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Education

04/2010 **Doctorate in Natural Sciences (Dr. rer. nat.)**, *University of Hamburg*, Hamburg.

08/2005 **Diploma in Mathematics (Dipl.-Math.)**, *University of Hamburg*, Hamburg.

09/2002 **Prediploma in Mathematics**, *University of Hamburg*, Hamburg.

Research Interests

- Delay differential equations (focus: state-dependent delay)
- Qualitative analysis of differential equations and dynamical systems
- Functional differential equations
- Invariant manifolds of differential equations
- Traffic modeling
- Biomathematics

Research Experience

10/2010 - present **Postdoc Position**, *Division of Applied Mathematics at Dept. of Mathematics, University of Hamburg*, Hamburg.

03/2009 - 10/2010 **Research Assistant**, *Chair of Applied Analysis at Institute for Mathematics, University of Rostock*, Rostock.

10/2005 - 10/2008 **Research Assistant**, *Division of Applied Mathematics at Dept. of Mathematics, University of Hamburg*, Hamburg.

03/2004 - 03/2005 **Undergraduate Research Assistant**, *Division of Applied Mathematics at Dept. of Mathematics, University of Hamburg*, Hamburg.

Publications

(in preparation) • **On a car-following model: Stop and Go solutions obtained by a degenerate Hopf bifurcation of a delay differential equation**
Preprint.

(in preparation) • **On a car-following model: the model, its constant-speed solutions, and their stability**
Preprint.

• **On a delay differential equation arising from a car-following model: Wavefront solutions with constant-speed and their stability**
To appear in Discrete and Continuous Dynamical Systems – Series B.
Preprint available from arXiv:1609.06873, 25pp., 2016. 🖳

- **On differential equations with state-dependent delay: The principles of linearized stability and instability revisited**
  Electronic Journal of Qualitative Theory of Differential Equations 2016, no. 81, 17 pp.
  DOI: 10.14232/ejqtde.2016.1.81 ⌨

- **Multiple slowly oscillating periodic solutions for $x'(t) = f(x(t-1))$ with negative feedback**
  Coauthor: Benjamin Kennedy
  Annales Polonici Mathematici 118 (2016), 113 – 140.
  DOI: 10.4064/ap3899-10-2016 ⌨

- **A note on local center manifolds for differential equations with state-dependent delay**
  Differential Integral Equations 29 (2016), no. 11/12, 1093 – 1106. ⌨

- **Local stability analysis of differential equations with state-dependent delay**
  Discrete and Continuous Dynamical Systems 36 (2016), no.6, 3445 – 3461.
  DOI: 10.3934/dcds.2016.36.3445 ⌨

- **Attraction property of local center-unstable manifolds for differential equations with state-dependent delay**
  Electronic Journal of Qualitative Theory of Differential Equations 2015, No. 4, 45 pp.
  DOI: 10.14232/ejqtde.2015.1.4 ⌨

- **On a differential equation with state-dependent delay: A center-unstable manifold connecting an equilibrium and a periodic orbit**
  Journal of Dynamics and Differential Equations 24 (2012), no. 2, 197 - 248.
  DOI: 10.1007/s10884-012-9245-6 ⌨

- **The existence and C^1-smoothness of local center-unstable manifolds for differential equations with state-dependent delay**
  Rostocker Mathematisches Kolloquium 66 (2011), 3 - 44. ⌨

- **On a differential equation with state-dependent delay: A global center-unstable manifold bordered by a periodic orbit** ⌨
  Doctoral Dissertation, University of Hamburg, 2010.

- **Introduction into the theory of retarded functional differential equations on basis of a car-following model**
  Diploma thesis, University of Hamburg, 2005.

Invited Talks

11/2016 **Short-term fluctuations of a price model with state-dependent delay**
Scientific seminar on Differential and Functional Differential Equations, Faculty of physico-mathematical and natural sciences, Peoples' Friendship University of Russia, Moscow.

