

Curriculum Vitæ – Laura Kanzler

February 7, 2024

Personal data

Date and place of birth: April 23rd, 1993, Vienna (Austria)

Citizenship: Austrian

Work address: CEREMADE

Université Paris-Dauphine

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Current position: COFUND MathInGreaterParis-fellow (<https://www.mathingp.fr>), at CEREMADE, Université Paris-Dauphine

Research interests

Analysis of partial differential equations, Kinetic theory (longtime behaviour, fractional hydrodynamical limits, application to life-sciences), Self-organization phenomena, Entropy methods, Hypocoercivity theory, Optimization (nonsmooth optimization, numerical algorithms, dynamical approaches)

Professional career

- **Since November 2022:** Cofund MathInGreaterParis - fellow
Project - title: "Kinetic Modelling of Emergence Phenomena in Collective dynamics"
Host institution: CEREMADE, Université Paris-Dauphine
Host: Emeric Bouin
- **May 2021 - November 2022:** Postdoctoral Researcher at Laboratoire Jacques-Louis Lions, Sorbonne University
Advisors: Benoit Perthame and Benoit Sarels

Education

- **June 2017 - May 2021:** PhD. Student at the University of Vienna (Doctoral degree (Dr. rer. nat.) obtained with distinction on 22nd of April, 2021)
Doctoral thesis: "Kinetic Modelling of Colonies of Myxobacteria"
Supervisor: Christian Schmeiser
Research supported by the FWF 'SFB 65 Taming Complexity in Partial Differential Systems'
 - **October 2014 - February 2017:** MSc. in Mathematics at the University of Vienna (Master degree obtained with distinction on 13th of February, 2017)
Thesis: "Derivation, Analysis and Simulations of a Model for Tethered Leukocytes"
Supervisor: Christian Schmeiser
 - **October 2011 - October 2014:** BSc. in Mathematics at the University of Vienna (Bachelor degree obtained with distinction on 17th of October, 2014)
 - **June 2011:** Matura (High School degree) obtained with distinction at the BernoulliGymnasium, 1220 Vienna
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Publications & Preprints

- *Published articles:*
 1. L. Kanzler, B. Perthame, B. Sarels, *Structured Model Conserving Biomass for the Size-spectrum Evolution in Aquatic Ecosystems*, J. Math. Biol., (2024) 88:26, doi: [10.1007/s00285-023-02043-y](https://doi.org/10.1007/s00285-023-02043-y), Arxiv: <https://arxiv.org/abs/2212.06465>, HAL: <https://hal.archives-ouvertes.fr/hal-03895919>
 2. Laura Kanzler, Christian Schmeiser, Veronica Tora, *Two kinetic models for non-instantaneous binary alignment collisions*, *Kinetic & Related Models*, 2023, doi: [10.3934/krm.2023038](https://doi.org/10.3934/krm.2023038), Arxiv: <https://arxiv.org/abs/2203.15711>
 3. Michael Fischer, Laura Kanzler, Christian Schmeiser, *One-dimensional short-range nearest-neighbor interaction and its nonlinear diffusion limit*, *SIAM J. Appl. Math.* 84(1) (2024), pp. 1-18, doi: [10.1137/23M155520X](https://doi.org/10.1137/23M155520X), Arxiv: <https://arxiv.org/abs/2302.12099>
 4. Martin Burger, Laura Kanzler, Marie-Therese Wolfram, *Boltzmann mean-field game model for knowledge growth: limits to learning and general utilities*, to appear in *Comm. Math. Sci.*, Arxiv: <https://arxiv.org/abs/2209.04677>
 5. Amic Frouvelle, Laura Kanzler, Christian Schmeiser, *Reversal Collision Dynamics*, *Discrete and Continuous Dynamical Systems - A*, 2023, 43(10): 3582-3603. doi: [10.3934/krm.2023038](https://doi.org/10.3934/krm.2023038), Arxiv: <https://arxiv.org/abs/2209.11413>
 6. Laura Kanzler, Christian Schmeiser, *Kinetic model for myxobacteria with directional diffusion*, *Comm. Math. Sci.*, Vol. 21, No. 1 (2023), pp. 107-126. doi: [10.4310/CMS.2023.v21.n1.a5](https://doi.org/10.4310/CMS.2023.v21.n1.a5), Arxiv: <https://arxiv.org/abs/2109.13184>

