Name: **Christian Kuehn** ckuehn@ma.tum.de E-mail:

Citizenship: German

Technical University of Munich Address:

Faculty of Mathematics

Boltzmannstr. 3

85748 Garching bei München, Germany

Website: www.multiscale.systems

EMPLOYMENT

EMILO IMEN	
2022 – now	Technical University of Munich, Germany W3 Full Professorship (tenured)
2021 – 2022	Technical University of Munich, Germany W3 Associate Professorship (tenured)
2016	Technical University of Munich, Germany Lichtenberg Professorship for "Multiscale and Stochastic Dynamics"
2016 – 2021	Technical University of Munich, Germany W2 Assistant Professorship (tenure-track)
2011 – 2016	Vienna University of Technology, Austria Institute for Analysis and Scientific Computing Postdoctoral Researcher (in the research group: PDE and Dynamical Systems) 2013 - 2016: APART Fellow - Austrian Academy of Sciences 2011 - 2013: Marie-Curie International Re-Integration Grant
2013	Mathematisches Forschungsinstitut Oberwolfach (MFO), Germany Leibniz Fellow
2010 – 2011	Max Planck Institute for Physics of Complex Systems, Germany Postdoctoral Researcher (in the research group: Biological Networks)

EDUCATION	
2016	Vienna University of Technology, Austria Privatdozent (PrivDoz.) "venia docendi" Habilitation in Applied Mathematics
2008 – 2010	Cornell University, United States of America Doctor of Philosophy (PhD) in Applied Mathematics 2010 Advisor: Professor John Guckenheimer
2006 – 2008	Cornell University, United States of America Master of Science (MSc) in Applied Mathematics 2008 <i>Average Grade</i> 4.0 [4.0=best, 0.0=worst]
2005 – 2006	University of Cambridge, United Kingdom Certificate of Advanced Study (CASM) 2006 (Master of Advanced Studies (MASt) in Mathematics)
2002 – 2005	Jacobs University Bremen, Germany Bachelor of Science (BSc) in Mathematics 2005

Average grade 1.1 [1.0=best, 5.0=worst]

1994 – 2001 Cato Bontjes van Beek-Gymnasium Achim, Germany **Abitur** 2001

Average grade 1.0 [1.0=best, 6.0=worst]

AWARDS & GRANTS (PROFESSOR LEVEL)

- 2024 2027: Innovative Training Network BeyondTheEdge Call EU Horizon 2020 - MSCA-ITN-2022/2023 co-PI C. Kuehn
- 2023 2027: Project ClimTip (Climate Tipping Points)
 European Union, Call: H2020-CL5-2023
 co-PI & WP-leader (16 WPs total, main PI N. Boers at TUM)
- 2023: Teaching Award Fachschaft Mathematik at TUM advanced lecture: Topics in Dynamical Systems (Stochastic Dynamics) 2nd place, selected by the students for excellence in teaching
- 2023 2025: Swedish Royal Physiographic Society Collaboration Grant international collaboration with Sweden; PI Prof. Erik A. Martens
- 2022 2024: Distinguished Visiting Professorship Foundation Sciences Mathématiques de Paris recipient C. Kuehn (several longer guest visits to Paris)
- 2022 2024: "Validated Computation of Patterns in Recurrent Neural Networks" project within the Walter-Benjamin Program of DFG PI E. Queirolo, host C. Kuehn
- 2021 2026: JSPS Joint International Research (B) international host in collaboration with Japan; PI Prof. Goro Akagi
- 2021 2024: Henriette Hertz Scouting Program
 Alexander von Humboldt-Stiftung
 PI, allowed to scout and propose two Humboldt Fellows directly
- 2021 2024: "Multiscale Dynamics of Neural Nets via Stochastic Graphops" project within DFG SPP 2298: Theoretical Foundations of Deep Learning PI C. Kuehn, co-PI M. Engel
- 2021 2024: Lichtenberg Professorship Grant Extension PI, VolkswagenStiftung
- 2021 2024: "Quasi-Steady State Approximation for PDEs"
 D-A-CH grant: Austrian Science Fond (FWF) & German Science Foundation (DFG)
 PI C. Kuehn, co-PIs T. Bao. and K. Fellner
- 2021 2023: AvH: Humboldt Research Fellowship awarded to postdoctoral fellow Dr. Chuang Xu host C. Kuehn
- 2021 2023: Marie-Curie Postdoctoral Fellowship postdoc Dr. Cinzia Soresina, (declined due to longer term position in Graz) host C. Kuehn
- 2021 2024: Innovative Training Networks Project CriticalEarth Call Horizon 2020 - MSCA-ITN-2019/2020 co-PI C. Kuehn
- 2020 2023: "Geometric Desingularization of Higher Codimension Singularities in fast-slow systems", DFG, international partner: H. Jardon-Kojakhmetov PI
- 2020 2022: "Dynamics of Self-Adapting Networks" Call "Corona Crises and Beyond" VolkswagenStiftung PI, Lichtenberg Add-on

 2020 - 2024: "Geometric Desingularization of Non-Hyperbolic Equilibria in Iterated Maps" DFG Collaborative Research Center SFB/TR 109
 PI for project B10, co-PI Y. Suris

 2020 - 2023: "Dynamics of Contact Processes on Simplicial Complexes" within DFG SPP 2265: Random Geometric Systems PI C. Kuehn, co-PI N. Gantert

• 2020 - 2022: DAAD Prime Fellowship awarded to postdoc Dr. Maximilian Engel host C. Kuehn at TUM; declined due to group leader offer to M. Engel

 2020 - 2021: TUM Foundation Fellowship awarded to postdoc Dr. Chuang Xu host C. Kuehn

 2020 - 2023: "Synchronization in Co-Evolutionary Network Dynamics" TUM International Graduate School of Science and Engineering PI: C. Kuehn, co-PI E. Martens (DTU)

 2020 - 2021: John-von-Neumann Professorship Recipient: Professor Martin Rasmussen; postponed due to COVID host: C. Kuehn

 2019 - 2021: EuroTech Postdoctoral Fellowship awarded to postdoc Dr. Iacopo Longo host C. Kuehn

 2019 - 2020: TUM Global Incentive Fund Grant Collaboration grant / funding for a joint TUM-ICL workshop PI

2019 - 2021: Hans Fischer Senior Fellowship (Prof Krasimira Tsaneva-Atanasova)
 TUM Institute for Advanced Study
 PI and host C. Kuehn

• 2019: Teaching Award - Fachschaft Mathematik at TUM 3rd place; lecture: Nonlinear Dynamics selected by the students for excellence in teaching

2019 - 2021: Hans Fischer Fellowship (Dr Christian Bick)
 TUM Institute for Advanced Study
 PI and host C. Kuehn

2019 - 2023: Project TiPES (Tipping Points in the Earth System)
 European Union, Call: H2020-LC-CLA
 PI & WP-leader (seven WPs total)

 2019 - 2021: EuroTech Postdoctoral Fellowship awarded to postdoc Dr. Cinzia Soresina host C. Kuehn

 2020 - 2024: ANR project "PERISTOCH" scientific leader C. Kuehn; PI N. Berglund (Univ. Orleans)

 2019: John-von-Neumann Professorship Recipient: Professor Grigorios A. Pavliotis host: C. Kuehn

 2019 - 2020: AvH: Humboldt Research Fellowship awarded to postdoc Dr. Hildeberto Jardon-Kojakhmetov host C. Kuehn

 2019 - 2021: EuroTech Postdoctoral Fellowship awarded to postdoc Dr. Hildeberto Jardon-Kojakhmetov (declined due to AvH) host C. Kuehn

- 2018 2019: TUM Foundation Fellowship awarded to postdoc Dr. Hildeberto Jardon-Kojakhmetov host C. Kuehn
- 2017 2020: "Analysis of PDEs with Cross-Diffusion and Stochastic Driving" D-A-CH Individual Project Grant DFG & FWF PI, co-PI N. Zamponi
- 2017 2021: "Geometric Desingularization of Non-Hyperbolic Equilibria in Iterated Maps" DFG Collaborative Research Center SFB/TR 109 PI for project B10, co-PI Y. Suris
- 2017: Richard-von-Mises Prize International Association of Applied Mathematics and Mechanics (GAMM)
- 2017 now: Complexity Science Hub Vienna, Austria External Faculty Fellow
- 2016: Best Paper Award for 2015 (with F. Achleitner)
 Faculty of Mathematics & Geoinformation, Vienna University of Technology (for F. Achleitner & C. Kuehn, Adv. Diff. Eq., Vol. 20, No. 9-10, pp. 887-936, 2015)
- 2016 2019: "Critical Transitions and Systemic Risk in Socio-Economic Network Dynamical Systems"
 Austrian Science Fond (FWF) project grant

PI, co-PI S. Thurner, transferred to MedUni Wien

2016 - 2021: "Nonlinear Multiscale Dynamical Systems"
 Lichtenberg Professorship Grant, VolkswagenStiftung
 PI, only four grants awarded in 2015 across all sciences

AWARDS & GRANTS (POST-DOCTORAL LEVEL)

- 2015 2018: Innovative Training Networks Project CRITICS Call Horizon 2020 - MSCA-ITN-2014 associated member, 24 total participants
- 2013: Best Paper Award for 2012
 Faculty of Mathematics & Geoinformation, Vienna University of Technology (for C. Kuehn, SIAM Journal on Scientific Computing, 34(3), pp. A1635-A1658, 2012)
- 2013 2016: "Predictability and Continuation of Multiscale Systems" APART Fellowship - Austrian Academy of Sciences (ÖAW) PI
- 2013: Leibniz Fellowship Mathematisches Forschungsinstitut Oberwolfach (MFO) PI, 10 weeks fully financed research stay at MFO
- 2011 2013: "Singularly Perturbed Dynamical Systems" European Commission Marie-Curie Re-integration Grant PI, hosted by: P. Szmolyan, TU Vienna
- 2011: DAAD travel grant to attend ICIAM 2011 PI

AWARDS & GRANTS (PRE-DOCTORAL LEVEL)

- 2010: Travel grant for conference: "The 8th AIMS conference"
- 2010: Travel grant for conference: "Emerging Topics in DS & PDE"
- 2010: Travel grant for conference: "Stochastic Models in the Neurosciences"
- 2009: SIAM Certificate for "outstanding efforts and accomplishment" (for my role in the SIAM Chapter at Cornell University)

