

CV of Felix Otto

Personal Information

1990	Diploma with G. Dziuk, U. of Bonn
1993	PhD with S. Luckhaus, U. of Bonn
1993–1994	Postdoctoral Associate, U. of Bonn
1994	Position in Industry, consulting company
1995–1996	Visiting Scholar, Courant Institute, New York
1995	Postdoctoral Associate, U. of Bonn
1996	Postdoctoral Associate, Carnegie Mellon University, Pittsburgh
1996–1997	Postdoctoral Associate, Courant Institute, New York
1997–1998	Assistant Professor (tenure track), U. of California at Santa Barbara
1998–1999	Full Professor (tenure), U. of California at Santa Barbara
1999–2010	Full Professor (tenure, C4, since 2008 W3), U. of Bonn
2002–2006	Speaker SFB 611 'Singular phenomena and scaling in mathematical models', U. of Bonn
2006–2009	Managing director of the cluster of excellence 'Hausdorff Center for Mathematics'
since 2010	Director at the Max Planck Institute for Mathematics in the Sciences, Leipzig
since 2010	Honorary Professor for 'Analysis and Mathematical Modelling', U. of Leipzig

Scientific Honors

1997	A. P. Sloan Research Fellowship
2001	Max Planck Research Prize
2006	Gottfried Wilhelm Leibniz prize of the DFG
2007	Collatz price of CICIAM
2017	Blaise Pascal Medal for Mathematics of the European Academy of Sciences
2018	Prof. Luigi Tartufari International Prize for Mathematics from the Accademia Nazionale dei Lincei
2022	"Tullio Levi-Civita"-Prize for the Mathematical and Mechanical Sciences
	Member of Academy of Science of the State of Nordrhein-Westfalen (since 2007)
	Member of German Academy of Sciences Leopoldina (since 2008)
	Member of Berlin-Brandenburg Academy of Sciences and Humanities (since 2014)
	Member of Academia Europaea (since 2015)

Memberships and Committee Activities

Felix Otto is/was a member of:
MFO scientific committee (2010–), chair since 2016
DFG Review Board 'Natural Science - Mathematics' (2012–2020)
DFG reviewer in the evaluation process "Universities of Excellence" (2019)
SIAM Council (2014–)
Executive committee of the SIAM Council (elected in 2014)

Chair of the SIAM Activity Group on Materials Sciences (2021–)
 Member of the Selection Committee for the Gottfried Wilhelm Leibniz Programme (2021-2029)
 Selection Committee for the Georg Cantor medal, 2012, 2014, and 2019 Deutsche Mathematiker-Vereinigung (DMV)
 Selection Committee for the Heinz Gumin Prize for Mathematics of the Carl Friedrich von Siemens Foundation (2013–2017)
 Shaw Prize Committee for Mathematics (2017–2019)
 Selection Committee for the Euler Lecture in Potsdam/Sanssouci (2016–)
 Selection Committee for the German Academic Scholarship Foundation (2017)
 Sub-committee for the Karl-Georg-Christian-von-Staudt-Preis (2018)
 Advisory Board of the Physics Faculty, University of Leipzig (2012–)
 Advisory Board 'Fondation Mathématique Jacques Hadamard' (2012–2018)
 Scientific Advisory Board of the Graduate School AICES Aachen
 Advisory Board SISSA, Trieste (2017–2023)
 Board member for 'School of Excellence' in Napoli (PhD program for Mathematics, Physics or Engineering) (2020–)
 Selection Committee for (free-floating) Max Planck Research Group Leader positions (2018–)
 Appointment board within the Max Planck Society for: the MPI for Gravitational Physics, Albert Einstein Institute in Golm (2011), MPI for Chemistry in Mainz (2012), MPI for Dynamics and Self-Organization in Göttingen (2015), the MPI for Software Systems in Saarbrücken (2015), the Fritz Haber Institute in Berlin (2016), Core Committee for the MPI for Gravitational Physics in Potsdam/Hannover (2017–)

Editorships

2000–2005 Nonlinearity
 2002–2008 SIAM Journal for Multiscale Modeling and Simulation
 since 1999 Archive for Rational Mechanics and Analysis; since 2020 EIC
 since 2010 Journal of Functional Analysis
 since 2011 Journal of Evolution Equations
 since 2012 Journal of Nonlinear Science
 since 2015 Proceedings of the Edinburgh Mathematical Society (Consulting editor)
 since 2014 La collection Maths and Applications, SMAi (Comité éditorial)
 since 2020 Stochastics and Partial Differential Equations

Offers

1998 Universität Erlangen (C4-Professor)
 1999 University of Wisconsin-Madison (Full Professor)
 1999 University of Texas at Austin (Full Professor)
 1999 University of Chicago (Full Professor)

