

Dominic Breit

Curriculum vitae

School of Math. & Comp. Sci.
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Personal Information

Date of Birth **September 6, 1983.**
Place of Birth **Saarbrücken, Germany.**
Nationality **German.**
Status **married, 1 child.**

Education

11/2009–12/2013 **Habilitation in Mathematics, LMU Munich.**
"Existence theory for generalized Newtonian fluids"
Referees: Diening (LMU Munich), Frehse (University of Bonn),
Málek (Charles University, Prague), Süli (University of Oxford)

10/2007–10/2009 **PhD study in Mathematics, Saarland University, with distinction.**
"New regularity theorems for anisotropic variational integrals"
Referees: Bildhauer, Fuchs, Ural'tseva (St. Petersburg State University)

10/2003–07/2008 **Diploma study in Business Administration, Saarland University.**
"Estimating time continuous models in financial econometrics by EMM and GMM"

10/2003–09/2007 **Diploma study in Mathematics, Saarland University.**
"Regularity analysis for the Ramberg-Osgood model in three dimensions"
Referees: Bildhauer, Fuchs

06/2003 **School leaving, Theodor-Heuss-Gymnasium, Sulzbach.**

Employment

08/2018– **Heriot-Watt University Edinburgh.**
Associate Professor in the Department of Mathematics

10/2014–08/2018 **Heriot-Watt University Edinburgh.**
Lecturer in the Department of Mathematics

10/2013–10/2014 **Ludwig-Maximilian University Munich.**
Substitute of a professorship at the Mathematical Institute

10/2012–10/2013 **University of Florence.**
Research fellow in the Department of Mathematics "Ulisse Dini"

10/2011–10/2012 **Ludwig-Maximilian University Munich.**
Assistant lecturer at the Mathematical Institute

04/2011–10/2011 **University of Oxford.**
Research fellow at the Oxford Centre for Nonlinear PDE

10/2009–04/2011 **Saarland University.**
Assistant lecturer in the Department of Mathematics

10/2005–10/2009 **Saarland University.**
(Student) research assistant in the Department of Mathematics

Awards/Grants

- 2015–2018 **Several visitor grants.**
by LMS, EMS and Glasgow Math. J. Trust
- 11/2014 **Abilitazione Scientifica Nazionale.**
Italian habilitation for associate professors
- 06/2014 **Habilitation award of Münchner Universitätsgesellschaft 2014.**
Best habilitation thesis at LMU Munich
- 10/2012–10/2013 **Postdoc fellowship.**
Leopoldina (German National Academy of Science)
- 10/2011 **Dr. Eduard-Martin-Award 2011.**
Best PhD thesis of the Faculty for Math. & Comp. Sci. at Saarland University
- 04/2011–10/2011 **Postdoc fellowship.**
Alexander von Humboldt foundation
- 07/2009 **Best-Diploma Award.**
Department of Economics at Saarland University
- 10/2008–10/2009 **PhD fellowship.**
Landesgraduiertenförderung of Saarland

Selected publications

- D. Breit, L. Diening & F. Gmeineder: *On the Trace Operator for Functions of bounded \mathbb{A} -Variation.* **Anal. PDE** 13, 559–594. (2020)
- D. Breit, E. Feireisl, M. Hofmanová & B. Maslowski: *Stationary solutions to the compressible Navier–Stokes system driven by stochastic forces.* **Probab. Theory Relat. Fields** 174, 981–1032. (2019)
- D. Breit, A. Cianchi, L. Diening, T. Kuusi & S. Schwarzacher: *Pointwise Calderón-Zygmund gradient estimates for the p -Laplace system.* **J. Math. Pures Appl.** 114, 146–190. (2018)
- D. Breit & S. Schwarzacher: *Compressible fluids interacting with a linear-elastic shell.* **Arch. Rational Mech. Anal.** 228, 495–562. (2018)
- D. Breit, E. Feireisl & M. Hofmanová: *Incompressible limit for compressible fluids with stochastic forcing.* **Arch. Rational Mech. Anal.** 222, 895–926. (2016)

Services

- Referee for peer-reviewed journals
- Ann. Appl. Probab. ● Ann. Probab. ● Ann. Mat. Pura Appl.
 - Bull. Sci. Math. ● Calc. Var. & PDE ● Found. Comp. Math.
 - J. Diff. Equ. ● J. Math. Fluid Mech. ● J. Math. Pures Appl.
 - J. Sci. Computing ● IMA J. Num. Anal. ● Manus. Math.
 - Math. Mod. Meth. Appl. Sci. ● Nonlinear Anal.–Ser. A & B ● Nonlinearity
 - Num. Math. ● Rev. Mat. Iberoamericana ● SIAM J. Math. Anal.
 - SIAM J. Num. Anal. ● Stoch. PDE: Anal. Comp. ● Stoch. Pr. Appl.