- 2008 2010: Three travel grants by the Cornell Graduate School
- 2007: SIAM Contest DSWeb 2007 Winner (\$ 1000 prize)
- 2007: Grant for workshop: "Nonlinear Evolution Equations and Dynamical Sytems"
- 2007: Selection & Grant for "AARMS Summer School 2007"
- 2006: JSS Scholarship & Travel Grant to attend the 16th Jyväskylä Summer School
- 2005 2006: Partial Bursary Cambridge European Trust
- 2005: Selection & Grant for "AARMS Summer School 2005"
- 2004, 2005: President's List Jacobs University Bremen (awarded for a grade point average of 1.5 or better [1.0=best,5.0=worst], my GPA was 1.1)
- 2002 2005: Merit-based scholarship Jacobs University Bremen

ORGANIZATION & SERVICE

- 2024: Organization (with J. Kurths, E.A. Martens & S. Yanchuk) of a mini-symposium Title: *Adaptive Network Dynamics* (8 talks) at the Dynamics Days Europe Conference (Bremen, Germany)
- 2024: Organization (jointly with R. Barrio & A. Iuorio) of a mini-symposium Title: *Applications of Multiple Time Scale Dynamics* (8 talks) at the Equadiff Conference (Karlstad, Sweden)
- 2023-2024: Guest Editor (with S. Yanchuk, E.A. Martens & J. Kurths) "Advances in Adaptive Dynamical Networks" Focus Issue for Chaos (AIP)
- 2023 now: Evaluation Board for TUM University Foundation Fellowship
- 2023 now: MDSI Focus Topic (founding member)
 "Interdisciplinary Research on Graphs, Networks, and Connectivity Structures (Interconnect)"
- 2023 now: Associate Editor "Journal of Nonlinear Science" (JNLS)
- 2023: TUM MSE Master Studies Entrance Examiner
- 2023: Organization (with N.Boers) of four events
 - Title: ESR workshop "Methods of Stochastic Multiscale Dynamics"
 - Title: Workshop "Critical transitions in complex climate models"
 - Title: ESR workshop "Data analysis and observations"
 - Title: TiPES & CriticalEarth Conference on Tipping in the Earth System
 - at TUM Institute for Advanced Study (Garching, Germany)
- 2022 now: MDSI student selection and paper prize committee member
- 2022: Organization (with I. Longo) of a workshop
 - Title: Critical Transitions and Non-Autonomous Bifurcations (25 talks)
 - at TUM Akademiezentrum (Raitenhaslach, Germany)
- 2022: Organization (with R. Berner, T. Gross, J. Kurths, S. Yanchuk) of a mini-symposium Title: *Adaptive Dynamical Networks* (12 talks)
 - at the Dynamics Days Europe (Aberdeen, Scotland)
- 2022: Organization (jointly with M. Gnann) of a mini-symposium
 - Title: Stochastic Pattern Dynamics (8 talks)
 - at the SIAM NWCS Conference (Bremen, Germany)
- 2022 now: Associate Editor
 - "SIAM Journal on Applied Dynamical Systems" (SIADS)
- 2022 now: Associate Editor
 - "Partial Differential Equations and Applications" (PDEA)

- 2021: Organization (jointly with H. Jardon-Kojakhmetov) of a mini-symposium Title: *Multiple Time Scale Dynamics and Applications* (4 talks) at the Dynamics Days Europe (Nice, France)
- 2021: Organization (jointly with I. Longo) of a mini-symposium Title: *Nonautonomous Bifurcation Theory* (4 talks) at the Dynamics Days Europe (Nice, France)
- 2021: Organization (with M. Beck, M. Chirilus-Bruckner, J. Rademacher) of a workshop Title: *Dynamics of Patterns* (25 talks) at the Mathematisches Forschungsinstitut Oberwolfach [MFO] (Oberwolfach, Germany)
- 2021: Conference organizer (with C. Bick, K. Tsaneva-Atanasova) Conference: Theory of Network Dynamics (10 talks) at TUM Institute for Advanced Study (Munich, Germany)
- 2021: Workshop organizer (jointly with M. Engel and A. Neamtu) Workshop on Methods in Stochastic Dynamics (16 talks) at Complexity Science Hub Vienna (Vienna, Austria)
- 2021: Organization (jointly with E. Martens) of a mini-symposium Title: *Synchronization Dynamics in Networks* (4 talks) at the SIAM Conference on Applications of Dynamical Systems (online event)
- 2020 2023: Co-initiator & scientific committee member One World Dynamics Seminar
- 2020 now: Vice-Speaker "Elitestudiengang TopMath"
- 2020 now: Scientific Director "Imperial TUM Mathematical Sciences Hub"
- 2020: Organization (jointly with H. Jardon-Kojakhmetov) of a mini-symposium Title: *Fast-Slow Systems* (4 talks) at the Dynamics Days Europe (Nice, France); conference cancelled
- 2020: Organization (jointly with M. Gnann) of a mini-symposium Title: *Stochastic Pattern Dynamics* (8 talks) at the SIAM NWCS Conference (Bremen, Germany); conference cancelled
- 2020-2021: Advisory Board for SIAM DS-group (elected by community vote)
- 2020: Organization (jointly with G. Pavliotis) of a mini-symposium Title: *Bifurcations and Uncertainty Quantification* (8 talks) at the SIAM UQ Conference (Garching, Germany); conference cancelled
- 2020: Workshop organizer
 TUM ICL Mathematics Workshop (10 talks, approx. 40 participants)
 at TUM Department of Mathematics (Munich, Germany)
- 2019-2022: Focus Group Leader for "Network Dynamics" jointly with: C. Bick and K. Tsaneva-Atanasova TUM Institute for Advanced Study (IAS)
- 2019: Organization (jointly with M. Cicalese) of the SFB/TR109-TopMath-ISAM Summer School Title: *Multiscale Phenomena in Geometry and Dynamics* (1 week school, 16 two-hour lectures) at the Technical University Munich (Munich, Germany)
- 2019: Organization (jointly with B. Gentz) of a mini-symposium Title: *Stochastic Dynamics* (8 talks) at the Equadiff Conference (Leiden, Netherlands)
- 2019: Organization (jointly with H. Jardon Kojakhmetov) of a mini-symposium Title: *New Directions in Multiple Time Scale Dynamics* (8 talks) at the SIAM Conference on Applications of Dynamical Systems (Snowbird, US)
- 2018 now: Mentor for Elitestudiengang "Theoretical Mathematical Physics"

• 2018: Organization (jointly with Y. Suris) of a mini-symposium

Title: *Structure Preservation in Discrete Dynamics* (3 talks)

at the Discretization in Geometry and Dynamics Conference (Berlin, Germany)

• 2018 - now: Chair of Doctoral Examination Commissions

(2018) Daniel Stilck Franca

(2019) Jonas Latz

(2020) Niklas Behringer

(2023) Stefan Bamberger

• 2018: Conference organizer (with N. Berglund, A. Debussche, F. Delarue) *Stochastic Partial Differential Equations* (approx. 30 talks)

at Centre International de Rencontres Mathématiques (Marseille, France)

• 2018: Workgroup TUM/TU-Wien Organizer

Fractional Laplacian: Numerics, Analysis, Dynamics (5 talks)

at Technical University of Munich (Garching, Germany)

- 2017: Head of TopMath Examination Board (independent studies exams)
- 2017: Workshop organizer (jointly with L. Horstmeyer and S. Thurner) *Workshop on Adaptive Networks* (8 talks) at Complexity Science Hub Vienna (Vienna, Austria)
- 2017 now: Entrance Committee Member, Mathematics in Science and Engineering at TUM
- 2017 now: Various selection panels for TopMath students
- 2017 now: TopMath Independent Studies Examiner

(2017) L. Arcidiacono, M. Forster, N. Schilling.

(2018) L. Arcidiacono, T. Böhle, M. Forster, D. Hien, N. Schilling.

(2019) M.E. Gonzalez.

(2021) G. Zucal.

(2022) G. Chiusole.

• 2017: Organization (jointly with D. Blömker) of a mini-symposium

Title: *Stochastic Dynamics* (4 talks)

at the SIAM Conference on Applications of Dynamical Systems (Snowbird, US)

- 2016 now: Steering Board Member, TUM Elitestudienprogramm TopMath
- 2015: Conference organizer (jointly with F. Hubalek)

Austrian Stochastics Days (18 talks)

at Vienna University of Technology (Vienna, Austria)

• 2015: Organization (jointly with J. Rademacher) of a mini-symposium

Title: *Dynamics of Patterns* (8 talks)

at the DMV Annual Meeting (Hamburg, Germany)

• 2015: Organization (jointly with D. Avitabile and H. Uecker) of a mini-symposium

Title: Frontiers in Numerical Continuation Methods (8 talks)

at the SciCADE Conference (Potsdam, Germany)

• 2015: Organization (jointly with M. Wolfrum) of a mini-symposium

Title: Coupled Oscillators and their Mean-Field Dynamics (8 talks)

at the Equadiff Conference (Lyon, France)

• 2014: Organization of a mini-workshop

Title: Fluids, Dynamics and Differential Equations (2 talks)

at Vienna University of Technology (Vienna, Austria)

• 2014: Organization (jointly with B. Sandstede) of a mini-symposium

Title: Stochastic Partial Differential Equations and Patterns (4 talks)

at the SIAM Conference on Nonlinear Waves and Coherent Structures (Cambridge, UK)

- 2013: Organization of a mini-symposium
 - Title: Numerical Methods for Stochastic Dynamical Systems (4 talks)
 - at the SIAM Conference on Applications of Dynamical Systems (Snowbird, US)
- 2011: Organization (jointly with S. Hallerberg & H. Kantz) of a mini-symposium Title: *Dynamics of Critical Transitions and Extreme Events* (4 talks) at the Dynamics Days Europe (Oldenburg, Germany)
- 2011: Organization (jointly with J. Sieber) of a mini-symposium
 Title: Prediction of Noisy Slow-Fast Critical Transitions (8 talks)
 at the SIAM Conference on Applications of Dynamical Systems (Snowbird, US)
- 2009: Established SIAM Student Chapter at Cornell University
- 2008-2010: Initiated and organized the "Graduate Student Applied Dynamical Systems Seminar" at Cornell University

REVIEWING

- Reviewer (journals):
 - Acta Applicandae Mathematicae
 - Acta Biotheoretica
 - Advances in Complex Systems
 - Advances in Difference Equations
 - AIP Advances
 - American Naturalist
 - Annals of Applied Probability
 - Annals of Probability
 - Applied Mathematical Modelling
 - Applied Mathematics and Computation
 - Applied Mathematics Letters
 - Bioinformatics and Biology Insights
 - Boundary Value Problems
 - Bulletin of Mathematical Biology
 - Chaos: An Interdisciplinary Journal of Nonlinear Science
 - Climate Dynamics
 - Communications in Mathematical Physics
 - Communications in Nonlinear Science and Numerical Simulation
 - Computational Science & Discovery
 - Computer Methods and Programs in Biomedicine
 - Computers and Mathematics with Applications
 - Discrete and Continuous Dynamical Systems Series B
 - Discrete and Continuous Dynamical Systems Series S
 - Earth System Dynamics
 - Ecological Complexity
 - European Biophysics Journal
 - European Physical Journal B
 - European Physical Journal Plus
 - European Physics Letters
 - Fluctuation and Noise Letters
 - Frontiers in the Life Sciences
 - IEEE Transactions on Circuits and Systems