10/2016 **On a delay differential equation arising from a car-following model**
Workshop "Dynamics of Delay Equations, Theory and Applications'", Weierstrass Institute for Applied Analysis and Stochastics, Berlin.

06/2016 **On some constant-speed and stop-and-go solutions of a car-following model**
Special Session "Traffic Flow Models and Their Application in Traffic Engneering" at the 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, Florida.

09/2015 **On periodic orbits of exchange rate equations with state-dependent delay**

Section "Differential Equations and Applications" at the Annual Meeting 2015 of the Deutsche Mathematiker-Vereinigung, University of Hamburg, Hamburg.

07/2015 **Local stability analysis of differential equations with state-dependent delay**
Minisymposium "Delay Differential Equations" of the Equadiff 2015 conference, Universitáe Claude Bernard Lyon 1, Lyon.

08/2014 **Attraction property of local center-unstable manifolds for differential equations with state-dependent delay**
7th International Conference on Differential and Functional Equations "DFDE 2014", Peoples' Friendship University of Russia, Moscow. (*cancelled due to illness*)

07/2014 **Einige Lösungen in Form von Wellenfronten für ein "car-following"-Verkehrsmodell**
Joint seminar in Dynamical Systems of the University of Hamburg, the Institute of Mechanics and Ocean Engineering of the Hamburg University of Technology, and of the MPY-Group at DESY, Deutsches Elektronen-Synchrotron, Hamburg.

07/2014 **Attraction property of local center-unstable manifolds for differential equations with state-dependent delay**
Special Session "Differential Delay Equations" of the 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Instituto de Ciencias Matemáticas and Universidad Autónoma de Madrid, Madrid

06/2013 **On the existence of periodic solutions for a differential equation with state-dependent delay**
Oberseminar Analysis of the Dept. of Mathematics, Dresden University of Technology, Dresden.

08/2011 **The existence and C^1-smoothness of local center-unstable manifolds for differential equations with state-dependent delay**
International Workshop "Spatio-temporal dynamical systemes", Steklov Mathematical Institute, Moscow.

08/2011 **Slowly oscillating periodic solutions of a delay differential equation**
Minisymposium "Delay Differential Equations" of the Equadiff 2011 conference, Loughborough University, Loughborough.

06/2010 **Einige Anmerkungen zur Theorie und zu ausgewählten Beispielen von verzögerten Differentialgleichungen**
Joint seminar in Dynamical Systems of the University of Hamburg, the Institute of Mechanics and Ocean Engineering of the Hamburg University of Technology, and of the MPY-Group at DESY, Deutsches Elektronen-Synchrotron, Hamburg.

06/2010 **A Center-Unstable Manifold Connecting an Equilibrium to a Periodic Orbit for a Differential Equation with Delay**
Kandidatenseminar of the Research Group Analysis of the Mathematical Institute, Justus-Liebig University, Giessen.

05/2010 **A Periodic Orbit of a Differential Equation with State-Dependent Delay**
Special Session "Delay Differential Equations" of the 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Dresden University of Technology, Dresden

10/2009 **Slowly Oscillating Solutions of a Differential Equation with State-Dependent Delay**
Seminar in Analysis of the Dept. of Mathematics, University of West Bohemia, Pilsen

01/2009 **Existence and Structure of Slowly Oscillating Solutions of a Differential Equation with State-Dependent Delay**

Mathematics Colloquium of the Institute for Mathematics, University of Rostock, Rostock.

01/2008 **Slowly Oscillating (Periodic) Solutions of a Differential Equation with State-Dependent Delay**
Kandidatenseminar of the Research Group Analysis of the Mathematical Institute, Justus-Liebig University, Giessen.

Conferences and Workshops

10/2016 **Workshop "Dynamics of Delay Equations, Theory and Applications"**, Weierstrass Institute for Applied Analysis and Stochastics, Berlin.

06/2016 **The 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications**, Orlando, Florida.

09/2015 **Annual Meeting 2015 of the Deutsche Mathematiker-Vereinigung**, University of Hamburg, Hamburg.