Invited Lectures

2000 SIAM Materials Science plenary speaker; 2001 GAMM plenary speaker; 2002 ICM sectional speaker; 2004 Applied Mathematics Seminar, Collège de France; 2004 Charles Amick Memorial Lecturer, Chicago; 2004 Stieltjes Visiting Professor, Netherlands; 2006 Aziz Lecturer, Maryland; 2007 ICIAM plenary lecture; 2007 Pacific Institute for the Mathematical Sciences, Distinguished Chair; 2008 European Congress of Mathematics plenary lecture; 2009 Gauss lecture Magdeburg; 2009 SIAM conference on analysis of partial differential equations, plenary lecture; 2010 Gergen

Lectures, Duke University; 2011 Ordway Lectures, University of Minneapolis; 2011 SIAM Dynamical systems plenary speaker, Snowbird/Utah; 2012 Hadamard Lectures, Paris; 2012 Ziwet Lectures, University of Michigan; 2013 Equadiff, Prag, plenary lecture; 2013 Marker Lecture Series, The Pennsylvania State University; 2014 Hypatie seminar, Lyon; 2014 Nederlands Mathematisch Congres, Delft, plenary lecture; 2014 Clay Senior Scholar-in-Residence, Park City; 2014 Conference on Stochastic Processes and their Applications, Buenos Aires, plenary lecture; 2015 Jan-March Schlumberger Chair for mathematical sciences at IHES and 2016 Jan-March; 2015 Distinguished Lectures: Connecticut Valley Colloquium, Univ. Mass Amherst; 2015 Colloquium, Mathematical Analysis Dept. Rome; 2015 Festkolloquium Weierstrass, Paderborn; 2015 Colloquium, Mathematical Institute Oxford; 2015 Conference on Geometric non-linear analysis on the occasion of Michael Struwe's 60th birthday, invited lecture 2015 Conference Panorama of Mathematics, Hausdorff Center Bonn, invited lecture 2015 Analysis Workshop at ENS Lyon on the occasion of Luigi Ambrosio's doctorat honoris causa, invited talk 2015 Leçons Jacques-Louis Lions; Colloquium at Laboratoire Jacques-Louis Lions Paris; 2016 Colloquium, Universität Eichstätt-Ingolstadt 2016 SIAM Conference on Mathematical Aspects of Material Science, Philadelphia, plenary lecture; 2016 Challenges in Nonequilibrium Statistical Physics and Fluid Dynamics: A conference in honor of the 60th birthday of Charlie Doering, plenary lecture; 2016 Topics in Applied Nonlinear Analysis: Recent Advances and New Trends: conference in honor of David Kinderlehrer's 75th birthday, invited lecture; 2016 XVI International Conference on Hyperbolic Problems: Theory, Numerics, Applications at RWTH Aachen, plenary lecture; 2016 A Mathematical Tribute to Ennio De Giorgi, Pisa, invited talk; 2016 Colloquium, Cardiff University; 2016 Colloquium, IST Austria; 2017 Feb-March Visiting Professor, University of Rome 'La Sapienza' 2017 Calculus of Variations and Optimal Transportation: An international conference in the honor of Yann Brenier for his 60th birthday, IHP Paris; plenary lecture; 2017 Special TRR lecture (of the collaborative research center CRC TRR 146), Universität Mainz; 2017 Non-linear PDEs, stochastic control and filtering: new methods and applications: In honour of the 75th birthday of Nicolai Krylov; plenary lecture; 2017 Leonardo Da Vinci Lecture, Università di Milano; 2018 Conference in honor of Leonid Berlyand's 60th birthday 2018 Colloquium, ETH Zürich 2018 Festival of Bonn Mathematics, Hausdorff Center U Bonn; 2019 Dynamics, Equations and Applications (DEA), Kraków, plenary lecture; 2019 AMMP Colloquium, Imperial College London; 2020 Distinguished lecture series at UCLA 2020 Annual meeting of the Italian school of calculus of variations, Levico Terme, invited talk; 2021 Richard von Mises Lecture, HU Berlin;

Invited Online talks

2020 SIAM PDE Webinar; 2020 Asia-Pacific Analysis and PDE Seminar; 2020 IAS Princeton Analysis and Math Physics Seminar; 2020 Princeton Analysis Seminar

Teaching activities, past 5 years

Lectures:

Summer term 2017: Viscosity solutions and scalar conservation laws

Winter term 2017/18: Regularity theory for Optimal Transportation; Ringvorlesung of the IMPRS: Partial Differential Equations

Summer semester 2018: Stochastic homogenization

Winter term 2018/19: Introduction into regularity structures

Summer term 2019: Ringvorlesung of the IMPRS; Randomness in PDE - selected topics

Winter term 2019/2020: Logarithmic Sobolev Inequality

Winter term 2021/2022: Randomness and partial differential equations

Summer term 2022: Ringvorlesung of the IMPRS: From Combinatorics to Partial Differential Equations