- IEEE Transactions on Network Science and Engineering
- International Journal of Bifurcation and Chaos
- International Journal of Neural Systems
- International Journal of Nonlinear Sciences and Numerical Simulation
- Journal of Applied Analysis
- Journal of Computational and Applied Mathematics
- Journal of Computational Dynamics
- Journal of Dynamics and Differential Equations
- Journal of Differential Equations
- Journal of Functional Analysis
- Journal of Mathematical Analysis and Applications
- Journal of Mathematical Biology
- Journal of Mathematical Neuroscience
- Journal of Nonlinear Science
- Journal of Physics A: Mathematical and Theoretical
- Journal of Physics: Conference Series
- Journal of Statistical Mechanics
- Journal of the European Mathematical Society
- Journal of the Royal Society Interface
- Kinetic & Related Models
- Letters in Mathematical Physics
- Mathematical Biosciences
- Mathematical Biosciences and Engineering
- Mathematical Methods in the Applied Sciences
- Mathematical Modelling and Analysis
- Mathematical Modelling of Natural Phenomena
- Mathematics (AIMS)
- Mathematics and Computers in Simulation
- Mathematics and Mechanics of Solids
- Mathematische Nachrichten
- Memoirs of the American Mathematical Society
- Neural Processing Letters
- New Journal of Physics
- Nonlinear Analysis A: Theory, Methods & Applications
- Nonlinear Differential Equations and Applications NoDEA
- Nonlinear Dynamics
- Nonlinearity
- Numerical Algorithms
- PLoS One
- Philosophical Transactions of the Royal Society A
- Physica A: Statistical Mechanics and its Applications
- Physica D: Nonlinear Phenomena
- Physical Review E
- Physical Review X
- Physics Letters A
- Probability, Uncertainty and Quantitative Risk
- Proceedings of the American Mathematical Society

- Proceedings of the National Academy of Sciences, India A
- Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences
- Royal Society Open Science
- Scientific Reports
- SIAM Journal on Applied Dynamical Systems
- SIAM Journal on Applied Mathematics
- SIAM Journal on Mathematical Analysis
- SIAM Multiscale Modeling and Simulation
- SIAM Review
- Stochastics
- Theoretical Ecology
- Theoretical Population Biology
- Zeitschrift für Angewandte Mathematik und Physik
- Reviewer (books):
 - Society for Industrial and Applied Mathematics (SIAM)
 - Springer Mathematics Applied Mathematical Sciences
 - Springer Mathematics Monographs
 - Springer Physics Edited Volumes
- Reviewer (funding agencies & institutes):
 - Alexander von Humboldt Foundation, Germany
 - Agence Nationale de la Recherche (ANR), France
 - Austrian Agency for Education and Internationalisation (OeAD), Austria
 - Banff International Research Station, Canada
 - Croatian Science Foundation (CSF), Croatia
 - Deutsche Forschungsgemeinschaft (DFG), Germany
 - Dynasty Foundation, Russia
 - German Academic Exchange Service (DAAD), Germany
 - Israel Science Foundation (ISF), Israel
 - Marsden Fund, New Zealand
 - National Science Centre (NCN), Poland
 - Natural Sciences and Engineering Research Council (NSERC), Canada
 - Netherlands Organisation for Scientific Research (NWO), Netherlands
 - Research Foundation Flanders (FWO)
 - Studienstiftung des deutschen Volkes, Germany
 - TUM SFB/TR 109 Internal Proposals, Germany
- External reviewer dissertations & theses:
 - 2017 Dr. Marius Yamakou, University of Leipzig / MPI-MIS
 - 2018 M.Sc. Kevin Höhlein, TUM (M.Sc. thesis, Department of Physics)
 - 2020 Dr. Jichen Yang, University of Bremen
 - 2020 Dr. Günter Schneckenreither, TU Wien
 - 2020 Dr. Christian Aarset, University of Klagenfurt
 - 2022 Dr. Florian Huber, TU Wien
 - 2022 Dr. Artur Prugger, University of Bremen
 - 2023 M.Sc. Eun Joo Kim, TUM (M.Sc. thesis, Department of Aerospace and Geodesy)
 - 2023 Dr. Alexandra Holzinger, TU Wien
 - 2023 M.Sc. Paul Nemec, TUM (M.Sc. thesis, Department of Physics)
 - 2024 Dr. Seungjae Lee, TUM Physics

MENTORING

- Postdoctoral Researcher: Maxime Breden
- Postdoctoral Researcher: Maximilian Engel
- Postdoctoral Researcher: Manuel Gnann
- Postdoctoral Researcher: Bastian Hilder
- Postdoctoral Researcher: Leonhard Horstmeyer (jointly with S. Thurner)
- Postdoctoral Researcher: Felix Hummel
- Postdoctoral Researcher: Hildeberto Jardon-Kojakhmetov
- Postdoctoral Researcher: Samuel Jelbart
- Postdoctoral Researcher: Konstantin Clauß
- Postdoctoral Researcher: Iacopo Longo
- Postdoctoral Researcher: Kerstin Lux
- Postdoctoral Researcher: Jan Mölter
- Postdoctoral Researcher: Chris Münch (jointly with M. Brokate)
- Postdoctoral Researcher: Alexandra Neamtu
- Postdoctoral Researcher: Chiara Piazzola (jointly with E. Ullmann)
- Postdoctoral Researcher: Elena Queirolo
- Postdoctoral Researcher: Nada Sissouno (main mentor F. Krahmer)
- Postdoctoral Researcher: Cinzia Soresina
- Postdoctoral Researcher: Jan-Eric Sulzbach
- Postdoctoral Researcher: Sebastian Throm
- Postdoctoral Researcher: Tobias Wöhrer
- Postdoctoral Researcher: Chuang Xu
- Doctoral Student: Luca Arcidiacono
- Doctoral Student: Paolo Bernouzzi
- Doctoral Student: Tobias Böhle
- Doctoral Student: Gideon Chiusole
- Doctoral Student: Marios Gkogkas
- Doctoral Student: Maria Elena Gonzalez Herrero
- Doctoral Student: Annalisa Iuorio (main mentor: P. Szmolyan)
- Doctoral Student: Valérian Jaques-Dumas (main mentor: H. Dijkstra)
- Doctoral Student: Benjamin Jüttner (main mentor: E.A. Martens)
- Doctoral Student: Christian Kluge

- Doctoral Student: Sara-Viola Kuntz
- Doctoral Student: Lucia Layritz (main mentor: A. Rammig)
- Doctoral Student: Anne Pein
- Doctoral Student: Carlos Pulido (main mentor: J. Soler)
- Doctoral Student: Sacha Sinnet (main mentors: H. Dijkstra and A. von der Heydt)
- Doctoral Student: Maximilian Steinert
- Doctoral Student: Pia Steinmeyer (jointly with N. Gantert)
- Doctoral Student: Lara Trussardi (main mentor: A. Jüngel)
- Doctoral Student: Andreas Widder (main mentor: V. Veliov)
- Master Student: Luca Arcidiacono
- Master Student: Saadinur Azisbek Uulu (jointly with P. Bernouzzi)
- Master Student: Dylan Bansard-Tresse (jointly with M. Engel)
- Master Student: Christopher Beekmann (jointly with G. Chiusole)
- Master Student: Tomer Berlinski (jointly with J. Mölter)
- Master Student: Tobias Böhle
- Master Student: Andreas Burkhart (jointly with H. Jardon)
- Master Student: Gideon Chiusole (jointly with N. Gantert)
- Master Student: Matteo Cirachi (TMP mentor)
- Master Student: Alexandru Craciun (jointly with D. Ghoshdastidar)
- Master Student: Dominik Denkscherz (jointly with I. Longo)
- Master Student: Antonia Düx (jointly with P. Bernouzzi)
- Master Student: Stefanie Ecker (jointly with M.E. Gonzalez Herrero)
- Master Student: Noémie Ehstand (jointly with C. Soresina)
- Master Student: Katharina Eichinger (jointly with A. Neamtu)
- Master Student: Manuel Fuchsberger (jointly with M. Scherer)
- Master Student: Margaret Lane (jointly with C. Soresina)
- Master Student: Marios Gkogkas (jointly with M. Engel)
- Master Student: Frederik Heers
- Master Student: Maria Elena Gonzalez Herrero
- Master Student: Tobias Jawecki
- Master Student: Eun Joo Kim (jointly with N. Boers)
- Master Student: Michael Klausz (jointly with K. Glau)
- Master Student: Ekin Su Köksal (jointly with K. Lux)

- Master Student: Hana Krakovská (jointly with I. Longo)
- Master Student: Harsha Kumar (jointly with H. Jardon)
- Master Student: Sara-Viola Kuntz (jointly with S. Jelbart)
- Master Student: Aliaksei Kuzmenka (jointly with J.-E. Sulzbach)
- Master Student: Verena Lachner (jointly with F. Hummel)
- Master Student: Polina Lakrisenko (jointly with M. Breden)
- Master Student: Pascal Lehner (jointly with J.-E. Sulzbach)
- Master Student: Alejandro Martínez Sánchez (jointly with S. Jelbart)
- Master Student: Alejandro Morera (jointly with T. Wöhrer)
- Master Student: Merlin Pelz (jointly with M. Silber)
- Master Student: Sebastian Pfaff (jointly with M. Sensi)
- Master Student: Johannes Piller (jointly with M. Engel)
- Master Student: Konrad Reichel (jointly with S.-V. Kuntz and T. Wöhrer)
- Master Student: Francesco Romano
- Master Student: Maximilian Schemel (jointly with M. Steinert)
- Master Student: Elisabeth Schiessler (jointly with A. Jüngel)
- Master Student: Andreas Scheibner (jointly with F. Hummel and S. Jelbart)
- Master Student: Daniela Schlager (jointly with K. Clauß)
- Master Student: Pascal Sedlmeier
- Master Student: Onur Serin (jointly with F. Krahmer)
- Master Student: Frieder Simon (jointly with P. Szmolyan)
- Master Student: Edrick Solís González (jointly with J. Mölter)
- Master Student: Maximilian Steinert
- Master Student: Thomas Steinhofer (jointly with M. Engel)
- Master Student: Pia Steinmeyer (jointly with M. Engel)
- Master Student: Jacopo Vittadello (jointly with I. Longo)
- Master Student: Julian Westermeier
- Master Student: Lukas Wittmann
- Master Student: Antoine Wolff (jointly with M. Breden)
- Master Student: Dominik Worf
- Master Student: Yannick Wyss (jointly with T. Böhle)
- Master Student: Giulio Zucal
- Master Student: Xuexing Zhao (jointly with J.-E. Sulzbach)