7. Sabine Hittmeir, Laura Kanzler, Angelika Manhart, Christian Schmeiser, *Kinetic modelling of colonies of myxobacteria*, *Kinetic & Related Models*, **14** (2021), pp. 1-24, doi: [10.3934/krm.2020046](https://doi.org/10.3934/krm.2020046), Arxiv: <https://arxiv.org/abs/2001.02711>
 8. Radu Ioan Boţ, Laura Kanzler, *A forward-backward dynamical approach for nonsmooth problems with block structure coupled by a smooth function*, *Applied Mathematics and Computation* 394(1) (2021), Article number: 125822 , <https://www.sciencedirect.com/science/article/abs/pii/S009630032030775X?via%3Dihub>, Arxiv: <https://arxiv.org/abs/2001.10051>
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Honours and awards

- *COFUND MathInGreaterParis fellowship*, <https://www.mathingp.fr> : 11/2022 - 10/2024 hosted at CEREMADE, Université Paris-Dauphine
 - *Performance scholarships from the University of Vienna* for the academic years 2012/2013, 2013/2014 and 2014/2015
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Research Stays & Visits

- **Jan. 23-27, 2023:** Invited research stay at the Chair of Applied Mathematics, Friedrich-Alexander-Universität Erlangen-Nürnberg by Martin Burger
 - **May 4-6, 2022:** Invited visit at Warwick Mathematics Institute, University of Warwick (UK) by Marie-Therese Wolfram
 - **Dec. 2-5, 2019:** Research stay at
 - *CEREMADE, Université Paris-Dauphine (Paris, France)* for a collaboration with Amic Frouvelle
 - *Laboratoire Jacques-Louis Lions, Sorbonne University (Paris, France)* by Marie Doumic and Diane Peurichard
 - **Nov. 5 - Dec. 1, 2018 and Jan. 21-25, 2019:** Research stay at *Laboratoire Jacques-Louis Lions, Sorbonne University (Paris, France)*
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Organization activity

- **September 24th-29th, 2023:** Workshop, “Trends and reflections on PDEs in applied mathematics” in celebration of Christian Schmeiser’s contributions (Weissensee, Austria), (organizer)

- **April 4th-8th, 2022:** Hausdorff School: “Diffusive Systems Part II” (Bonn, Germany), (organizer)
 - **June 1st, 2021:** VSM -Workshop “A PhD in mathematics - career possibilities & gender aspects” (online), (organizer)
 - **September 1st-2nd, 2020:** Workshop “Potential theory and hypocoercivity approaches for kinetic equations” (online), (organizer)
 - **April 20th-22nd, 2020:** Workshop “Mathematical Models in Biology PDE & Stochastic Approaches” (Vienna, Austria), (organizer)
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Invited talks and seminars

- **September 2024:** Workshop on Kinetic Theory at the International Centre for Mathematical Sciences (ICMS) in Edinburgh (invited talk)
- **July 2024:** EWM-EMS summer school ”Kinetic Theory Arising from Mathematical Biology” at Institut Mittag-Leffler (invited talk)
- **January 2024:** Workshop on ”Kinetic Equations” at the Università di Parma, Cassini Program, funded by Institut Francais and Ypatia-Cnrs/INdAM (invited talk)
- **October 23 2023:** Invited seminar-talk at the séminaire d’Analyse Appliquée d’Amiens (LAMFA, Amiens)
- **October 2021:** Journée ”Équations d’évolution” (IHES, Université Paris-Saclay), (invited talk)
- **September 2023:** ”Modelling Diffusive Systems” (MoDiS) at the International Centre for Mathematical Sciences (ICMS) in Edinburgh (invited talk)
- **August 2023:** ICIAM 2023 (mini-symposium talk)
- **June 2023:** ”Mathematical Biology: Applications and Analysis” at TU Dresden (invited talk)
- **March 31 2022:** Seminar-talk at the PDE seminar at the University of Houston
- **March 14, 2022:** Seminar-talk at CEREMADE, Université Paris Dauphine
- **February 2023:** MAFRAN DAYS 2023 at the King’s College in Cambridge (invited talk)
- **December 2022:** LPSM Paris (seminar-talk)
- **October 2022:** ”Modeling, Analysis and Simulations Seminar at the MAP5 laboratory”, Université Paris Cité (seminar-talk)
- **September 2022:** ECMTB 2022 , Heidelberg (mini-symposium talk)

