

Felix Schulze

Contact

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Research Interests

Differential Geometry, Partial Differential Equations, Geometric Analysis

Education

- 2008 Habilitation in Mathematics, Free University Berlin
- 2002 PhD in Mathematics, University of Tübingen,
Thesis advisor: Gerhard Huisken
- 1999 Degree in Mathematics (Diplom), University of Tübingen,
Thesis advisor: Gerhard Huisken

Appointments

- 02/2013 - present Associate Professor (Reader) in Pure Mathematics, University College London, UK
- 05/2008 - 01/2013 Junior Research Group Leader, Emmy Noether Program of the German Research Foundation, Free University Berlin, Germany
- 10/2003 - 04/2008 'Assistent', Geometric Analysis Group of K. Ecker, Free University Berlin, Germany
- 10/2002 - 09/2003 Postdoctoral Fellow, ETH Zürich, Switzerland
- 10/2000 - 09/2002 PhD Position, University of Tübingen, Germany

Grants and Awards

- 12/2017 - 09/2019 Royal Society International Exchanges Grant, together with M. Saez as Co-PI (6,000 GBP)
- 05/2018 - 02/2019 Leverhulme Visiting Professorship on behalf of Prof M. Saez to visit UCL (20,050 GBP)
- 01/2018 HIMR focused research grant '*Lagrangian Mean Curvature Flow: Progress and Problems*' as Co-PI, together with J. Lotay (PI) (7,500 GBP)
- 01/2017 - 12/2020 Leverhulme research grant 'Advances in contact topology via Lagrangian mean curvature flow', together with J. Lotay (337,709 GBP)

01/2016 - 05/2016	Eisenbud Research Professorship at MSRI Berkeley
05/2008 - 01/2013	Emmy Noether Fellowship of the German Research Foundation (733,000 EUR)
01/2008 - 03/2010	Feodor Lynen Fellowship of the Alexander von Humboldt Foundation (27,000 EUR)
06/2007 - 06/2009	Project Grant in the Program 'Global Differential Geometry' of the German Research Foundation, joint with O. Schnürer (5,000 EUR)
09/1997 - 08/1999	Travel Grant of the Fulbright Foundation
10/1996 - 04/2000	Fellowship of the German National Academic Foundation

Editorial Boards

Editorial Advisor, Publications of the LMS (Bulletin of the LMS, Journal of the LMS, Proceedings of the LMS), since 2015

Editorial Advisory Board, Geometric Flows, since 2014

Invited Lectures

- 07/2014 ERC School on Geometric Evolution Problems, Centro De Giorgi, Pisa, Italy
- 01/2013 KIAS Winter School in Differential Geometry, Korea

Organised workshops and seminars

- 06/2019 Conference '*Geometric Analysis and General Relativity*' on the occasion of the 60th birthday of G. Huisken at ETH Zürich, together with B. Andrews (ANU Canberra), C. Cederbaum (Tübingen) and J. Metzger (Potsdam)
- 2018 - present Brussels–London Geometry Seminar, with J. Fine (ULB Brussels) and J. Lotay (UCL/Oxford), once per term
- 2018 - present Joint KCL/UCL Geometry Seminar, with Y. Lekili (KCL), weekly
- 01/2018 2 day workshop '*Lagrangian Mean Curvature Flow: Progress and Problems*' at UCL, together with J. Lotay (UCL), funded by the Heilbronn Institute for Mathematical Research
- 2013 - present London Geometric Analysis Reading Seminar, together with C. Bellettini (UCL), J. Lotay (UCL) and H. Ngyuen (QMUL), weekly, UCL
- 05/2013 UCL Geometry and Topology Day 3
- 2008 - 2013 Oberseminar Geometry and Physics, weekly, joint with K. Ecker and G. Huisken, Free University Berlin
- 2004 - 2005 Seminar Wave Equations, weekly, joint with K. Ecker and G. Huisken, Max-Planck-Institute for Gravitational Physics, Potsdam

Publications

- [17] *Ricci flow from spaces with isolated conical singularities*, with P. Gianniotis, arXiv:1610.09753, (2016), to appear in Geom. & Topol.
- [16] *Consequences of strong stability of minimal submanifolds*, with J.D. Lotay, arXiv:1802.023941, (2018), to appear in IMRN.