- Bachelor Student: Luca Arcidiacono
- Bachelor Student: Maxim Baumgärtel (jointly with J. Mölter)
- Bachelor Student: Philippe Biberich
- Bachelor Student: Tobias Böhle
- Bachelor Student: Stefanie Ecker
- Bachelor Student: Alexander Feil (jointly with L. Layritz)
- Bachelor Student: Maria Elena Gonzalez Herrero
- Bachelor Student: Haowen Guan
- Bachelor Student: Ekin Su Köksal (jointly with A. Pein)
- Bachelor Student: Sara-Viola Kuntz (jointly with M. Engel)
- Bachelor Student: Verena Lachner
- Bachelor Student: Marina Lex
- Bachelor Student: Matthias Niller
- Bachelor Student: Viktor Saprykin
- Bachelor Student: Aleksandr Solodovnik (jointly with M. Steinert)
- Bachelor Student: Julian Streit
- Bachelor Student: Maximilian Windsheimer (jointly with L. Arcidiacono)
- Bachelor Student: Tongyan Wu (jointly with E. Queirolo)

TEACHING (AS A PROFESSOR)

2024	Lecture: "Analysis 2" - TUM
2024	Oberseminar: "Dynamics" - TUM
2023 - 2024	Lecture: "Analysis 1" - TUM
2023 - 2024	Oberseminar: "Dynamics" - TUM
2023	Invited Lecturer: Summer School Multiscale Analysis (Groningen, Netherlands)
2023	Hauptseminar: "PDE Dynamics" - TUM
2023	Lecture: "Dynamical Systems" - TUM
2023	Oberseminar: "Dynamics" - TUM
2023	Lecturer: Winter School CriticalEarth (Garching, Germany)
2022 – 2023	Lecture: "Stochastic Dynamics" - TUM
2022 – 2023	Lecture: "Introduction to Nonlinear Dynamics" - TUM
2022 – 2023	Oberseminar: "Dynamics" - TUM
2022	Hauptseminar: "Modelling Epidemic Network Dynamics" - TUM
2022	Lecture: "Dynamical Systems" - TUM

2022	Oberseminar: "Dynamics" - TUM
2021 – 2022	Research Sabbatical - TUM
2021 – 2022	Oberseminar: "Dynamics" - TUM
2021	Hauptseminar: "Nonautonomous Dynamical Systems" - TUM
2021	Lecture: "Dynamical Systems" - TUM
2021	Oberseminar: "Dynamics" - TUM
2020 – 2021	Oberseminar: "Dynamics" - TUM
2020	Lecture: "Gewöhnliche Differentialgleichungen" - TUM
2020	Oberseminar: "Dynamics" - TUM
2019 – 2020	Lecture: "Analysis 3 für Elektrotechnik" - TUM
2019 – 2020	Oberseminar: "Dynamics" - TUM
2019	Lecture: "Gewöhnliche Differentialgleichungen" - TUM
2019	Oberseminar: "Dynamics" - TUM
2018 – 2019	Lecture: "Case Studies in Mathematical Modelling" - TUM
2018 – 2019	Lecture: "Introduction to Nonlinear Dynamics" - TUM
2018 – 2019	Hauptseminar: "Chaos & Chance" - TUM
2018 – 2019	Oberseminar: "Dynamics" - TUM
2018	Lecture: "Dynamical Systems" - TUM
2018	Oberseminar: "Dynamics" - TUM
2018	(Pro-)Seminar: "Network Science" - TUM
2018	Invited Lecturer: Winter School CRITICS (Wöltingerode, Germany)
2017 – 2018	Lecture: "Introduction to Nonlinear Dynamics" - TUM
2017 – 2018	Hauptseminar: "Topics in Dynamical Systems" - TUM
2017 – 2018	Oberseminar: "Dynamics" - TUM
2017	Lecture: "Dynamical Systems" - TUM
2017	Oberseminar: "Dynamics" - TUM
2017	(Pro-)Seminar: "Introduction to Network Dynamics" - TUM
2017 – now	Module Responsibility: Dynamics - TUM
2017 – now	Mathematische Grundlagenprüfung - TUM
2016 – 2017	Lecture: "Interactions between Dynamics and PDE" - TUM
2016	Invited Lecturer: School on Multistability and Tipping (Dresden, Germany)

TEACHING (AS A POSTDOC)

2015 Seminar (jointly with M. Melenk): "Computational Stochastic PDE" - TU Vienna

2015 Invited Lecturer: MURPHYS-HSFS Spring School (Levico Terme, Italy)

2015 Invited Lecturer: School on Dynamics of Multilevel Systems (MPI-PKS, Dresden)

2014 – 2015 Lecture: "Dynamical Systems and Partial Differential Equations" - TU Vienna

TEACHING & WORK EXPERIENCE (AS A STUDENT)

2007 – 2010 Graduate Research Assistant - Cornell University

2007 Teaching Assistant Trainer - Cornell University

2006 – 2007 Teaching Assistant - Cornell University

Math191 Calculus for Engineers Math424 Fourier Series and Wavelets Math428 Partial Differential Equations

2005 Student Assistant - Jacobs University Bremen

2004 – 2005 Teaching Assistant - Jacobs University Bremen

2nd-year undergraduate course: Numerical Methods

2004 Internship - ONVIDA GmbH (Duisburg, Germany)

2003 Internship - EADS Space Transportation (Bremen, Germany)

SELECTED PLENARY TALKS (* = UPCOMING)

* Equadiff (Karlstad, Sweden)

2023 12th Conference on Qualitative Theory of Differential Equations (Szeged, Hungary)

2017 GAMM Annual Meeting (Weimar, Germany)

INVITED TALKS (* = UPCOMING)

* Lorentz Center Multiple Scales Workshop (Leiden, Netherlands)

* SPDEs Workshop at TU Delft (Delft, Netherlands)

* SFB Workshop (Aachen, Germany)

* Minisymposium at SIAM UQ (Trieste, Italy)

2023 Stochastics Seminar Fernuniversität Hagen (Hagen, Germany)

2023 Ask-me-if Seminar (Munich, Germany)

2023 MDSI Interdisciplinary Exchange (Munich, Germany)

2023 Colloquium at University of Orleans (Orleans, France)

2023 Dynamics Days Europe (Naples, Italy)

2023 BMS Math+ Colloquium (Berlin, Germany)

2023 SIAM Applied Dynamical Systems Conference (Portland, USA)

2023 TUM-Augsburg PDE Workshop (Kloster Seeon, Germany)

2023	Conference on Cross-Diffusion Systems (Konstanz, Germany)
2022	Topics in Multiple Time Scale Dynamics (Banff, Canada; online)
2022	UBC Mathematical Biology Seminar (Vancouver, Canada; online)
2022	Kinetic & Hydrodynamic Descriptions in Collective Behaviour (Granada, Spain)
2022	ETH Zürich, Seminar Talk (Zürich, Switzerland)
2022	Random Discrete Structures (Schliersee, Germany)
2022	SIAM Nonlinear Waves and Coherent Structures (Bremen, Germany)
2022	Stochastic Dynamics, Nonlinear Probability, and Ergodicity (Durham, UK)
2022	Workshop on Ecological Dynamics (Leiden, Netherlands)
2022	Applied Geometry for Data Sciences (Chongqing, China; hybrid)
2022	7th International Conference on RDS (Hanoi, Vietnam; hybrid)
2022	SIAM Conference on Life Sciences (Pittsburgh, USA)
2022	Nordita Workshop on Complex Dynamical Networks (Stockholm, Sweden)
2022	Stochastic Modelling of Complex Systems (Berlin, Germany)
2022	CSH External Faculty Meeting Workshop (Vienna, Austria)
2022	Mathematical Concepts in the Sciences and Humanities (Leipzig, Germany)
2022	TUM IGSSE Forum (Munich, Germany)
2022	SPP2265 Opening Conference (Berlin, Germany)
2022	Analysis Seminar University of Erlangen (Erlangen, Germany; online)
2022	Dynamics Days US (USA; online)
2021	Mathematical Biology Seminar (University of Iowa, USA; online)
2021	Seminar Stochastics Uni Leipzig (Leipzig, Germany; online)
2021	DMV-ÖMG Annual Meeting (Passau, Germany; online)
2021	Workshop on Diffusive Systems (Edinburgh, Scotland; online)
2021	Dynamics Days Europe (Nice, France; online)
2021	SIAM Applied Dynamical Systems Conference (online)
2021	SN PDE Seminar (online)
2021	Nonlinear Meeting 2021 (online)
2020	DMV Annual Meeting (Chemnitz, Germany; online)
2020	Critical Transitions in Complex Systems (Shanghai, China; online)
2020	Dynamical Systems Applied to Biology and Natural Sciences (Trento, Italy)
2020	Max Planck Institute MIS, Seminar (Leipzig, Germany)
2019	7th Viennese Vintage Workshop (Vienna, Austria)

2019	CSH Workshop on Higher-Order Networks (Vienna, Austria)
2019	TiPES Opening Workshop (Paris, France)
2019	Seminar Radboud University Nijmegen (Nijmegen, Netherlands)
2019	ENUMATH 2019 (Egmond aan Zee, Netherlands)
2019	Seminar TU Delft (Delft, Netherlands)
2019	New Mathematical Methods for Complex Systems in Ecology (Banff, Canada)
2019	International Congress of Industrial and Applied Mathematics (Valencia, Spain)
2019	Equadiff [2 talks] (Leiden, Netherlands)
2019	Heriot Watt University Math-Bio Colloquium (Edinburgh, UK)
2019	SIAM Applied Dynamical Systems Conference (Snowbird, USA)
2019	Santa Fe Institute Colloquium (Santa Fe, USA)
2019	GAMM Annual Meeting (Vienna, Austria)
2019	Oberseminar Dynamical Systems Uni Stuttgart (Stuttgart, Germany)
2018	Workshop on Nonlinear Stochastic Evolution Equations (Berlin, Germany)
2018	Mathematisches Kolloquium Universität Innsbruck (Innsbruck, Austria)
2018	Discretization in Geometry and Dynamics Conference (Berlin, Germany)
2018	Control of Self-Organizing Nonlinear Systems (Warnemünde, Germany)
2018	Dynamics Days Europe [2 talks] (Loughborough, UK)
2018	Workshop on Stochastic Population Models on Networks (Garching, Germany)
2018	Mathematisches Kolloquium Universiät Klagenfurt (Klagenfurt, Austria)
2018	Conference on Mathematics of Wave Phenomena (Karlsruhe, Germany)
2018	Seminar Talk: Technical University of Munich (Munich, Germany)
2018	Mathematisches Kolloquium Universiät Bremen (Bremen, Germany)
2018	SFB 1114: Scaling Cascades in Complex Systems (Berlin, Germany)
2018	SFB/TR 109 Introductory Seminar (Munich, Germany)
2018	Complexity Science Hub Vienna Annual Meeting (Vienna, Austria)
2018	Prediction of Transitions in Complex Systems (Dresden, Germany)
2018	GAMM Annual Meeting [2 talks] (Munich, Germany)
2018	Extremes2018 Conference (Hannover, Germany)
2017	IRTG 2235: Analysis of Singular and Random Systems (Bielefeld, Germany)
2017	Workshop on Random Dynamical Systems (Leiden, Netherlands)
2017	Joint Analysis Seminar Augsburg-München (Munich, Germany)
2017	GAMM PDE-AG Workshop (Eindhoven, Netherlands)