Lecture series and schools:

2018 Mini-course on 'Nonlinear partial differential equations and interfacial motions as gradient flow'; 10th Math. Soc. of Japan Seasonal Institute (MSJ-SI), Hokkaido Univ. Sapporo
 2018 Mini-course on 'Parabolic equations with rough coefficients and singular forcing'; Universidad Autonoma de Madrid
 2018 Lecture on 'The thresholding scheme for mean curvature flow as minimizing movement scheme'; International Summer School on 'Extrinsic Curvature Flows', ICTP Trieste
 2018 Mini-course on 'Singular SPDE with rough coefficients'; Summer School 'Recent Developments in Stochastic Partial Differential Equations', in honor of Giuseppe Da Prato, Varese, Italy
 2018 Mini-course on 'Regularity Structures, reconstruction and integration'; Workshop 'Renormalisation in quantum field theory and in stochastic partial differential equations: a gentle introduction and some recent developments', within the trimester program on 'Scaling limits, rough paths, quantum field theory', Isaac Newton Institute, Cambridge
 2019 Lecture on 'Convergence of the thresholding scheme for mean curvature flow'; Winter School and Opening Workshop on the 'Evolution of Interfaces', within the Trimester Program: 'Evolution of Interfaces'; HIM Bonn
 2019 Lecture on 'Stochastic homogenization'; Winter School during the Thematic Semester 'Calculus of Variations', University of Toulouse
 2019 Mini-course on 'The thresholding scheme for mean curvature flow and De Giorgi's ideas for minimizing movements', Universität Duisburg-Essen
 2019 Lecture on 'Singular quasi-linear stochastic PDEs', Summer School 'New Frontiers in Singular SPDEs and Scaling Limits', HIM Bonn
 2020 (Oct-Dec) Nachdiplom-Vorlesung 'Stochastic Homogenization', ETH Zurich
 2022 Mini-course on 'A variational approach to the regularity theory for optimal transportation', JEDP conference, Obernai
 2022 Lecture on 'The thresholding scheme for mean curvature flow and De Giorgi's ideas for gradient flows', PIMS-IFDS-NSF Summer School on Optimal Transport, Seattle

Co-organization of conferences, past 5 years

Program Committee for the 2018 International Congress of Mathematicians: chair for PDE section
 Closing workshop for the program Scaling limits, rough paths, quantum field theory at Newton Institute Cambridge, 2018
 ICIAM, Valencia 2019, Scientific Advisory Committee
 Isaac Newton Institute, Cambridge 2019, Scientific committee for long-term programme on the Mathematical Design of New Materials
 Co-Organizer (with Scott Armstrong) of minisymposium on stochastic homogenization at Equadiff 2019, Leiden
 Co-organizer (with Charlie Smart) of a minisymposium at the 41st Conference on Stochastic Processes and their Applications, Northwestern University Evanston 2019
 Material theories, statistical mechanics, and geometric analysis, A conference in honor of Stephan Luckhaus' 66th birthday, Leipzig 2019
 LIA in Regensburg 2019; member of scientific committee
 Program committee DMV Annual Meeting, Chemnitz 2020
 Organizing committee for (virtual) SIAM Conference on Mathematical Aspects of Materials Science 2021, (BCAM Bilbao), Spain
 Co-Organizer of the conference 'Mathematical Concepts in the Sciences and Humanities', dedicated to Jürgen Jost on the occasion of his 65th birthday, Leipzig

Doctoral theses

- Natalie Grunewald (2004)
Mathematische Analyse einer Stick-Slip-Bewegung in zufälligem Medium
- Wolf-Patrick Düll (2004)
Theorie einer pseudoparabolischen partiellen Differentialgleichung zur Modellierung der Lösemittelaufnahme in Polymerfeststoffen
 - Hans Knüpfer (11/2007)
Classical Solutions for a Thin-Film Equation
 - Tobias Rump (05/2008)
Coarsening Processes in Thin Liquid Films: Analysis and Numerics
 - Jörg Drwenski (05/2008)
Numerical Methods for a Reduced Model in Thin-Film Micromagnetics
 - Patrick Penzler (09/2009)
Cahn-Hilliard-type Equations: Robust Discretization and Efficient Implementation
 - Ruben Cantero-Alvarez (10/2009)
Pattern, Wall and Vortex: a micromagnetic excursion
 - Thomas Viehmann (11/2009)
Uniaxial Ferromagnets
 - Jutta Steiner (05/2011)
The formation of the concertina pattern: Experiments, analysis, and numerical simulations
 - Georg Menz (05/2011)
Equilibrium dynamics of continuous unbounded spin systems
 - Christian Seis (12/2011)
Scaling laws in two thermodynamical fluid models
 - Christian Löschcke (02/2013)
On the relaxation of a variational principle for the motion of a vortex sheet in perfect fluid
 - Manuel Gnann (07/2014)
The Moving Contact Line in Viscous Thin Films: a Singular Free Boundary Problem
 - Lukas Döring (01/2015)
Asymmetric domain walls in soft ferromagnetic films
 - Elias Esselborn (01/2015)
Gradient Flows for nonconvex energies: Asymptotics and stability for two models from fluid mechanics
 - Camilla Nobili (11/2015)
Rayleigh-Bénard convection: bounds on the Nusselt number
 - Arianna Giunti (04/2017)
Green's function estimates for elliptic and parabolic operators: Applications to quantitative stochastic homogenization and invariance principles for degenerate random environments and interacting particle systems