- Lecturing • Plenary speaker: summer school Mathematical Aspects of Fluid Flows, Kacov, Czech Republic, 05/2017.
- Organizing • Summer school on mathematical fluid mechanics, ICMS Edinburgh, 09/2016, (together with B. Goddard & M. Schmuck).
 • Minisymposium "Stochastic PDEs", Equadiff 2017, Bratislava, 07/2017, (together with M. Hofmanová).
 • Summer school on multiscale problems in nonlinear PDEs, ICMS Edinburgh, 09/2017, (together with B. Goddard & M. Schmuck).
- PhD examiner • J. Žabenský, 2015 (Charles University, Prague)
 • A. Abbatiello, 2018 (University of Campania, Caserta)
 • K. Cheung, 2019 (Heriot-Watt University, Edinburgh)
 • G. Sperone, 2019 (Politecnico Milan)
 • J. A. Forlano, 2020 (Heriot-Watt University, Edinburgh)
 • J. Molla, 2020 (Heriot-Watt University, Edinburgh).

Teaching

- Heriot-Watt Univ. **Optimization**, *BSc/MSc Mathematics*, 2015–2020.
- Heriot-Watt Univ. **Mathematics for Engineers & Scientists III**, *service lecture*, 2015–2020.
- LMU Munich **Numerics II**, *MSc Mathematics*, 2014.
- LMU Munich **Mathematics for Pharmacists**, *service lecture*, 2014.
- LMU Munich **Sobolev spaces**, *MSc Mathematics*, 2013.
- LMU Munich **Numerics I**, *BSc Mathematics*, 2013.
- University of Florence **Function spaces**, *PhD Mathematics*, 2013.
- LMU Munich **Mathematics for Nature Science II**, *service lecture*, 2012.
- LMU Munich **Mathematics for Nature Science I**, *service lecture*, 2011.
- Saarland University **Preliminaries in mathematical fluid mechanics**, *MSc Mathematics*, 2010.
- Saarland University **Sobolev spaces**, *MSc Mathematics*, 2010.
- Saarland University **Preliminaries in the calculus of variations**, *BSc Mathematics*, 2009.

Supervised students

- 09/2018– **T. C. Moyo**, *PhD thesis*.
 "Generalized solutions to the stochastic Euler equations"
- 09/2017– **A. Dodgson**, *PhD thesis*.
 "Numerical approximation of the stochastic Navier–Stokes equations"
- 09/2015–10/2018 **P. R. Mensah**, *PhD thesis*.
 "The stochastic compressible Navier–Stokes system on the whole space and some singular limits"
- 08/2020 **J. Liang**, *MSc group project*.
 "Long-time behaviour of stochastic differential equations"
- 08/2020 **Y. Wang**, *MSc group project*.
 "Stochastic differential equations and partial differential equations"

- 08/2020 **S. Zhu**, *MSc group project*.
"Stochastic differential equations"
- 08/2020 **N. Szente**, *MSc group project*.
"Itô's formula and applications"
- 08/2020 **Y. Huang**, *MSc group project*.
"Itô diffusions and Markov processes"
- 08/2019 **S. Chen**, *MSc group project*.
"Financial modelling with jump processes"
- 08/2019 **Q. Li**, *MSc group project*.
"Financial modelling with jump processes"
- 08/2018 **C. Sun**, *MSc project*.
"Pricing Financial Derivatives by PDE-Methods"
- 12/2016 **A. Dodgson**, *MSc project*.
"Numerical approximation of the stochastic heat equation by Discontinuous Galerkin methods"
- 08/2016 **E. Antonopoulou**, *MSc project*.
"Finite Element Approximation of steady flows of non-Newtonian fluids"
- 08/2015 **G. Zanolì**, *MSc project*.
"Adaptive Finite Element Methods"
- 06/2014 **W. H. Stefani**, *Master's thesis*.
"Partial regularity for parabolic systems with subquadratic growth"
- 06/2014 **A. Schmidt**, *Diploma thesis*.
"Numerical Analysis of generalized Newtonian fluids"
- 11/2013 **F. X. Gmeineder**, *Master's thesis*.
"Approximation Theorems for parabolic BV and BD spaces"
- 2012–2019 **18 Bachelor's theses**.

References

- Prof. Andrea Cianchi
University of Florence, Department of Mathematics "Ulisse Dini"
Viale Morgagni 67/a, 50134 Florence, Italy
cianchi@unifi.it
- Prof. Dr. Lars Diening (Postdoctoral advisor)
University of Osnabrück, Mathematical Institute
Albrechtstr. 28a, 49076 Osnabrück, Germany
ldiening@uni-osnabrueck.de
- Prof. Eduard Feireisl
Czech Academy of Science, Institute of Mathematics
Žitná 25, 115 67 Praha 1, Czech Republic
feireisl@math.cas.cz
- Prof. Dr. Jens Frehse
University of Bonn, Department of Applied Mathematics
Endenicher Alle 60, 53115 Bonn, Germany

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- Prof. Jan Kristensen
Mathematical Institute, University of Oxford
Andrew Wiles Building, Radcliffe Observatory Quarter
Woodstock Road, Oxford OX2 6GG, United Kingdom
Jan.Kristensen@maths.ox.ac.uk
- Prof. J. Málek
Mathematical Institute, Charles University
Sokolovská 83, 186 75 Prague 8
malek@karlin.mff.cuni.cz