2017	Austrian Stochastics Days (Salzburg, Austria)
2017	DMV-ÖMG Annual Meeting [2 talks] (Salzburg, Austria)
2017	5th CliMathNet Conference (Reading, UK)
2017	Equadiff (Bratislava, Slovakia)
2017	European Nonlinear Dynamics Conference [3 talks] (Budapest, Hungary)
2017	Dynamical Systems and Geometric Mechanics Conference (Munich, Germany)
2017	SIAM Conference on Applications of Dynamical Systems (Snowbird, USA)
2017	SFB/TR 109 PI-Seminar, TU Munich (Munich, Germany)
2017	Rough Paths and SPDE Seminar, TU Berlin (Berlin, Germany)
2017	Langenbach Seminar, WIAS Berlin (Berlin, Germany)
2017	Fractional Differential Equations Mini-Workshop (Munich, Germany)
2017	GAMM Annual Meeting, UQ Section (Weimar, Germany)
2017	Antrittsvorlesung / Hurwitz-Seminar, TU Munich (Munich, Germany)
2016	SFB/TR 109, Annual Meeting (Berlin, Germany)
2016	Workshop on Multistability and Tipping, MPI-PKS (Dresden, Germany)
2016	Conference on Complex Systems (Amsterdam, Netherlands)
2016	Critical Transitions in Complex Systems Workshop (Kulhuse, Denmark)
2016	7th International Workshop on Set-Oriented Numerics (Berlin, Germany)
2016	ESI: Entropy methods, dissipative systems, and applications (Vienna, Austria)
2016	Mathematics Colloquium, University of Oldenburg (Oldenburg, Germany)
2016	ICBM Group Seminar, University of Oldenburg (Oldenburg, Germany)
2016	Haerendel Birthday Symposium (Bremen, Germany)
2016	Jacobs University Mathematics Colloquium (Bremen, Germany)
2015	Real Algebraic Geometry Seminar, University of Constance (Constance, Germany)
2015	Minisymposium on Multiscale and Stochastic Dynamics (Munich, Germany)
2015	MBI Workshop: Uncertainty, Sensitivity and Predictability (Columbus, USA)
2015	DMV Annual Meeting, Moment Problem Minisymposium (Hamburg, Germany)
2015	SciCADE, Molecular Dynamics Minisymposium (Potsdam, Germany)
2015	Dynamical Systems Seminar, Imperial College (London, UK)
2015	Applied Mathematics Colloquium, University of Nottingham (Nottingham, UK)
2015	Workshop on Dynamics of Multilevel Systems, MPI-PKS (Dresden, Germany)
2015	SIAM Conference on Applications of Dynamical Systems (Snowbird, USA)
2015	Joint Analysis Seminar Augsburg-München (Augsburg, Germany)

2015	GAMM-Workshop: Dynamik und Regelungstheorie (Hamburg, Germany)
2014	7th Workshop on Random Dynamical Systems (Bielefeld, Germany)
2014	Seminar Talk, TU Vienna (Vienna, Austria)
2014	Mathematics Colloquium, Jacobs University (Bremen, Germany)
2014	Workshop on Rhythms in Complex Networks at NBI (Copenhagen, Denmark)
2014	Control of Self-Organizing Nonlinear Systems (Warnemünde, Germany)
2014	SIAM Nonlinear Waves and Coherent Structures (Cambridge, UK)
2014	1st Spanish-Italian Mathematics Societies Meeting (Bilbao, Spain)
2014	8th European Nonlinear Dynamics Conference (Vienna, Austria)
2014	SFB/TR Discretization in Geometry and Dynamics - Seminar (Munich, Germany)
2014	Oberseminar Differentialgleichungen (Augsburg, Germany)
2014	IST Austria - Seminar (Klosterneuburg, Austria)
2014	MURPHYS-HSFS at WIAS (Berlin, Germany)
2014	ÖAW Mathematik-Informatik Workshop (Vienna, Austria)
2014	Max Planck Institute Symposium (Munich, Germany)
2014	Workshop on Infinite-Dimensional Stochastic Systems (Wittenberg, Germany)
2013	FAM Seminar at TU Vienna (Vienna, Austria)
2013	Workshop: Dynamic Models of Economic-Population Systems (Vienna, Austria)
2013	6th Workshop on Random Dynamical Systems (Bielefeld, Germany)
2013	DK Seminar - Dissipation and Dispersion in PDEs (Vienna, Austria)
2013	ICMS Workshop on Tipping Point Theory (Edinburgh, UK)
2013	Summer School: Numerical Methods for SDEs (Vienna, Austria)
2013	Max Planck Institute DS, Advances Seminar (Göttingen, Germany)
2013	Workshop on Fast-Slow Systems at CRM (Barcelona, Spain)
2013	SIAM Conference on Applications of Dynamical Systems (Snowbird, USA)
2013	University of Warwick Complexity Forum (Coventry, UK)
2013	University of Oldenburg ICBM Colloquium (Oldenburg, Germany)
2012	Patterns, Nonlinear Dynamics and Applications, PANDA (Bath, UK)
2012	University of Exeter, Dynamics Seminar (Exeter, UK)
2012	Workshop on Random Models in Neuroscience (Paris, France)
2012	Université d'Orléans, MAPMO Seminar (Orléans, France)
2012	Vienna University of Technology, Institute-Colloquium (Vienna, Austria)
2012	Tipping Points Seminar - Northwestern University (Online Meeting)

2012	Workshop on Critical Transitions in Complex Systems (London, UK)
2012	7th MathMod Conference (Vienna, Austria)
2011	Int. Workshop on Hysteresis and Slow-Fast Systems (Wittenberg, Germany)
2011	Max Planck Institute MIS, Dynamical Systems Seminar (Leipzig, Germany)
2011	Equadiff 2011, Singular Pertubations Minisymposium (Loughborough, UK)
2011	7th Int. Congress on Industrial and Applied Math. (Vancouver, Canada)
2011	Computational Methods in Dynamics (Trieste, Italy)
2011	Workshop on Generalized Modelling [CfD] (Dresden, Germany)
2011	Max Planck Institute - PKS Biophysics Seminar (Dresden, Germany)
2011	TU Chemnitz Nonlinear Dynamics Seminar (Chemnitz, Germany)
2010	Max Planck Institute - MIS Networks Meeting (Leipzig, Germany)
2010	Max Planck Institute - PKS Time Series Seminar (Dresden, Germany)
2010	4th Workshop on Random Dynamical Systems (Bielefeld, Germany)
2010	Max Planck Institute - PKS Networks Seminar (Dresden, Germany)
2010	University of Bielefeld, Numerics Seminar (Bielefeld, Germany)
2010	SIAM Emerging Topics in Dynamical Systems & PDEs (Barcelona, Spain)
2010	8th AIMS Conference (Dresden, Germany)
2010	Boston University, Dynamics Seminar (Boston, USA)
2010	Max Planck Institute - MIS (Leipzig, Germany)
2010	University of Bristol, BCANM Seminar (Bristol, UK)
2010	TU Vienna, Analysis and Scientific Computing Seminar (Vienna, Austria)
2010	FU Berlin, Nonlinear Dynamics Seminar (Berlin, Germany)
2009	Max-Planck Institute for Physics of Complex Systems (Dresden, Germany)
2009	Jacobs University, Geometry and Dynamics Seminar (Bremen, Germany)
CONTRIBUTE	D TALKS & POSTER PRESENTATIONS
2018	Oberseminar Dynamics (Munich, Germany)
2018	Munich-Vienna Fractional Meeting (Munich, Germany)
2016	Workshop on Numerics of SPDEs (Linz, Austria)
2015	DMV Annual Meeting (Hamburg, Germany)
2015	SciCADE (Potsdam, Germany)
2015	Equadiff (Lyon, France)
2014	3rd Austrian Stochastics Days (Leoben, Austria)
2014	SIAM Nonlinear Waves and Coherent Structures (Cambridge, UK)

2014	10th Austrian Numerical Analysis Days (Vienna, Austria)
2014	GAMM Annual Meeting (Erlangen, Germany)
2014	German Probability and Statistics Days (Ulm, Germany)
2012	TU Vienna - Graduate PDE Seminar, (Vienna, Austria)
2012	1st Austrian Stochastics Days, (Linz, Austria)
2012	Mathematical Physics of Complex Networks (Dresden, Germany)
2011	Dynamics Days Europe 2011 (Oldenburg, Germany)
2011	SIAM Conference on Applications of Dynamical Systems (Snowbird, USA)
2011	75th DPG Annual Meeting, (Dresden, Germany)
2010	Extremes 2010 Workshop, (Potsdam, Germany)
2010	Cornell University, Graduate Applied Dynamics Seminar (Ithaca, USA)
2009	Cornell University, Graduate Applied Dynamics Seminar (Ithaca, USA)
2009	Dynamics Days Europe (Göttingen, Germany)
2009	SIAM Conference on Applications of Dynamical Systems (Snowbird, USA) [Poster]
2009	Cornell University, Graduate Applied Dynamics Seminar (Ithaca, USA)
2009	Cornell University, Dynamical Systems Seminar (Ithaca, USA)
2008	Cornell University, Graduate Applied Dynamics Seminar (Ithaca, USA)
2008	10th Experimental Chaos Conference (Catania, Italy) [Poster]
2008	Cornell University, Dynamical Systems Seminar (Ithaca, USA)
SCIENCE COM	MUNICATION & PROFESSIONAL DEVELOPMENT
2023	Featured Article in "Faszination Forschung" EU project Tipping Points in the Earth System TiPES, with N. Boers
2023	Invited Speaker at VolkswagenStiftung Professional team development in science
2022–now	Online platform MunDyn (under development) community website for the greater Munich area
2022-now	Online platform for dynamical systems (under development) visualization and interactive dynamics
2021–now	Youtube Channel Online science talks of 'Multiscale and Stochastic Dynamics" group
2021	TUM - press release Topic: Universal equation for explosive phenomena Coverage: Tipping Points in the Earth Systems website Coverage: Informationsdienst Wissenschaft Coverage: Department of Mathematics, TUM
2020	Fakultät Mathematik Website - press release Topic: One World Dynamics Seminar launched