- Tim Bastian Laux (04/2017)
Convergence of phase-field models and thresholding schemes via the gradient flow structure of multi-phase mean-curvature flow
- Thilo Martin (now Theresa) Simon(05/2018)
Materials Science-inspired problems in the Calculus of Variations: Rigidity of shape memory alloys and multi-phase mean curvature flow
- Claudia Raithel (03/2019)
Some Large-Scale Regularity Results for Linear Elliptic Equations with Random Coefficients and on the Well-Posedness of Singular Quasilinear SPDEs
- Nicolas Clozeau (co-supervision with Antoine Gloria) (09/2021)
Quantitative estimates in stochastic homogenization of elliptic equations and systems
- Maxime Prod'homme (co-supervision with Max Fathi) (10/2021)
Contributions au problème du transport optimal et à sa régularité
- Pablo Linares (??/2022)
On a tree-free approach to regularity structures for quasi-linear stochastic partial differential equations
- Florian Kunick since 2018
- Jules Pertinand (co-supervision with Antoine Gloria) since 2018
- Markus Tempelmayr since 2020
- Francesco Mattesini (co-supervision with Martin Huesmann) since 2021
- Christian Wagner since 2021
- Timofii Prokopenko (co-supervision with Andrey Dorogovtsev) since 2022

Mentor of Postdoctoral Fellows

Michael Westdickenberg 1999-2007
 Maria Westdickenberg 2006-2007
 Natalie Grunewald 2004-2007
 Antonio Capella-Kort 2005-2008
 Radu Ignat 2006-2007
 Antoine Gloria 2007-2008
 Fabio Ramos 2008-2009
 Matthias Kurzke 2006-2007
 Eleonora Cinti 2010–2012
 Stefan Neukamm 2010–2013
 Robin Nittka 2011–2012
 Michael Blaser 2011–2012
 Samuel Ferraz-Leite 2011–2013
 Georg Menz 2011–2012
 Agnes Lamacz 2012
 Matthew Elsey 2012–2013
 Daniel Marahrens 2012–2014
 Michael Goldman 2012–2014
 Dominik John 2013–2014

Elias Esselborn 2015
Peter Bella 2012–2016
Sergey Tikhomirov 2013–2016
Julian Fischer 2014–2016
Xavier Lamy 2015–2016
Benjamin Fehrman 2015–2018
Scott Andrew Smith 2016–2019
Tatsuya Miura (part-time) 2018–2019
Marc Josien 2018–2020
Qiang Xu 2018–2020
Mathias Schöffner 2019–2020
Venera Khoromskaia 2015–2021
Jonas Sauer 2016–2020
Aymeric Baradat 2019–2020
Pawel Duch 2018–2021
Pavlos Tsatsoulis 2018–2021
Tobias Ried 2018–
Sam Krupa 2020–
Georgiana Chatzigeorgiou 2020–
Rishabh Gvalani 2020–
Max Goering 2021–
Daniel Heydecker 2021–
Jing An 2021–
Lukas Koch 2021–
Lihan Wang 2022–

Personal Grants

BMBF-Project Modeling and Simulation of the Microstructure Formation in Thin Coating Layers together with M. Rumpf
BMBF-Project Kontinuierliche Modelle für epitaktisches Wachstum von SiGe together with A. Voigt
NSF grant DMS-9803389
DFG grant on Homogenization of dilute particle dispersions together with B. Niethammer
RTN-Project Multi-scale modelling and characterization for phase transformation in advanced materials (MULTIMAT) together with M. Griebel
DFG grant on Pattern formation in magnetic materials together with A. Kunoth (in SFB 611)
DFG grant on Scaling laws and their cross-overs together with G. Gruen and C. Helzel (in SFB 611)
DFG grant on Kinetic models and their dynamic equilibria together with A. Voigt (in SFB 611)
DFG grant on A7: Continuum models of magnetic shape memory materials: mathematics together with S. Mueller within DFG-Priority Program SPP1239 Change of microstructure and shape of solid materials by external magnetic fields (2006–2008, 2009–2010)
DFG grant with M. Huesmann on the project Optimales Matching and Balancing Transport within the Priority Programme “Random Geometric Systems” (SPP 2265; Funding period Oct 2020–2023)

