

# 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 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:

- 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  
Editorial Advisory Board, Geometric Flows

## 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:

2013 - present Geometric Analysis Reading Seminar, 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 and Preprints:

- [16] *Ricci flow from spaces with isolated conical singularities*, with P. Gianniotis, [arXiv:1610.09753](#), (2016).
- [15] *A local regularity result for mean curvature flow with triple edges*, with B. White, [arXiv:1605.06592](#), (2016).
- [14] *On Short Time Existence for the planar network flow*, with T. Ilmanen and A. Neves, [arXiv:1407.4756](#), (2014).
- [13] *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).
- [12] *Uniqueness of compact tangent flows in Mean Curvature Flow*, *J. Reine Angew. Math.* (690), 163–172 (2014).
- [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] *No mass drop for mean curvature flow of mean convex hypersurfaces*, with J. Metzger, *Duke Math. J.*, Vol. 124 (2) (2008), 283–312.
- [5] *Nonlinear evolution by mean curvature and isoperimetric inequalities*, *J. Differ. Geom.* **79** (2008), 197–241.

- [4] *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.
- [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. Scuola 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.

### Surveys:

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

### Invited talks over the last 4 years:

- 2017
  - 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
- 2014
  - Workshop on Uniqueness in Analysis and Geometry, MIT, Cambridge, USA

- Oberseminar Analysis und Mathematische Relativitätstheorie, University Tübingen, Germany
- Geometric flows Program, Simons Center, Stony Brook, USA
- Research Seminar Darmstadt-Frankfurt-Mainz, Frankfurt University, Germany
- Joint Analysis Seminar, RWTH Aachen, Germany
- Geometric Analysis and Partial Differential Equations Seminar, University of Cambridge, UK
- Oberseminar Differentialgeometrie, Universität Münster, Germany
- Workshop on Differential Geometry, Maceió, Brasil
- Workshop on Geometric Invariance and nonlinear PDE, Kioloa, Australia
- 2013 · Conference 'Differential Geometry and Analysis', Institut Henri Poincaré, Paris, France
- Workshop 'Geometric variational problems', BIRS, Banff, Canada
- Seminar 'Topics in Geometric Analysis', Albert-Einstein-Institute, Potsdam
- Differential Geometry Conference, ULB Brussels, Belgium
- Mini-Workshop: The Willmore Functional and the Willmore Conjecture, Oberwolfach, Germany
- Advances in Surface Theory, University of Leicester, UK
- Oberseminar Differentialgeometrie, KIT Karlsruhe, Germany
- Modern Topics in Nonlinear Partial Differential Equations: Oxbridge PDE Days, Oxford, UK