- **October 2022:** "Modeling, Analysis and Simulations seminar" at the MAP5 laboratory, Université Paris Cité (seminar-talk)
- **September 2022:** "VIII Conferencia de Matemáticos Ecuatorianos en París (ConMatE-P) - 2022, at Institut Henri Poincaré, (invited talk)
- **May 2022:** 'Séminaire d'Analyse et EDP de l'équipe d'EDP', at Université d'Évry Val d'Essonne (seminar-talk)
- **May 2022:** 'PDE and applications' seminar, at the University of Warwick (seminar-talk)
- **February 2022:** 'Math, Biology and Images (MBI)'- seminar in Université Sorbonne Paris Nord (USPN) (seminar-talk)
- **January 2022:** Workshop 'Tissue growth and movement' (within the biomath-trimester at Institut Henri Poincaré, Paris, France), (invited talk)
- **November 2021:** FORMAL webinar (online), (seminar-talk)
- **October 2021:** Journées 2021 du projet EFI (Université Paris-Dauphine), (invited talk)
- **September 2021:** Variational Methods & Evolution Equations (Dipartimento di matematica e applicazioni "Renato Caccioppoli", online), (invited talk)
- **July 2021:** Summer School "Multi-scale modelling for pattern formation in biological systems", Minisymposium "Collective dynamics" (Institute Mittag-Leffler, online), (invited talk)
- **June 2021:** SMB 2021 Annual Meeting, Minisymposium 'Exploring the processes of bacteria self-organization using mathematical modelling and experimental studies' (online), (mini-symposium talk)
- **March 2020:** VSM Student Retreat (Yspertal, Austria), (invited talk)
- **February 2020:** Workshop "Applied Mathematics with Emphasis on Optimization", (Mauerbach, Austria), (invited talk)
- **September 2019:** "Dynamics Equations and Applications"-conference (AGH, UST, Krakow, Poland) (mini-symposium talk)
- **Januray 2019:** invited talk at Open MAMBA Seminar (INRIA, Paris)

Referee activity

- Kinetic & Related Models
 - Acta Applicandae Mathematicae
 - Mathematical Biosciences
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Teaching Activities

- **October 2014 - June 2016:** Exercise-class "Introduction to Computer Infrastructure" (Faculty of Mathematics, University of Vienna)
 - **October 2018 - January 2018:** Problem session to "Linear Algebra for Physicists" (Faculty of Physics, University of Vienna)
 - **March 2019 - June 2019:** Problem session to "Analysis for Physicists II" (Faculty of Physics, University of Vienna)
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Other responsibilities

- **May 2016 - October 2016:** Part-time employment at CAE Simulation & Solutions Maschinenbau Ingenieurdienstleistungen GmbH (<https://cae-sim-sol.com/en/>)
Employment within the cooperation research project with the University of Vienna "Sport-BH-Optimierung durch Finite Elemente Simulation der Interaktion mit weiblichem Brustgewebe (FEM-Sport-BH)"
 - **January 2018 - January 2019:** Student spokes person in the Doctoral Program Dissipation and Dispersion in Nonlinear PDEs (<https://npde.tuwien.ac.at/>)
 - **September 2018 - September 2019:** Student Steering Committee member of the Vienna Doctoral School (now Vienna School of Mathematics)
 - **September 2018 - May 2021:** Student spokes person of the Vienna School of Mathematics (<https://www.vsmath.at/>)
 - **October 2018:** Habilitation of Jan Haskovec (Student member of the Habilitation-Committee)
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Language skills

- **German:** Mother tongue.
 - **English:** Fluent in speaking, excellent writing and reading skills.
 - **French:** Good speaking and writing skills
 - **Spanish:** Scholastic knowledge.
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