07/2015 **Equadiff 2015**, Universitáe Claude Bernard Lyon 1, Lyon.

05/2015 **Short Thematic Program on Delay Differential Equations**, The Fields Institute for Research in Mathematical Sciences, Toronto.

07/2014 **The 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications**, Instituto de Ciencias Matemáticas and Universidad Autónoma de Madrid, Madrid.

08/2011 **International Workshop "Spatio-temporal dynamical systems"**, Steklov Mathematical Institute, Moscow.

08/2011 **6th International Conference on Differential Functional Differential Equations**, Steklov Mathematical Institute, Moscow.

08/2011 **Equadiff 2011**, University Loughborough, Loughborough.

06/2010 **Workshop on Low Dimensional Structures in Dynamical Systems with Variable Time Lags**, American Institute of Mathematics, Palo Alto.

05/2010 **The 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications**, Dresden University of Technology, Dresden.

09/2008 **International Conference on Infinite Dimensional Dynamical Systems**, York University, Toronto.

02/2008 **Workshop on Dynamical Systems and Geometry**, University of Hamburg, Hamburg.

10/2007 **Workshop on Traffic Flow: a Microscopic and Macroscopic Perspective**, Center for Modeling and Simulation at University of Hamburg, Hamburg.

06/2006 **Summer School on Delay Differential Equations and Applications**, University of Trieste and University of Innsbruck, Dobbiaco.

Organisation of Conferences, Workshops etc.

07/2016 **Special Session "Delay differential equations with state-dependent delay and their applications" at the 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications**, Orlando, Florida.
jointly with Prof. Qingwen Hu (University of Texas at Dallas, Richardson) and Prof. Dr. Bernhard Lani-Wayda (University of Giessen)

09/2015 **Minisymposium "Topics in Delay Differential Equations" at the 2015 annual meeting of the Deutschen Mathematiker-Vereinigung**, University of Hamburg, Hamburg.
jointly with Prof. Dr. Hans-Otto Walther (University of Giessen)

Journal Referee Service, Reviews etc.

- **Asymptotic Analysis**
- **Advances in Difference Equations**
- **Communications on Pure and Applied Analysis**
- **Discrete and Continuous Dynamical Systems - Series S**
- **Electronic Journal of Qualitative Theory of Differential Equations**
- **Istituto Nazionale di Alta Matematica "F. Severi"**
- **International Journal of Biomathematics**
- **Journal of Mathematical Analysis and Applications**
- **Mathematical Reviews of American Mathematical Society**
- **Mathematische Nachrichten**
- **SpringerPlus**
- **Zentralblatt MATH**

Stipends and Fellowships

10/2008 - 03/2009   **University of Hamburg**, Hamburg.
Stipend of the Ph.D. Graduate Program

09/2000 - 08/2005   **Lucia Pfohe Stiftung**, Lüneburg.
Participant of the Student Fellowship Program

Teaching Experience

Fall 2016   **Differential Equations I for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours, grading homework and exam

Spring 2016   **Analysis II for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours

Fall 2015   **Seminar on Differential Equations and Dynamical Systems for Mathematicians**, *Department of Mathematics, University of Hamburg*, Hamburg.
(together with Prof. Dr. Reiner Lauterbach)

Fall 2015   **On some Aspects of the Dynamical Systems Theory for Mathematicians**, *Department of Mathematics, University of Hamburg*, Hamburg.
lecture, tutorial, exam

Spring 2015   **Ordinary Differential Equations and Dynamical Systems for Mathematicians**, *Department of Mathematics, University of Hamburg*, Hamburg.
Tutorial, office hours

Spring 2015   **Analysis II for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours

Fall 2014   **Differential Equations I for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours

Fall 2013   **Differential Equations I for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours

Fall 2013   **Analysis I for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours

Fall 2012 **Differential Equations I for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours

