simulering og identifikation af strukturer i komplexe fluidstrømninger
Project: PhD

Bedømmelse af den atmosfæriske turbulens over områder af varierende overfladetype
Project: PhD

Selv-organiserede processer og kohærente strukturer i kontinuumssystemer
Project: PhD

Bifurkationsstrukturer i koblede ikke-lineære oscillatorer med særlig henblik på biologiske systemer
Project: PhD

Laminar-turbulent omslag i roterende strømning
Project: PhD

From non-smooth to smooth - on regularization using slow-fast theory
Project: PhD

Aircraft, Bifurcation and Control
Project: PhD

Endelig-dimensionale dynamiske systemer i fluid mekanik
Project: PhD

Nonlinear Fluid -
Project: PhD

Osmotically driven flows in micro and nanofluidic systems and their applications to sugar transport in plants
Project: PhD

Fluid Dynamics of Animal Locomotion
Project: PhD

Design af digitale optiske filtre
Project: PhD

Topology Optimization in Micro- and Nanofluidic Systems
Project: PhD

Topological fluid dynamics: Symmetry breaking and fluid interfaces
Project: PhD
Matematisk modelling af membranseparation  
Project: PhD

Analysis of Body-Vortex Interactions  
Project: PhD

Dynamical Systems Approach to L-H Transition in Magnetically Confined Plasma  
Project: PhD

Homoclinic Bifurcation to Infinity  
Project: Research

Reduction methods for Partial Differential Equations  
Project: Research

Bifurcation in Chemical Systems  
Project: Research

Stagnation Points in Point Vortex Flows  
Project: Research

Three-dimensional topology of the vortex breakdown  
Project: Research

Second International Symposium on Bifurcations and Instabilities in Fluid Dynamics  
Project: Research

Applied topological fluid mechanics: Bioreactors and bluff body wakes  
Project: Research

Maciej Krupa  
Project: Research

Topological Fluid Mechanics  
Project: Research

Dynamics of Plane Euler Elastica  
Project: Research

European Consortium for Mathematics in Industry (ECMI)  
Project: Research

Activities:

SIAM Conference on Applications of Dynamical Systems 2017  
Activity: Attending an event › Participating in or organising a conference