2020	Fakultät Mathematik Website - press release Topic: Imperial College London / TUM Mathematical Sciences Hub launched
2019	TUM Graduate School "Kick-Off Seminar" (Raitenhaslach, Germany) Keynote Speaker; lecture for beginning doctoral students
2019	Fakultät Mathematik Website - press release Topic: TiPES - When does the climate change?
2019	TUM "Studieninformationstag" (Munich, Germany) Invited Speaker / Workshop-Leader; mathematics for high-school students
2018	TUM Blog "Studium & Lehre" (Munich, Germany) Invited interview for: Nachgefragt
2017	TUM Mathematics "Open House Event" (Munich, Germany) Invited Speaker; lecture for the general public
2017	TUM Mathematics "Development Workshop" (Munich, Germany) Invited Panelist; topic: presenting at conferences
2017	TUM "Schülertag" (Munich, Germany) Invited Speaker / Workshop-Leader; mathematics for high-school students
2016	TU/Uni Vienna Doctoral School Workshop (Reichenau an der Rax, Austria) Invited Speaker; topic: postdoc opportunities for doctoral students
2015–now	Practical Science Blog - Founder/Writer practicalscienceblog.wordpress.com
2014	Oxford University Press - invited blog "Special events and the dynamical statistics of Twitter"

SUMMER SCHOOLS / SPECIAL WORKSHOPS (AS STUDENT/POSTDOC)

- 2013: Selected Participant IdeaLab for Early Career Researchers
 Institute for Computational and Experimental Research in Mathematics (ICERM, USA)
- 2007: Selected Participant AARMS Summer School, (Dalhousie University, Canada)
 Took two graduate-level courses
- 2007: Selected Participant NEEDS School School/Workshop (Bellaterra, Spain) Nonlinear Evolution Equations and Dynamical Systems
- 2006: Selected Participant Jyväskylä Summer School (University of Jyväskylä, Finland) Took two graduate-level courses
- 2005: Selected Participant AARMS Summer School, (Dalhousie University, Canada) Took two graduate-level courses

MEMBERSHIPS

- Complex Systems Society (CSS)
- Deutsche Mathematiker-Vereinigung (DMV)
 - Member: Fachgruppe Stochastik
- Deutscher Hochschulverband
- European Mathematical Society (EMS)
- Gesellschaft für Angewandte Mathematik und Mechanik (GAMM)
 - Activity group member: Dynamics and Control
 - Activity group member: Partial Differential Equations
 - Activity group member: Uncertainty Quantification
- Mathematics and Climate Research Network (MCRN)

- Society for Industrial and Applied Mathematics (SIAM)
 - SIAG member: Analysis of Partial Differential Equations
 - SIAG member: Dynamical Systems
 - SIAG member: Life Sciences
 - SIAG member: Nonlinear Waves and Coherent Structures
 - SIAG member: Uncertainty Quantification

LANGUAGE SKILLS

English – fluent, French – working knowledge, German – mother tongue

COMPUTER SKILLS

- Programming: Python, C++, Fortran77, Fortran90, C, Pascal
- Operating Systems: MS Windows, Linux, Sun Solaris
- Mark-Up Languages: LATEX, html
- Mathematical Software Packages: Numpy/Scipy/Fenics, MatLab/Octave, Mathematica, Maple
- Specialized Mathematical Software: AUTO, MatCont, ESATAN, MCLite, PLTMG, pde2path
- Other Software: Dreamweaver, OpenOffice, MS Office, Fireworks, kompozer

BOOKS:

B2 "PDE Dynamics: An Introduction"

C. Kuehn, 267 pages, SIAM, 2019

in the series: Mathematical Modeling and Computation

B1 "Multiple Time Scale Dynamics"

C. Kuehn, 814 pages, Springer, 2015

in the series: Applied Mathematical Sciences

JOURNAL PUBLICATIONS (REFEREED):

J120 "Adaptive Dynamical Networks"

R. Berner, T. Gross, C. Kuehn, J. Kurths and S. Yanchuk

Physics Reports, Vol. 1031, pp. 1-59, 2023

[119 "Self-adapting infectious dynamics on random networks"

K. Claußand C. Kuehn

Chaos: An Interdisciplinary Journal of Nonlinear Science, Vol. 33, No. 9, 093110, 2023

J118 "Center manifolds for rough partial differential equations"

C. Kuehn and A. Neamtu

Electronic Journal of Probability, Vol. 28, pp. 1-31, 2023

J117 "Phase oscillator networks with nonlocal higher-order interactions: twisted states, stability and bifurcations"

C. Bick, T. Böhle and C. Kuehn

SIAM Journal on Applied Dynamical Systems, Vol. 23, No. 3, pp. 1590-1638, 2023

J116 "Reduction methods in climate dynamics - a brief review"

F. Hummel, P. Ashwin and C. Kuehn

Physica D, Vol. 448, 133678, 2023

J115 "Combined effects of STDP and homeostatic structural plasticity on coherence resonance"

M. Yamakou and C. Kuehn

Physical Review E, Vol. 107, 044302, 2023

J114 "Continuum limits for adaptive network dynamics"

M. Gkogkas, C. Kuehn, and C. Xu

Communications in Mathematical Sciences, Vol. 21, No. 1, pp. 83-106, 2023

J113 "Stochastic Rotating Waves"

C. Kuehn, J. MacLaurin and G. Zucal

Stochastics and Dynamics, Vol. 22, No. 7, 2240029, 2022

J112 "Vlasov equations on digraph measures"

C. Kuehn and C. Xu

Journal of Differential Equations, Vol. 339, pp. 261-349, 2022

[111] "Community integration algorithms (CIAs) for dynamical systems on networks"

T. Böhle, M. Thalhammer and C. Kuehn

Journal of Computational Physics, Vol. 469, 111524, 2022

J110 "Multi-population phase oscillator networks with higher-order interactions"
 C. Bick, T. Böhle and C. Kuehn
 Nonlinear Differential Equations and Applications NoDEA, Vol. 29, No. 64, pp. 1-41, 2022

J109 "The influence of a transport process on the epidemic threshold"
C. Kuehn and J. Mölter
Journal of Mathematical Biology, Vol. 85, No. 62, pp. 1-39, 2022

J108 "Assessing the impact of parametric uncertainty on tipping points of the Atlantic meridional overturning circulation"
 K. Lux, P. Ashwin, R. Wood and C. Kuehn
 Environmental Research Letters, Vol. 17, 075002, 2022

J107 "Discretized fast-slow systems with canard points in two dimensions"
 M. Engel, C. Kuehn, M. Petrera and Y. Suris
 Journal of Nonlinear Science, Vol. 32, No. 19, pp. 1-41, 2022

J106 "Graphop mean-field limits and synchronization for the stochastic Kuramoto model"
 M. Gkogkas, B. Jüttner, C. Kuehn and E.A. Martens
 Chaos: An Interdisciplinary Journal of Nonlinear Science, Vol. 32, No. 1, 113120, 2022

"Multiscale analysis for traveling-pulse solutions to the stochastic FitzHugh-Nagumo equations"
 K. Eichinger, M. Gnann and C. Kuehn
 Annals of Applied Probability, Vol. 32, No. 5, p. 3229-3282, 2022

J104 "Single-spike solutions to the 1D shadow Gierer-Meinhardt problem"
 A. Iuorio and C. Kuehn
 Applied Mathematics Letters, Vol. 132, 108147, 2022

J103 "Controlling canard cycles"
 H. Jardon Kojakhmetov and C. Kuehn
 Journal of Dynamical and Control Systems, Vol. 28, pp. 517-544, 2022

J102 "A traveling wave bifurcation analysis of turbulent pipe flow"
 M. Engel, C. Kuehn and B. de Rijk
 Nonlinearity, Vol. 35, No. 11, pp. 5903-5937, 2022

J101 "Balancing quarantine and self-distancing measures in adaptive epidemic networks"
 L. Horstmeyer, C. Kuehn and S. Thurner
 Bulletin of Mathematical Biology, Vol. 84, No. 8, 79, 2022

"Estimating rate-induced tipping via asymptotic series and a Melnikov-like method"
 C. Kuehn and I. Longo
 Nonlinearity, Vol. 35, No. 5, pp. 2559-2587, 2022

J99 "Stability analysis of multiplayer games on adaptive simplicial complexes"
 D. Schlager, K. Clauß and C. Kuehn
 Chaos: An Interdisciplinary Journal of Nonlinear Science, Vol. 32, 053128, 2022

J98 "Random walks and Laplacians on hypergraphs: When do they match?" R. Mulas, **C. Kuehn**, T. Böhle and J. Jost Discrete Applied Mathematics, Vol. 317, pp. 26-41, 2022

- J97 "Slow manifolds for infinite-dimensional evolution equations"
 F. Hummel and C. Kuehn
 Commentarii Mathematici Helvetici, Vol. 97, No. 1, pp. 61-132, 2022
- J96 "Traveling wave dynamics for Allen-Cahn equations with strong irreversibility"
 G. Akagi, C. Kuehn and K.-I. Nakamura
 Transactions of the American Mathematical Society, Vol. 375, No. 5, pp. 3173-3238, 2022
- "Warning signs for non-Markovian bifurcations: color blindness and scaling laws"
 C. Kuehn, K. Lux and A. Neamtu
 Proceedings of the Royal Society A, Vol. 487, No. 2259, 20210740, 2022
- J94 "On the reliable and efficient numerical integration of the Kuramoto model and related dynamical systems on graphs"
 T. Böhle, C. Kuehn, and M. Thalhammer
 International Journal of Computer Mathematics, Vol. 99, No. 1, pp. 31-57, 2022
- J93 "Graphop mean-field limits for Kuramoto-type models"
 M.-A. Gkogkas and C. Kuehn
 SIAM Journal on Applied Dynamical Systems, Vol. 21, No. 1, pp. 248-283, 2022
- J92 "A general view on double limits in differential equations"
 C. Kuehn, N. Berglund, C. Bick, M. Engel, T. Hurth, A. Iuorio and C. Soresina Physica D, Vol. 431, 133105, 2022
- "Uncertainty quantification of bifurcations in random ordinary differential equations"
 C. Kuehn and K. Lux
 SIAM Journal on Applied Dynamical Systems, Vol. 20, No. 4, pp. 2295-2334, 2021
- J90 "Coupled hypergraph maps and chaotic cluster synchronization"
 T. Böhle, C. Kuehn, R. Mulas and J. Jost
 EPL (Europhysics Letters), Vol. 136, 40005, 2021
- J89 *"A survey on the blow-up method for fast-slow systems"*H. Jardon Kojakhmetov and **C. Kuehn**Contemporary Mathematics, AMS, Vol. 775, pp. 115-160, 2021
- J88 "A geometric analysis of the SIRS epidemiological model on a homogeneous network"
 H. Jardon Kojakhmetov, C. Kuehn, A. Pugliese and M. Sensi
 Journal of Mathematical Biology, Vol. 83, No. 37, 2021
- "Connecting a direct and a Galerkin approach to slow manifolds in infinite dimensions"
 M. Engel, F. Hummel and C. Kuehn
 Proceedings of the American Mathematical Society, Vol. 8, pp. 252-266, 2021
- J86 "Rough center manifolds"
 C. Kuehn and A Neamtu
 SIAM Journal on Mathematical Analysis, Vol. 53, No. 4, pp. 3912-3957, 2021
- J85 "Reduced models of cardiomyocytes excitability: comparing Karma and FitzHugh-Nagumo" M.E. Gonzalez Herrero, C. Kuehn and K. Tsaneva-Atanasova Bulletin of Mathematical Biology, Vol. 83, 88, 2021