Bibliometric data (Scopus, 21.12.2022)

5.855 citations by 3646 documents – 103 co-authors – 38 h-index

Selected publications

1. Josien, M., Otto, F. The annealed Calderón-Zygmund estimate as convenient tool in quantitative stochastic homogenization (2022) *Journal of Functional Analysis*, 283 (7), art. no. 109594.
2. Bellova, K., Julia, A., Otto, F. Uniform energy distribution in a pattern-forming system of surface charges (2022) *Revista Matemática Iberoamericana*, 38 (3), pp. 783-822.
3. Schneider, M., Josien, M., Otto, F. Representative volume elements for matrix-inclusion composites - a computational study on the effects of an improper treatment of particles intersecting the boundary and the benefits of periodizing the ensemble (2022) *Journal of the Mechanics and Physics of Solids*, 158, art. no. 104652.
4. Goldman, M., Huesmann, M., Otto, F. Quantitative Linearization Results for the Monge-Ampère Equation (2021) *Communications on Pure and Applied Mathematics*, 74 (12), pp. 2483-2560.
5. Otto, F., Prod'homme, M., Ried, T. Variational Approach to Regularity of Optimal Transport Maps: General Cost Functions (2021) *Annals of PDE*, 7 (2), art. no. 17.
6. Lu, J., Otto, F. Optimal Artificial Boundary Condition for Random Elliptic Media (2021) *Foundations of Computational Mathematics*, 21 (6), pp. 1643-1702.
7. Miura, T., Otto, F. Sharp boundary ϵ -regularity of optimal transport maps (2021) *Advances in Mathematics*, 381, art. no. 107603.
8. Gloria, A., Neukamm, S., Otto, F. QUANTITATIVE ESTIMATES IN STOCHASTIC HOMOGENIZATION FOR CORRELATED COEFFICIENT FIELDS (2021) *Analysis and PDE*, 14 (8), pp. 2497-2537.
9. Duerinckx, M., Gloria, A., Otto, F. Robustness of the pathwise structure of fluctuations in stochastic homogenization (2020) *Probability Theory and Related Fields*, 178 (1-2), pp. 531-566.
10. Duerinckx, M., Otto, F. Higher-order pathwise theory of fluctuations in stochastic homogenization (2020) *Stochastics and Partial Differential Equations: Analysis and Computations*, 8 (3), pp. 625-692.
11. Duerinckx, M., Gloria, A., Otto, F. The Structure of Fluctuations in Stochastic Homogenization (2020) *Communications in Mathematical Physics*, 377 (1), pp. 259-306.
12. Bella, P., Giunti, A., Otto, F. Effective multipoles in random media (2020) *Communications in Partial Differential Equations*, 45 (6), pp. 561-640.
13. Gloria, A., Neukamm, S., Otto, F. A Regularity Theory for Random Elliptic Operators (2020) *Milan Journal of Mathematics*, 88 (1), pp. 99-170.
14. Laux, T., Otto, F. Brakke's inequality for the thresholding scheme (2020) *Calculus of Variations and Partial Differential Equations*, 59 (1), art. no. 39, .
15. Goldman, M., Otto, F. A variational proof of partial regularity for optimal transportation maps (2020) *Annales Scientifiques de l'Ecole Normale Supérieure*, 53 (5), pp. 1209-1233.
16. Ignat, R., Otto, F. The magnetization ripple: A nonlocal stochastic PDE perspective (2019) *Journal des Mathématiques Pures et Appliquées*, 130, pp. 157-199.
17. Otto, F., Weber, H. Quasilinear SPDEs via Rough Paths (2019) *Archive for Rational Mechanics and Analysis*, 232 (2), pp. 873-950.
18. Knüpfer, H., Otto, F. Nucleation barriers for the cubic-to-tetragonal phase transformation in the absence of self-accommodation (2019) *ZAMM Zeitschrift für Angewandte Mathematik und Mechanik*, 99 (2), art. no. e201800179.
19. Otto, F., Scholtes, S., Westdickenberg, M.G. Optimal L1-type relaxation rates for the Cahn-Hilliard equation on the line (2019) *SIAM Journal on Mathematical Analysis*, 51 (6), pp. 4645-4682.
20. Chugreeva, O., Otto, F., Westdickenberg, M.G. Relaxation to a planar interface in the Mullins-Sekerka problem (2019) *Interfaces and Free Boundaries*, 21 (1), pp. 21-40.
21. Lamy, X., Otto, F. On the regularity of weak solutions to Burgers' equation with finite entropy production (2018) *Calculus of Variations and Partial Differential Equations*, 57 (4), art. no. 94, .
22. Conti, S., Goldman, M., Otto, F., Serfaty, S. A branched transport limit of the Ginzburg-Landau functional (2018) *Journal de l'Ecole Polytechnique - Mathématiques*, 5, pp. 317-375.
23. Conlon, J.G., Giunti, A., Otto, F. Green's function for elliptic systems: existence and Delmotte-Deuschel bounds (2017) *Calculus of Variations and Partial Differential Equations*, 56 (6), art. no. 163.