- [15] *On Short Time Existence for the planar network flow*, with A. Neves and T. Ilmanen, [arXiv:1407.4756](#), (2017), to appear in *J. Diff. Geom.*
- [14] *A local regularity theorem for mean curvature flow with triple edges*, with B. White, [arXiv:1605.06592](#), (2016), to appear in *J. Reine Angew. Math.*
- [13] *Uniqueness of compact tangent flows in Mean Curvature Flow*, *J. Reine Angew. Math.* (690), 163–172 (2014).
- [12] *The Half-Space Property and entire positive minimal graphs in $M \times \mathbb{R}$* , with H. Rosenberg and J. Spruck, *J. Differ. Geom.*, **95** (2), 321–336 (2013).
- [11] *Expanding solitons with non-negative curvature operator coming out of cones*, with M. Simon, *Math. Z.* 275 (1-2), 625–639 (2013).
- [10] *Stability of Hyperbolic space under Ricci-flow*, with O.C. Schnürer and M. Simon, *Comm. Anal. Geom.* **19**, No. 5, 1023–1047 (2011)
- [9] *Foliations of asymptotically flat spacetimes by surfaces of Willmore type*, with T. Lamm and J. Metzger, 2009, *Math. Ann.* **350**, No. 1, 1–78 (2011).
- [8] *Evolution of convex lens-shaped networks under curve shortening flow*, with O.C. Schnürer, M. Saez, A. Azzouani, M. Georgi, J. Hell, N. Jangle, A. Koeller, T. Marxen, S. Ritthaler, and B. Smith, *Trans. Amer. Math. Soc.* **363**, No. 5, 2265–2294 (2011).
- [7] *Stability of Euclidean space under Ricci-flow*, with M. Simon and O.C. Schnürer, *Comm. Anal. Geom.* **16**, No. 1, 127–158 (2008).
- [6] *Self-similarly expanding networks to curve shortening flow*, with O.C. Schnürer, *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (5) Vol. VI* (2007), 511-528.
- [5] *No mass drop for mean curvature flow of mean convex hypersurfaces*, with J. Metzger, *Duke Math. J.*, Vol. 124 (2) (2008), 283–312.
- [4] *Nonlinear evolution by mean curvature and isoperimetric inequalities*, *J. Differ. Geom.* **79** (2008), 197–241.
- [3] *Stability of translating solutions to mean curvature flow*, with J. Clutterbuck and O. C. Schnürer, *Calc. Var. Partial Differential Equations* **29** (2007), no. 3, 281–293.
- [2] *Convexity estimates for flows by powers of the mean curvature*, appendix with O.C. Schnürer, *Ann. Scuol Norm. Sup. Pisa Cl. Sci. (5)*, Vol. V (2006), 261–277.
- [1] *Evolution of convex hypersurfaces by powers of the mean curvature*, *Math. Z.* **251** (2005), no. 4, 721–733.

Preprints

- [3] *Local foliation of manifolds by surfaces of Willmore type*, with T. Lamm and J. Metzger, [arXiv:1806.00465](#), (2018).
- [2] *Remarks on the self-shrinking Clifford Torus*, with C.G. Evans and J.D. Lotay, [arXiv:1802.01423](#), (2018).

- [1] *Optimal isoperimetric inequalities for surfaces in arbitrary codimension in Cartan-Hadamard manifolds*, [arXiv:1802.00226](#), (2018).

Surveys

- [1] *Evolution of networks with triple junctions*, with C. Mantegazza, M. Novaga and A. Pluda, [arXiv:1611.08254](#), (2016).

Invited talks over the last 4 years

- 2019 · Workshop 'Partial Differential Equations', MFO, Oberwolfach, Germany
· Workshop 'Differentialgeometrie im Grossen', MFO, Oberwolfach, Germany
· Conference 'Geometric Analysis and General Relativity', ETH Zürich, Switzerland
· LMS UK-Japan Winter School, Leeds, UK
- 2018 · Colloquium, University of Fribourg, Switzerland
· Workshop 'Mean Curvature and Regularity', Institute of Advanced Studies, Princeton, USA
· Workshop 'Ricci flow, mean curvature flow and related singular flows', University of Hamburg, Germany
· Workshop 'Geometric PDEs in Freiburg', Freiburg, Germany
· Simons Collaboration workshop 'Geometric flows in special holonomy', Imperial College, London, UK
· Workshop 'Geometrie', MFO, Oberwolfach, Germany
· 'Conference on geometric analysis', Tsinghua University, Beijing, China
· Oberseminar Analysis, MPI Leipzig, Germany
· Workshop 'Geometric Evolution Equations', University of Regensburg, Germany
· Workshop 'Geometry: exchanges and perspectives', Institut Henri Poincaré, Paris, France
- 2017 · Workshop 'Geometric flows and related problems', Tokyo Institute of Technology, Japan
· PDE and Real Analysis Seminar, University of Tokyo, Japan
· Workshop 'Geometric Analysis', Centre Henri Lebesgue, Roscoff
· Workshop 'Analysis, Geometry and Topology of Positive Scalar Curvature Metrics', MFO, Oberwolfach, Germany
· Workshop 'Partial Differential Equations', MFO, Oberwolfach, Germany
· Workshop 'Minimal and Evolving Networks', Centro de Giorgi, Pisa, Italy
· Advances in Geometric Analysis, ETH Zürich, Switzerland
· LMS Workshop 'Variational methods in submanifold theory', University of York, UK
- 2016 · Geometric PDE Workshop, University of Warwick, UK
· Oberseminar Geometrie, University of Münster, Germany
· Seminar on Differential Geometry and Analysis, University of Magdeburg, Germany
· Geometry Seminar, Université Pierre et Marie Curie (Jussieu), France
· Geometry Seminar, University of Leeds, UK
· Clay Research Conference, Workshop 'Mean Curvature Flow', Oxford, UK
· Workshop 'Geometrie', MFO, Oberwolfach, Germany
· Differential Geometry and PDE Seminar, UBC Vancouver, Canada

- MSRI Workshop 'Geometric Flows in Riemannian and Complex Geometry', Berkeley, USA.
- Differential Geometry Seminar, UC Irvine, Irvine, USA
- Geometry Seminar, Stanford University, Stanford, USA
- Geometry and Analysis Seminar, UC Santa Cruz, Santa Cruz, USA
- Colloquium, University of Arizona, Arizona,, USA
- 2015 · Workshop 'Differential Geometry in the Large', MFO, Oberwolfach, Germany.
- Forschungseminar 'Mathematische Physik', Marburg University.
- Workshop on Geometric Flows: Recent Developments and Applications, BIRS, Banff, Canada
- Differential Geometry & Geometric Analysis Seminar, Princeton University, USA
- BMC - BAMC 2105, Cambridge, UK
- Topology and Geometry Seminar, Imperial College, London, UK
- Flowers and Friends, Workshop on Geometric Analysis, Frankfurt, Germany