J84 "A qualitative mathematical model of the immune response under the effect of stress"
 M.E. Gonzalez Herrero and C. Kuehn
 Chaos: An Interdisciplinary Journal of Nonlinear Science, Vol. 31, No. 6, 061104, 2021

J83 "Metastable speeds in the fractional Allen-Cahn equation"
 F. Achleitner, C. Kuehn, M. Melenk and A. Rieder
 Applied Mathematics and Computation, Vol. 408, 126329, 2021

J82 "Homogenization of fully-coupled chaotic fast-slow systems via intermediate stochastic regularization"
 M. Engel, M.-A. Gkogkas and C. Kuehn
 Journal of Statistical Physics, Vol. 183, No. 25, 2021

J81 "A random dynamical systems perspective on isochronicity for stochastic oscillations"
 M. Engel and C. Kuehn
 Communications in Mathematical Physics, Vol. 386, No. 3, pp. 1603–1641, 2021

J80 "On the influence of cross-diffusion in pattern formation"
M. Breden, C. Kuehn and C. Soresina
Journal of Computational Dynamics, Vol. 8, No. 2, pp. 213-240, 2021

J79 "Random attractors via pathwise mild solutions for stochastic parabolic evolution equations" **C. Kuehn**, A. Neamtu and S. Sonner Journal of Evolution Equations, Vol. 21, No. 2, pp. 2631-2663, 2021

J78 "A universal route to explosive phenomena"C. Kuehn and C. BickScience Advances, Vol. 7, No. 16, eabe3824, 2021

J77 "Numerical continuation for fractional PDEs: sharp teeth and bloated snakes"
 N. Ehstand, C. Kuehn and C. Soresina
 Communications in Nonlinear Science and Numerical Simulation, Vol. 98, 105762, 2021

J76 "A geometric analysis of the SIR, SIRS and SIRWS epidemiological models"
H. Jardon Kojakhmetov, C. Kuehn, A. Pugliese and M. Sensi
Nonlinear Analysis: Real World Applications, Vol. 58, 103220, 2021

J75 "Global martingale solutions for quasilinear SPDEs via the boundedness-by-entropy method"
 G. Dhariwal, F. Huber, A. Jüngel, C. Kuehn and A. Neamtu
 Annals de l'Institut Henri Poincaré (B) Probabilités et Statistiques, Vol. 57, No. 1, pp. 577–602, 2021

J74 "Coupled dynamics on hypergraphs: master stability of steady states and synchronization" R. Mulas, **C. Kuehn** and J. Jost Physical Review E, Vol. 101, No. 6, 062313, 2020

J73 "Random attractors for stochastic partly dissipative systems"
 C. Kuehn, A. Neamtu and A. Pein
 Nonlinear Differential Equations and Applications NoDEA, Vol. 27, 35, 2020

J72 "On fast-slow consensus networks with a dynamic weight"
H. Jardon Kojakhmetov and C. Kuehn
Journal of Nonlinear Science, Vol. 30, pp. 2737-2786, 2020

J71 "Network dynamics on graphops"

C. Kuehn

New Journal of Physics, Vol. 22, 053030, 2020

J70 "Pathwise mild solutions for quasilinear stochastic partial differential equations"

C. Kuehn and A. Neamtu

Journal of Differential Equations, Vol. 269, No. 3, pp. 2185-2227, 2020

J69 "Computing invariant sets of random differential equations using polynomial chaos"

M. Breden and C. Kuehn

SIAM Journal on Applied Dynamical Systems, Vol. 19, No. 1, pp. 577-618, 2020

J68 "Combined error estimates for local fluctuations of SPDEs"

C. Kuehn and P. Kürschner

Advances in Computational Mathematics, Vol. 46, No. 11, 2020

J67 "Numerical continuation for a fast-reaction system and its cross-diffusion limit"

C. Kuehn and C. Soresina

SN Partial Differential Equations and Applications, Vol. 1, No. 7, 2020

J66 "An adaptive voter model on simplicial complexes"

L. Horstmeyer and C. Kuehn

Physical Review E, Vol. 101, No.2, 022305, 2020

J65 "Travelling waves in monostable and bistable stochastic partial differential equations"

C. Kuehn

Jahresbericht der Deutschen Mathematiker-Vereinigung, Vol. 122, No. 2, pp. 73-107, 2020

J64 "Sample paths estimates for stochastic fast-slow systems driven by fractional Brownian motion"

K. Eichinger, C. Kuehn and A. Neamtu

Journal of Statistical Physics, Vol. 179, No. 5, pp. 1222-1266, 2020

J63 "Geometry and numerical continuation of multiscale orbits in a nonconvex variational problem"

A. Iuorio, C. Kuehn and P. Szmolyan

Discrete and Continuous Dynamical Systems S, Vol. 13, No. 2, 2020

J62 "Random switching near bifurcations"

C. Kuehn and T. Hurth

Stochastics and Dynamics, Vol. 20, No. 2, 2050008, 2020

J61 "Mathematical analysis of nonlocal PDEs for network generation"

T. Böhle and **C. Kuehn**

Mathematical Modelling of Natural Phenomena, Vol. 14, No. 5, 506, 2019

J60 "Discretized fast-slow systems near pitchfork singularities"

L. Arcidiacono, M. Engel and C. Kuehn

Journal of Difference Equations and Applications, Vol. 25, No. 7, pp. 1024-1051, 2019

J59 "A gradient flow formulation for the stochastic Amari model"

C. Kuehn and J. Tölle

Journal of Mathematical Biology, Vol. 79, No. 4, pp. 1227-1252, 2019

J58 "Power network dynamics on graphons"

C. Kuehn and S. Throm

SIAM Journal on Applied Mathematics, Vol. 79, No. 4, pp. 1271-1292, 2019

J57 "Smoluchowski's coagulation equation with forcing"

C. Kuehn and S. Throm

Nonlinear Differential Equations and Applications (NoDEA), Vol. 26, No. 3, 17, 2019

J56 "Discretized fast-slow systems near transcritical singularities"

M. Engel and C. Kuehn

Nonlinearity, Vol. 32, No. 7, 2365, 2019

J55 "Multiscale Dynamics of an Adaptive Catalytic Network"

C. Kuehn

Mathematical Modelling of Natural Phenomena, Vol. 14, No. 4, 402, 2019

J54 "Rigorous Validation of Stochastic Transition Paths"

M. Breden and C. Kuehn

Journal de Mathématiques Pures et Appliquées, Vol. 131, pp. 88-129, 2019

J53 "Duck traps: two-dimensional critical manifolds in planar systems"

C. Kuehn and C. Münch

Dynamical Systems: An International Journal, Vol. 34, No. 4, pp. 584-612, 2019

J52 "Pattern formation in the doubly-nonlocal Fisher-KPP equation"

C. Kuehn and P. Tkachov

Discrete and Continuous Dynamical Systems A, Vol. 39, No. 4, pp. 2077-2100, 2019

J51 "Towards sample path estimates for fast-slow SPDEs"

M. Gnann, C. Kuehn and A. Pein

European Journal of Applied Mathematics, Vol. 30, No. 5, pp. 1004-1024, 2019

J50 "Scaling laws and warning signs for bifurcations of SPDEs"

C. Kuehn and F. Romano

European Journal of Applied Mathematics, Vol. 30, No. 5, pp. 853-868, 2019

J49 "Network topology near criticality in adaptive epidemics"

L. Horstmeyer, C. Kuehn and S. Thurner

Physical Review E, Phys. Rev. E, Vol. 98, 042313, 2018

J48 "A note on kernel methods for multiscale systems with critical transitions"

B. Hamzi, C. Kuehn and S. Mohammed

Mathematical Methods in the Applied Sciences, Vol. 42, No. 3, pp. 907-917, 2019

J47 "Validity of amplitude equations for nonlocal nonlinearities"

C. Kuehn and S. Throm

Journal of Mathematical Physics, Vol. 59, 071510, 2018

J46 "Analysis and predictability for tipping points with leading-order nonlinear terms"