25. Nobili, C., Otto, F. Limitations of the background field method applied to Rayleigh-Bénard convection (2017) *Journal of Mathematical Physics*, 58 (9), art. no. 093102, .
26. Fischer, J., Otto, F. Sublinear growth of the corrector in stochastic homogenization: Optimal stochastic estimates for slowly decaying correlations (2017) *Stochastics and Partial Differential Equations: Analysis and Computations*, 5 (2), pp. 220-255.
27. Bella, P., Fehrman, B., Fischer, J., Otto, F. Stochastic homogenization of linear elliptic equations: Higher-order error estimates in weak norms via second-order correctors (2017) *SIAM Journal on Mathematical Analysis*, 49 (6), pp. 4658-4703.
28. Gloria, A., Otto, F. Quantitative results on the corrector equation in stochastic homogenization (2017) *Journal of the European Mathematical Society*, 19 (11), pp. 3489-3548.
29. Cinti, E., Otto, F. Interpolation inequalities in pattern formation (2016) *Journal of Functional Analysis*, 271 (11), pp. 3348-3392.
30. Laux, T., Otto, F. Convergence of the thresholding scheme for multi-phase mean-curvature flow (2016) *Calculus of Variations and Partial Differential Equations*, 55 (5), art. no. 129, .
31. Giacomelli, L., Gnann, M.V., Otto, F. Rigorous asymptotics of traveling-wave solutions to the thin-film equation and Tanner's law (2016) *Nonlinearity*, 29 (9), pp. 2497-2536.
32. Fischer, J., Otto, F. A higher-order large-scale regularity theory for random elliptic operators (2016) *Communications in Partial Differential Equations*, 41 (7), pp. 1108-1148.
33. Choffrut, A., Nobili, C., Otto, F. A maximal regularity estimate for the non-stationary Stokes equation in the strip (2016) *Journal of Differential Equations*, 260 (7), pp. 5589-5626.
34. Döring, L., Hengst, C., Otto, F., Schäfer, R. Interacting tails of asymmetric domain walls: Theory and experiments (2016) *Physical Review B*, 93 (2), art. no. 024414, .
35. Bella, P., Otto, F. Corrector estimates for elliptic systems with random periodic coefficients (2016) *Multiscale Modeling and Simulation*, 14 (4), pp. 1434-1462.
36. Mourrat, J.-C., Otto, F. Correlation structure of the corrector in stochastic homogenization (2016) *Annals of Probability*, 44 (5), pp. 3207-3233.
37. Conti, S., Otto, F., Serfaty, S. Branched microstructures in the Ginzburg-Landau model of type-I superconductors (2016) *SIAM Journal on Mathematical Analysis*, 48 (4), pp. 2994-3034.
38. Esselborn, E., Gigli, N., Otto, F. Algebraic contraction rate for distance between entropy solutions of scalar conservation laws (2016) *Journal of Mathematical Analysis and Applications*, 435 (2), pp. 1525-1551.
39. Choffrut, A., Nobili, C., Otto, F. Upper bounds on Nusselt number at finite Prandtl number (2016) *Journal of Differential Equations*, 260 (4), pp. 3860-3880.
40. Mourrat, J.-C., Otto, F. Anchored Nash inequalities and heat kernel bounds for static and dynamic degenerate environments (2016) *Journal of Functional Analysis*, 270 (1), pp. 201-228.
41. M. Goldman, M. Josien, F. Otto. New bounds for the inhomogeneous Burgers and the Kuramoto-Sivashinsky equations. *Comm. Partial Differential Equations* 40 (2015), 2237-2265
42. S. Esedoglu, F. Otto. Threshold dynamics for networks with arbitrary surface tensions. *Comm. Pure Appl. Math.* 68 (2015), 808-864.
43. A. Gloria, S. Neukamm, F. Otto. Quantification of ergodicity in stochastic homogenization: optimal bounds via spectral gap on Glauber dynamics. *Invent. Math.* 199 (2015), 455-515.
44. L. Doering, R. Ignat, F. Otto. A reduced model for domain walls in soft ferromagnetic films at the cross-over from symmetric to asymmetric wall types. *J. Eur. Math. Soc. (JEMS)* 16 (2014), 1377-1422
45. J. Lu, F. Otto. Nonexistence of a minimizer for Thomas-Fermi-Dirac-von Weizsaecker model. *Comm. Pure Appl. Math.* (2014), 1605-1617
46. L. Giacomelli, M.V. Gnann, H. Knuepfer, F. Otto. Well-posedness for the Navier-slip thin-film equation in the case of complete wetting. *J. Differential Equations* 257 (2014), 15-81
47. F. Otto, M.G. Westdickenberg. Relaxation to equilibrium in the one dimensional Cahn-Hilliard equation. *SIAM J. Math. Anal.* 46 (2014), 720-756
48. L. Giacomelli, M.V. Gnann, F. Otto. Regularity of source-type solutions to the thin-film equation with zero contact angle and mobility exponent between $3/2$ and 3 . *European J. Appl. Math.* 24

