

# Adrian Montgomery Ruf

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## Education/Employment

- since 2016 **PhD Mathematics**, *University of Oslo*, Norway.  
Marie Skłodowska–Curie research position in the ModCompShock network  
Supervisor: Prof. Nils Henrik Risebro
- 2016 **MSc Mathematics**, *TU Berlin*, Germany.  
Thesis: *A class of nonlinear evolution equations of second order*  
Supervisor: Prof. Etienne Emmrich
- 2013 **BSc Mathematik**, *TU Berlin*, Germany.  
Thesis: *Operations for nonnegative forms with an application to contents*  
Supervisor: Prof. Karl-Heinz Förster

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## List of Publications

### Journal articles

- [1] A. M. Ruf. Convergence of a full discretization for a second-order nonlinear elastodynamic equation in isotropic and anisotropic Orlicz spaces. *Zeitschrift für angewandte Mathematik und Physik*, 68(5):118, Sept. 2017. DOI: 10.1007/s00033-017-0863-z.
- [2] J. Ridder and A. M. Ruf. A convergent finite difference scheme for the Ostrovsky–Hunter equation with Dirichlet boundary conditions. *BIT Numerical Mathematics*, Mar. 2019. DOI: 10.1007/s10543-019-00746-7.
- [3] A. M. Ruf, E. Sande, and S. Solem. The optimal convergence rate of monotone schemes for conservation laws in the Wasserstein distance. *Journal of Scientific Computing*, June 2019. DOI: 10.1007/s10915-019-00996-1.

### Preprints

- [4] N. H. Risebro and A. M. Ruf. Numerical investigations into a model of partially incompressible two-phase flow in pipes. 2019. URL: <https://arxiv.org/abs/1906.00710>.
- [5] J. Badwaik and A. M. Ruf. Convergence rates of monotone schemes for conservation laws with discontinuous flux. 2019. URL: <https://arxiv.org/abs/1908.08772>.

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## Research visits

- 2019 **Julius-Maximilians-Universität Würzburg**, Germany, with Jayesh Badwaik (1 week).
- 2019 **Polytechnic University of Bari**, Italy, with Prof. Giuseppe Coclite (1 week).
- 2018 **ETH Zürich**, Switzerland, with Prof. Siddhartha Mishra (3 months).

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## Scholarships

- 2019 **Scholarship for NUMHYP2019**, *University of Málaga*, Spain.  
Numerical Methods for Hyperbolic Problems
- 2018 **Scholarship for an academic secondment**, *ETH Zürich*, Switzerland.
- 2018 **Scholarship for HYP2018**, *Penn State University*, USA.  
XVII International Conference on Hyperbolic Problems: Theory, Numerics, Applications

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## Invited talks

- **Julius-Maximilians-Universität Würzburg**, Germany, 30th of July 2019
- **Polytechnic University of Bari**, Italy, 10th of July 2019
- **ETH Zürich**, Switzerland, 21st of May 2019

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## Contributed talks

- **NumHYP2019**, University of Malaga, Spain, 21st of June 2019
- **BIT Circus**, Aalto University, Finland, 22th of September 2018
- **Hyp2018 XVII International Conference on Hyperbolic Problems: Theory, Numerics, Applications**, Penn State University, USA, 28th of June 2018
- **Modcompshock Midterm Review Meeting** ETH Zürich, Switzerland, 27th of October 2017

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## Academic experience

- 2019 **Teaching assistant**, *Simula Research Laboratory*, Norway.  
Taught the course 'Communicating Scientific Research' for PhD students
- 2010–2016 **Teaching assistant**, *TU Berlin*, Germany.  
Taught courses in
  - Functional analysis
  - Calculus
  - Calculus for engineers
- 2015–2016 **Student assistant**, *Matheon Research Center*, Berlin, Germany.
  - Organization of the Matheon advent calendar for students
  - Coordination and revision of the calendar puzzles and solutions
  - Donor acquisition
- 2015 **Coordinating assistant**, *TUBS*, Berlin, Germany.  
Coordinated the 79th annual meeting of the DPG.
- 2011–2012 **Student assistant**, *Unitus project*, TU Berlin, Germany.  
Created and improved activity oriented learning materials used in mathematical courses for engineers, e.g.
  - supporting teaching material
  - online platform Mumie
  - guidelines for teaching assistants
  - exam difficulty analyses
- 2009–2011 **Freelancer**, *Uniseminar Education AG*, Zürich, Switzerland.  
Created various mathematical teaching materials for the courses
  - Mathematics I & II
  - Mathematical economics

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## Languages

German	Mother tongue
English	Proficient
Finnish	Basic knowledge
Norwegian	Basic knowledge