F. Romano and C. Kuehn

International Journal of Bifurcation and Chaos, Vol. 28, No. 8, 1850103, 2018

- J45 "Early warning signs for bifurcations with bounded noise"
 C. Kuehn, G. Malavolta and M. Rasmussen
 Journal of Mathematical Analysis and Applications, Vol. 464, pp. 58–77, 2018
- "Tracking particles in flows near invariant manifolds via balance functions"
 C. Kuehn, F. Romano and H.C. Kuhlmann
 Nonlinear Dynamics, Vol. 92, No. 3, pp. 983–1000, 2018
- J43 "Stochastic mixed-mode oscillations in a three-species predator-prey model"
 S. Sadhu and C. Kuehn
 Chaos: An Interdisciplinary Journal of Nonlinear Science, Vol. 28, No. 3, 033606, 2018
- J42 "Quenched noise and nonlinear oscillations in bistable multiscale systems"
 C. Kuehn
 EPL (Europhysics Letters), Vol. 120, 10001, 2017
- "Generalized play hysteresis operators as limits of fast-slow systems"
 C. Kuehn and C. Münch
 SIAM Journal on Applied Dynamical Systems, Vol. 16, No. 3, pp. 1650-1685, 2017
- J40 "Model Spaces of Regularity Structures for Space-Fractional SPDEs"
 N. Berglund and C. Kuehn
 Journal of Statistical Physics, Vol. 168, No. 2, pp. 331-368, 2017
- "Uncertainty transformation via Hopf bifurcation in fast-slow systems"
 C. Kuehn
 Proceedings of the Royal Society A, Vol. 473, 20160346, 2017
- J38 "Continuation of probability density functions using a generalized Lyapunov approach"
 S. Baars, J.P. Viebahn, T.E. Mulder, C. Kuehn, F.W. Wubs and H.A. Dijkstra
 Journal of Computational Physics, Vol. 336, No. 1, pp. 627–643, 2017
- J37 "A meeting point of entropy and bifurcations in cross-diffusion herding"
 A. Jüngel, C. Kuehn and L. Trussardi
 European Journal of Applied Mathematics, Vol. 28, No. 2, pp. 317-356, 2017
- J36 "A dynamical systems' approach for the contact-line singularity in thin-film flows"
 F.B. Belgacem, M. Gnann and C. Kuehn
 Nonlinear Analysis A: Theory, Methods & Applications, Vol. 144, pp.204-235, 2016
- J35 "A numerical framework to understand transitions in high-dimensional stochastic dynamical systems"
 H.A. Dijkstra, A. Tantet, J. Viebahn, E. Mulder, M. Hebbink, D. Castellane,
 H. van der Pol, J. Frank, S. Baars, F. Wubs, M. Chekroun, C. Kuehn
 Dynamics and Statistics of the Climate System, Vol. 1, No. 1, dzw003, 2016
- J34 "Heterogeneous population dynamics and scaling laws near epidemic outbreaks"
 A. Widder and C. Kuehn
 Mathematical Biosciences & Engineering, Vol. 13, No. 5, pp.1093-1118, 2016
- J33 "FitzHugh-Nagumo SPDEs in three space dimensions driven by space-time white noise"
 N. Berglund and C. Kuehn
 Electronic Journal of Probability, Vol. 21, No. 18, pp. 1-48, 2016

J32 "A remark on geometric desingularization of a non-hyperbolic point using hyperbolic space"

C. Kuehn

Journal of Physics: Conference Series, Vol. 727, 012008, 2016

J31 "Numerical continuation and SPDE Stability for the 2D cubic-quintic Allen-Cahn equation"

C. Kuehn

SIAM/ASA Journal on Uncertainty Quantification, Vol. 3, No. 1, pp. 762-789, 2015

J30 "Predictability of Critical Transitions"

X. Zhang, S. Hallerberg and C. Kuehn

Physical Review E, Vol. 92, 052905, 2015

J29 "Traveling waves for bistable evolution equations with nonlocal-diffusion"

F. Achleitner and C. Kuehn

Advances in Differential Equations, Vol. 20, No. 9-10, pp. 887-936, 2015

J28 "Efficient gluing of numerical continuation and a multiple solution method for elliptic PDEs"

C. Kuehn

Applied Mathematics and Computation, Vol. 266, pp. 656-674, 2015

J27 "Multiscale geometry of the Olsen model and non-classical relaxation oscillations"

C. Kuehn and P. Szmolyan

Journal of Nonlinear Science, Vol. 25, No. 3, pp. 583-629, 2015

J26 "Early warning signs for saddle-escape transitions in complex networks"

C. Kuehn, G. Zschaler and T. Gross

Scientific Reports, Vol. 5, 13190, 2015

J25 "From random Poincaré maps to stochastic mixed-mode-oscillation patterns"

N. Berglund, B. Gentz and C. Kuehn

Journal of Dynamics and Differential Equations, Vol. 27, No. 1, pp. 83-136, 2015

J24 "Critical slowing down governs the transition to neuron spiking"

C. Meisel, A. Klaus, C. Kuehn and D. Plenz

PLoS Computational Biology, Vol. 11, No. 2, e1004097, 2015

J23 "Analysis and numerics of travelling waves for asymmetric fractional reaction-diffusion equations"

F. Achleitner and C. Kuehn

Communications in Applied and Industrial Mathematics, Vol. 6, No. 2, e-532, pp. 1-25, 2015

J22 "On bounded positive stationary solutions for a nonlocal Fisher-KPP Equation"

F. Achleitner and C. Kuehn

Nonlinear Analysis A: Theory, Methods & Applications, Vol. 112, pp. 15-29, 2015

J21 "Warning signs for pattern-formation in SPDEs"

K. Gowda⁺ and **C. Kuehn**⁺ [⁺equal contribution]

Communications in Nonlinear Science & Numerical Simulation, Vol. 22, pp. 55-69, 2015

J20 "Normal hyperbolicity and unbounded critical manifolds"

C. Kuehn

Nonlinearity, Vol. 27, No. 6, pp. 1351-1366, 2014

J19 "Large deviations for nonlocal stochastic neural fields"

C. Kuehn and M. Riedler

Journal of Mathematical Neuroscience, Vol. 4, No. 1, pp. 1-33, 2014

J18 "Critical transitions in social network activity"

C. Kuehn⁺, E. Martens⁺ and D. Romero [+equal contribution] Journal of Complex Networks, Vol. 2, No. 2, pp. 141-152, 2014

J17 "A mathematical framework for critical transitions: normal forms, variance and applications"

C. Kuehn

Journal of Nonlinear Science, Vol. 23, No. 3, pp. 457-510, 2013

J16 "Nonlocal generalized models of predator-prey systems"

C. Kuehn and T. Gross

Discrete and Continuous Dynamical Systems B, Vol. 18, No. 3, pp. 693-720, 2013

J15 "Warning signs for wave speed transitions of noisy Fisher-KPP invasion fronts"

C. Kuehn

Theoretical Ecology, Vol. 6, No. 3, pp. 295-308, 2013

J14 "Dynamical analysis of evolution equations in generalized models"

C. Kuehn, S. Siegmund and T. Gross

IMA Journal of Applied Mathematics, Vol. 78, No. 5, pp. 1051-1077, 2013

J13 "Deterministic continuation of stochastic metastable equilibria via Lyapunov equations and ellipsoids"

C. Kuehn

SIAM Journal on Scientific Computing, 34(3), pp. A1635-A1658, 2012

J12 "Time-scale and noise optimality in self-organized critical adaptive networks"

C. Kuehn

Physical Review E, Vol. 85, No. 2, 026103, 2012

J11 "Mixed mode oscillations with multiple time scales"

M. Desroches, J. Guckenheimer, B. Krauskopf, **C. Kuehn**, H. Osinga and M. Wechselberger SIAM Review, Vol. 54, No. 2, pp. 211-288, 2012

J10 "Hunting French ducks in a noisy environment"

N. Berglund, B. Gentz and C. Kuehn

Journal of Differential Equations, Vol. 252, No. 9, pp. 4786-4841, 2012

J9 "Scaling effects and spatio-temporal multilevel dynamics in epileptic seizures"

C. Meisel⁺ and **C. Kuehn**⁺ [⁺equal contribution]

PLoS ONE, Vol. 7, No. 2, e30371, 2012

J8 "On decomposing mixed-mode oscillations and their return maps"

C. Kuehn

Chaos: An Interdisciplinary Journal of Nonlinear Science, Vol. 21, No. 3, 033107, 2011

J7 "A mathematical framework for critical transitions: bifurcations, fast-slow systems and stochastic dynamics"

C. Kuehn

Physica D: Nonlinear Phenomena, Vol. 240, No. 12, 1020-1035, 2011

I6 "Connecting fast-slow systems and Conley index theory via transversality"

C. Kuehn

Electronic Journal of Differential Equations, Vol. 2010, No. 106, pp. 1-20, 2010

J5 "From first Lyapunov coefficients to maximal canards"

C. Kuehn

International Journal of Bifurcation and Chaos, Vol. 20, No. 5, pp. 1467-1475, 2010

J4 "Homoclinic orbits of the FitzHugh-Nagumo equation: bifurcations in the full system"
 J. Guckenheimer and C. Kuehn
 SIAM Journal on Applied Dynamical Systems, Vol. 9, No. 1, pp. 138-153, 2010

- [3] "Computing slow manifolds of saddle-type"
 - J. Guckenheimer and C. Kuehn

SIAM Journal on Applied Dynamical Systems, Vol. 4, No. 3, pp. 854-879, 2009

- J2 "Homoclinic orbits of the FitzHugh-Nagumo equation: the singular limit"
 - J. Guckenheimer and C. Kuehn

Discrete and Continuous Dynamical Systems S, Vol. 2, No. 4, pp. 851-872, 2009

J1 "Scaling of saddle-node bifurcations: degeneracies and rapid quantitative changes",C. Kuehn

Journal of Physics A: Mathematical and Theoretical, Vol. 42, No. 4, 045101, 2009

BOOK CHAPTERS:

C2 "Dynamics of stochastic reaction-diffusion equations"

C. Kuehn and A. Neamtu

in: Finite and Infinite Dimensional Stochastic Equations with Applications to Physics (editors: H. Lisei & W. Grecksch), Wiley, pp. 1-55, 2020

C1 "Moment closure - A brief review"

C. Kuehn

in: Self-Organizing Complex Systems, eds: E. Schöll, S. Klapp and P. Hövel Springer, pp. 253-271, 2015

PREPRINTS:

For a complete list of current preprints, please consider my website: http://www.multiscale.systems/publications.html

LECTURE NOTES:

L4 "Stochastic Dynamics"

C. Kuehn

lecture notes, 70 pp., under development

L3 "Introduction to Adaptive Network Dynamics"

C. Kuehn

lecture notes, 45 pp., under development

L2 "Dynamical Systems I: ODE Basics & Nonlinear Dynamics"

C. Kuehn

lecture notes, 75 pp., AMS Open Math Notes

L1 "Dynamical Systems II: A Concise Graduate Course"

C. Kuehn

lecture notes, 125 pp., AMS Open Math Notes

OTHER WRITINGS:

E2 "Nonlinear Uncertainty Quantification for Random ODEs"
 M. Breden, C. Kuehn and K. Lux
 SIAM DSWeb Expository Article (invited), August 2022

V2 Book Review of "Hidden Dynamics" (by M.R. Jeffrey)

C. Kuehn

SIAM Review, Vol. 61, No. 3, within pp. 625-640, 2019

V1 Book Review of "Network Science" (by A.-L. Barabasi)

C. Kuehn

SIAM Activity Group, DSWeb Magazine, April 2017

T4 "Multiscale Dynamical Systems: Analysis and Numerics"

C. Kuehn

Habilitation Thesis, Vienna University of Technology, 2016

E1 "The curse of instability"

C. Kuehn

Complexity, (section: 'Simply Complex'), Vol. 20, No. 6, pp. 9-14, 2015

T3 "Multiple Time Scale Dynamics with Two Fast Variables and One Slow Variable" C. Kuehn

Ph.D. Thesis, Cornell University, 2010

T2 "Introduction to Potential Theory via Applications"

C. Kuehn

Part III essay, University of Cambridge, 2006

T1 "Stability Analysis of Nonlinear Subdivision Schemes"

C. Kuehn

B.Sc. Thesis, Jacobs University Bremen, 2005