- (2013), 735-760
49. H. Knuepfer, R.V. Kohn, F. Otto. Nucleation barriers for the cubic-to-tetragonal phase transformation. *Comm. Pure Appl. Math.* 66 (2013), 867-904
 50. F. Otto, C. Seis, D. Slepcev. Crossover of the coarsening rates in demixing of binary viscous liquids. *Commun. Math. Sci.* 11 (2013), 441-464
 51. A. Gloria, F. Otto. An optimal error estimate in stochastic homogenization of discrete elliptic equations. *Ann. Appl. Probab.* 22 (2012), 1-28
 52. F. Otto, C. Seis. Rayleigh-Bénard convection: improved bounds on the Nusselt number. *J. Math. Phys.* 52 (2011), 083702
 53. A. Gloria, F. Otto. An optimal variance estimate in stochastic homogenization of discrete elliptic equations. *Ann. Probab.* 39 (2011), 779-856
 54. R. Ignat, F. Otto. A compactness result for Landau state in thin-film micromagnetics. *Ann. Inst. H. Poincaré Anal. Non Linéaire* 28 (2011), 247-282.
 55. F. Otto, J. Steiner. The concertina pattern: from micromagnetics to domain theory. *Calc. Var. Partial Differential Equations* 39 (2010), 139-181
 56. A. Capella, F. Otto. A rigidity result for a perturbation of the geometrically linear three-well problem. *Comm. Pure Appl. Math.* 62 (2009), 1632-1669
 57. F. Otto. Optimal bounds on the Kuramoto-Sivashinsky equation. *J. Funct. Anal.* 257 (2009), 2188-2245
 58. N. Grunewald, F. Otto, C. Villani, M.G. Westdickenberg. A two-scale approach to logarithmic Sobolev inequalities and the hydrodynamic limit. *Ann. Inst. Henri Poincaré Probab. Stat.* 45 (2009), 302-351
 59. G. Alberti, R. Choksi, F. Otto. Uniform energy distribution for an isoperimetric problem with long-range interactions. *J. Amer. Math. Soc.* 22 (2009), 569-605
 60. R. Ignat, F. Otto. A compactness result in thin-film micromagnetics and the optimality of the Néel wall. *J. Eur. Math. Soc. (JEMS)* 10 (2008), 909-956
 61. L. Giacomelli, H. Knuepfer, F. Otto. Smooth zero-contact-angle solutions to a thin-film equation around the steady state. *J. Differential Equations* 245 (2008), 1454-1506
 62. R. Choksi, S. Conti, R.V. Kohn, F. Otto. Ground state energy scaling laws during the onset and destruction of the intermediate state in a type I superconductor. *Comm. Pure Appl. Math.* 61 (2008), 595-626
 63. F. Otto, A.E. Tzavaras. Continuity of velocity gradients in suspensions of rod-like molecules. *Comm. Math. Phys.* 277 (2008), 729-758
 64. A. Capella, C. Melcher, F. Otto. Wave-type dynamics in ferromagnetic thin films and the motion of Néel walls. *Nonlinearity* 20 (2007), 2519-2537
 65. F. Otto, M.G. Reznikoff. Slow motion of gradient flows. *J. Differential Equations* 237 (2007), 372-420
 66. R. Cantero-Alvarez, F. Otto, J. Steiner. The concertina pattern: a bifurcation in ferromagnetic thin films. *J. Nonlinear Sci.* 17 (2007), 221-281
 67. F. Otto, M.G. Reznikoff. A new criterion for the logarithmic Sobolev inequality and two applications. *J. Funct. Anal.* 243 (2007), 121-157
 68. R. Kohn, F. Otto, M.G. Reznikoff, E. Vanden-Eijnden. Action minimization and sharp-interface limits for the stochastic Allen-Cahn equation. *Comm. Pure Appl. Math.* 60 (2007), 393-438
 69. A. DeSimone, H. Knuepfer, F. Otto. 2-d stability of the Néel wall. *Calc. Var. Partial Differential Equations* 27 (2006), 233-253
 70. F. Otto, T. Rump, D. Slepcev. Coarsening rates for a droplet model: rigorous upper bounds. *SIAM J. Math. Anal.* 38 (2006), 503-529
 71. B. Jourdain, C. Le Bris, T. Lelièvre, F. Otto. Long-time asymptotics of a multiscale model for polymeric fluid flows. *Arch. Ration. Mech. Anal.* 181 (2006), 97-148
 72. F. Otto, M. Westdickenberg. Eulerian calculus for the contraction in the Wasserstein distance. *SIAM J. Math. Anal.* 37 (2005), 1227-1255
 73. G. Menon, F. Otto. Dynamic scaling in miscible viscous fingering. *Comm. Math. Phys.* 257 (2005),

