

Curriculum Vitae: Pascal Heid

Contact details

E-mail pascal.heid@maths.ox.ac.uk
Mobile number +447307058336

Professional experience

- 09/2020 – today **Swiss National Science Foundation (SNSF) Early Postdoc.Mobility fellow**, *University of Oxford*,
Advisor: Prof. Dr. Endre Süli.
- 08/2017 – 08/2020 **Research and teaching at the Mathematics Institute**, *University of Bern*,
Advisor: Prof. Dr. Thomas Wihler,
Tutored courses:
- Autumn semester 2019: Numerical mathematics
- Spring semester 2019: Complex analysis
- Autumn semester 2018: Partial differential equations
- Spring semester 2018: Mathematics II for natural sciences
- Autumn semester 2017: Mathematics I for natural sciences.
- 08/2015 – 07/2017 **Teacher for mathematics**, *Upper Secondary School Baden*.

Education

- 02/2017 – 03/2020 **PhD in Mathematics**, *University of Bern*, GPA: 6/6 (summa cum laude),
Thesis title: Adaptive iterative linearized Galerkin methods.
Supervisor: Prof. Dr. Thomas Wihler
- 09/2014 – 02/2017 **Teaching Diploma in Mathematics**, *ETH Zürich*.
- 09/2013 – 09/2014 **Master in Mathematics**, *ETH Zürich*, GPA: 5.72/6,
Master thesis: Geometric Rigidity of $\times m$ Invariant Measures.
Supervisor: Prof. Dr. Manfred Einsiedler
- 09/2009 – 04/2014 **Bachelor in Mathematics**, *ETH Zürich*, GPA: 5.01/6,
Bachelor thesis: Projective Topologies & Inductive Topologies.
Supervisor: Prof. Dr. Manfred Einsiedler

Further experience

- 02/2019 – 01/2020 **PhD student representative in the Faculty of Natural Sciences**, *University of Bern*.

Membership in scientific societies

2017-2020 **CUSO**, *Swiss Doctoral Program in Mathematics*.

Publications and preprints

- Accepted: 02/2021 **A note on energy contraction and optimal convergence of adaptive iterative linearized finite element methods**,
Pascal Heid, Dirk Praetorius, and Thomas P. Wihler,
Computational Methods in Applied Mathematics **21** (2021),
<https://doi.org/10.1515/cmam-2021-0025>.
- Accepted: 02/2021 **Gradient flow finite element discretizations with energy-based adaptivity for the Gross-Pitaevskii equation**,
Pascal Heid, Benjamin Stamm, and Thomas P. Wihler,
Journal of Computational Physics **436** (2021),
<https://doi.org/10.1016/j.jcp.2021.110165>.

- Accepted: 01/2021 **Adaptive local minimax Galerkin methods for variational problems**,
Pascal Heid and Thomas P. Wihler,
 SIAM Journal of Scientific Computing **43** (2021),
<https://doi.org/10.1137/20M1319863>.
- Accepted: 04/2020 **On the convergence of adaptive iterative linearized Galerkin methods**,
Pascal Heid and Thomas P. Wihler,
 Calcolo **57** (2020),
<https://doi.org/10.1007/s10092-020-00368-4>.
- Accepted: 02/2020 **Adaptive iterative linearization Galerkin methods for nonlinear problems**,
Pascal Heid and Thomas P. Wihler,
 Mathematics of Computation **89** (2020), 2707-2734,
<https://doi.org/10.1090/mcom/3545>.
- Submitted: 09/2021 **A link between the steepest descent method and fixed-point iterations**,
Pascal Heid,
<https://arxiv.org/abs/2109.09108>.
- Submitted: 09/2021 **Adaptive iterative linearised finite element methods for implicitly constituted incompressible fluid flow problems and its application to Bingham fluids**,
Pascal Heid and Endre Süli,
<https://arxiv.org/abs/2109.05991>.
- Submitted: 01/2021 **A modified Kačanov iteration scheme with application to quasilinear diffusion models**,
Pascal Heid and Thomas P. Wihler,
<https://arxiv.org/abs/2101.10137>.
- Submitted: 01/2021 **On the convergence rate of the Kačanov scheme for shear-thinning fluids**,
Pascal Heid and Endre Süli,
<https://arxiv.org/abs/2101.01398>.
- Submitted: 10/2020 **Gradient flow finite element discretisations with energy-based adaptivity for excited states of Schrödingers equation**,
Pascal Heid,
<https://arxiv.org/abs/2010.10383>.

Grants and fellowships

- 09/2020 – 02/2022 **Swiss National Science Foundation (SNSF)**,
Early Postdoc.Mobility fellowship, funding for 18 months of salary (CHF 75'750).

Research talks

- 05/2021 **Mathematical Colloquium**, *University of Bern*.
 02/2021 **Numerical analysis group internal seminar**, *University of Oxford*.
 09/2019 **DMV-Jahrestagung**, *Karlsruhe Institute of Technology*.
 09/2019 **Reliable Methods of Mathematical Modeling**, *TU Wien*.

Reviewer for international journals

- Since 2020 **Applied Mathematics and Computation**, *Elsevier*.
 Since 2020 **Computer Methods in Applied Mechanics and Engineering**, *Elsevier*.

Computer skills

Matlab	Very good
L ^A T _E X	Good
Mathematica	Intermediate
Python	Basic

C++ Basic

Language skills

German Native speaker
English Very good command
French Intermediate