Fall 2011 **Seminar on Differential Equations and Dynamical Systems for Mathematicians**, *Department of Mathematics, University of Hamburg*, Hamburg.
(together with Prof. Dr. Ingenuin Gasser)

Fall 2011 **Differential Equations I for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours

Fall 2011 **Analysis I for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours

Spring 2011 **Ordinary Differential Equations and Dynamical Systems for Mathematicians**, *Department of Mathematics, University of Hamburg*, Hamburg.
Lecture, exam

Fall 2010 **Differential Equations I for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours

Fall 2010 **Analysis I for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours

Spring 2010 **Analysis II for Mathematicians**, *Institute for Mathematics, University of Rostock*, Rostock.
Tutorial, office hours

Spring 2010 **Differential Equations for Mathematicians**, *Institute for Mathematics, University of Rostock*, Rostock.
Tutorial, office hours, creation of exercise sheets, grading exam

Fall 2009 **Complex Analysis and Laplace-Transformation for Engineers**, *Institute for Mathematics, University of Rostock*, Rostock.
Tutorial, office hours, grading homework

Fall 2009 **Complex Analysis for Mathematicians**, *Institute for Mathematics, University of Rostock*, Rostock.
Office hours, creation of exercise sheets, grading homework and exam

Fall 2009 **Analysis I for Mathematicians**, *Institute for Mathematics, University of Rostock*, Rostock.
Tutorial, office hours

Spring 2009 **Analysis II for Mathematicians**, *Institute for Mathematics, University of Rostock*, Rostock.
Tutorial, office hours, creation of exercise sheets, grading exam

Spring 2008 **Analysis II for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours, grading homework and exam

Fall 2007 **Analysis III for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours, grading homework and exam

Fall 2007 **Differential Equations I for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours, grading homework and exam

Fall 2006 **Analysis III for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours, grading homework and exam

Fall 2006 **Differential Equations I for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours, grading homework and exam

Fall 2005 **Analysis I for Engineers**, *Hamburg University of Technology*, Hamburg.
Tutorial, office hours, grading homework and exam

Supervision of Graduate Students

2016	**Erik Rohwedder**, *bachelor thesis*, Dept. of Mathematics, University of Hamburg. jointly with Prof. Dr. Reiner Lauterbach (University of Hamburg)
2010	**Mathias Krüger**, *bachelor thesis*, Institute for Mathematics, University of Rostock. jointly with Prof. Dr. Jochen Merker (Leipzig University of Applied Sciences)
2010	**Astrid Winter**, *bachelor thesis*, Institute for Mathematics, University of Rostock. jointly with Prof. Dr. Jochen Merker (Leipzig University of Applied Sciences)

Administrative issues

2014/2015	**Member of the appointments committee for the professorship "Geometric Partial Differential Equations"**, University of Hamburg, Hamburg.
2005 - 2009	**Member of the examination board for students of Mathematics (Diploma)**, University of Hamburg, Hamburg.

Languages

German	**Native speaker**	
English	**Advanced**	
Russian	**Native speaker**	*basics in writing*
Latin	**Great Latinum**	*qualification at German secondary schools / universities*
Ancient Greek	**Graecum**	*qualification at German secondary schools / universities*

Computer Skills

Operating Systems	Windows, OS X, basics in Linux
Math Software	Matlab, Mathematica
Programming	Java
others	Microsoft Office, LaTeX

References

Concerning Research

Prof. Tibor Krisztin, *University of Szeged*, Szeged. ▭ / ✉
Prof. Dr. Reiner Lauterbach, *University of Hamburg*, Hamburg. ▭ / ✉
Prof. Dr. Hans-Otto Walther, *Justus-Liebig University*, Giessen. ▭ / ✉
Prof. Jianhong Wu, *York University*, Toronto. ▭ / ✉

Concerning Teaching

Dr. Hanna Peywand Kiani, *University of Hamburg*, Hamburg. ▭ / ✉
Dr. Kai Rothe, *University of Hamburg*, Hamburg. ▭ / ✉