303-317

74. A. Hoenig, B. Niethammer, F. Otto. On first-order corrections to the LSW theory. II. Finite systems. *J. Stat. Phys.* 119 (2005), 123-164
75. A. Hoenig, B. Niethammer, F. Otto. On first-order corrections to the LSW theory. I. Infinite systems. *J. Stat. Phys.* 119 (2005), 61-122
76. F. Otto, M. Westdickenberg. Convergence of thin film approximation for a scalar conservation law. *J. Hyperbolic Differ. Equ.* 2 (2005), 183-199
77. L. Giacomelli, F. Otto. New bounds for the Kuramoto-Sivashinsky equation. *Comm. Pure Appl. Math.* 58 (2005), 297-318
78. C. De Lellis, F. Otto, M. Westdickenberg. Minimal entropy conditions for Burgers equation. *Quart. Appl. Math.* 62 (2004), 687-700
79. R. Choksi, R.V. Kohn, F. Otto. Energy minimization and flux domain structure in the intermediate state of a type-I superconductor. *J. Nonlinear Sci.* 14 (2004), 119-171
80. F. Otto, P. Penzler, A. Raetz, T. Rump, A. Voigt. A diffuse-interface approximation for step flow in epitaxial growth. *Nonlinearity* 17 (2004), 477-491
81. L. Giacomelli, F. Otto. Rigorous lubrication approximation. *Interfaces Free Bound.* 5 (2003), 483-529
82. C. De Lellis, F. Otto, M. Westdickenberg. Structure of entropy solutions for multi-dimensional scalar conservation laws. *Arch. Ration. Mech. Anal.* 170 (2003), 137-184
83. C. De Lellis, F. Otto. Structure of entropy solutions to the eikonal equation. *J. Eur. Math. Soc. (JEMS)* 5 (2003), 107-145
84. A. Desimone, R.V. Kohn, S. Mueller, F. Otto. Repulsive interaction of $N\{e\}$ walls, and the internal length scale of the cross-tie wall. *Multiscale Model. Simul.* 1 (2003), 57-104
85. R.V. Kohn, F. Otto. Upper bounds on coarsening rates. *Comm. Math. Phys.* 229 (2002), 375-395
86. A. Desimone, R.V. Kohn, S. Mueller, F. Otto. A reduced theory for thin-film micromagnetics. *Comm. Pure Appl. Math.* 55 (2002), 1408-1460
87. L. Giacomelli, F. Otto. Droplet spreading: intermediate scaling law by PDE methods. *Comm. Pure Appl. Math.* 55 (2002), 217-254
88. F. Otto. The geometry of dissipative evolution equations: the porous medium equation. *Comm. Partial Differential Equations* 26 (2001), 101-174
89. B. Niethammer, F. Otto. Domain coarsening in thin films. *Comm. Pure Appl. Math.* 54 (2001), 361-384
90. F. Otto, C. Villani. Generalization of an inequality by Talagrand and links with the logarithmic Sobolev inequality. *J. Funct. Anal.* 173 (2000), 361-400
91. F. Otto. Evolution of microstructure in unstable porous media flow: a relaxational approach. *Comm. Pure Appl. Math.* 52 (1999), 873-915
92. R. Choksi, R.V. Kohn, F. Otto. Domain branching in uniaxial ferromagnets: a scaling law for the minimum energy. *Comm. Math. Phys.* 201 (1999), 61-79
93. F. Otto. Lubrication approximation with prescribed nonzero contact angle. *Comm. Partial Differential Equations* 23 (1998), 2077-2164
94. R. Jordan, D. Kinderlehrer, F. Otto. The variational formulation of the Fokker-Planck equation. *SIAM J. Math. Anal.* 29 (1998), 1-17
95. F. Otto. Dynamics of labyrinthine pattern formation in magnetic fluids: a mean-field theory. *Arch. Rational Mech. Anal.* 141 (1998), 63-103
96. F. Otto. L1-contraction and uniqueness for quasilinear elliptic-parabolic equations. *J. Differential Equations* 131 (1996), 20-38