

Curriculum Vitae

Personal Information

| | |
|-----------|--|
| Name | Stefan Suhr |
| Address | Fakultät für Mathematik Ruhr-Universität Bochum Universitätsstraße 150 44780 Bochum |
| Telephone | +49 (0)234 32 23343 |
| E-mail | stefan.suhr@ruhr-uni-bochum.de |

Current Occupation

| | |
|-----------------|--|
| Since Oct. 2017 | Scientific staff member and teaching associate (wissenschaftlicher Mitarbeiter) Department of Mathematics, University of Bochum and Principal investigator in the CRC/Transregio 191 “Symplectic Structures in Geometry, Algebra and Dynamics” |
|-----------------|--|

Prior Employment

| | |
|-------------------------|--|
| Sept. 2016 – Sept. 2017 | Scientific staff member and teaching associate (wissenschaftlicher Mitarbeiter), Department of Mathematics, University of Hamburg |
| Sept. 2014 – Aug. 2016 | Research fellow at the ENS Paris and Université Paris Dauphine in the ERC project “Symplectic Aspects of Weak KAM Theory” by Prof. Patrick Bernard |
| April 2014 – Aug. 2014 | Visiting professor (Vertretungsprofessor), Department of Mathematics, University of Cologne |
| Oct. 2011 – March 2014 | Scientific staff member and teaching associate (wissenschaftlicher Mitarbeiter), Department of Mathematics, University of Hamburg |
| April 2011 – Sept. 2011 | substitute associate professor (Vertretung Juniorprofessur), Department of Mathematics, University of Hamburg |
| April 2010 – March 2011 | Scientific staff member and teaching associate (wissenschaftlicher Mitarbeiter), Department of Mathematics, University of Regensburg |
| Oct. 2004 – March 2010 | Scientific staff member and teaching assistant (wissenschaftlicher Mitarbeiter), Department of Mathematics, University of Freiburg |

Habilitation

- May 2019 Abilitazione Scientifica Nazionale, Settore Concorsuale
01/A2 Geometria e Algebra
- July 2018 Habilitation in Mathematics at the University of Hamburg

Dissertation

- Oct. 2010 “Maximal Geodesics in Lorentzian Geometry”
Supervisors: Prof. Dr. Victor Bangert (Freiburg), Prof. Dr.
Bernd Ammann (Regensburg)
Grade: Magna cum laude (1.3)

Mathematical Working Areas

Closed geodesics and Zoll manifolds
Theory of optimal transportation and geometric calculus of
variations
Lorentzian geometry and mathematical problems in general
relativity
Symplectic and contact geometry and theory of polyfolds

Publications

- (1) J. Hedicke, –. *Conformally embedded spacetimes and the space of null geodesics*. to appear in Comm. Math. Phys.
- (2) *Aubry-Mather theory for Lorentzian manifolds*. J. Fixed Point Theory Appl.(2019) 21: 71, <https://doi.org/10.1007/s11784-019-0707-x>.
- (3) U. Frauenfelder, C. Lange, –. *A Hamiltonian version of a result of Gromoll and Grove*. Ann. Inst. Fourier (Grenoble) **69** (2019), 409–419.
- (4) M. Mazzucchelli, –. *A characterization of Zoll Riemannian metrics on the 2-sphere*. Bull. Lond. Math. Soc. **50** (2018), 997–1006.
- (5) *Theory of optimal transport for Lorentzian cost functions*. Münster J. Math. **11** (2018), 13–47.
- (6) P. Bernard, –. *Lyapounov functions of closed cone fields: from Conley theory to time functions*. Comm. Math. Phys. **359** (2018), 467–498.
- (7) –, K. Zehmisch. *Polyfolds, cobordisms, and the strong Weinstein conjecture*. Adv. Math. **305** (2017), 1250–1267.

- (8) V. Cortés, M. Nardmann, –. *Completeness of hyperbolic centroaffine hypersurfaces*. *Comm. Anal. Geom.* **24** (2016), no. 1, 59–92.
- (9) P. Mounoud, –. *On spacelike Zoll surfaces with symmetries*. *J. Differ. Geom.* **102** (2016), 243–284.
- (10) –, K. Zehmisch. *Linking and closed orbits*. *Abh. Math. Sem. Hamburg* **86** (2016), 133–150.
- (11) *A Counterexample to Guillemin’s Zollfrei conjecture*. *J. Topol. Anal.* **05** (2013), 251–260.
- (12) P. Mounoud, –. *Pseudo-Riemannian geodesic foliations by circles*. *Math. Z.* **274** (2013), 225–238.
- (13) *Closed geodesics in Lorentzian surfaces*. *Trans. Amer. Math. Soc.* **365** (2013), 1469–1486.
- (14) *Class A spacetimes*. *Geom. Dedicata* **160** (2012), 91–117.
- Proceedings (with peer review) (15) P. Bernard, –. *Smoothing causal functions*. *Journal of Physics: Conference Series* **968** no. 1 (2018), 012001.
- (16) V. Cortés, M. Dyckmanns, –. *Completeness of projective special Kähler and quaternionic Kähler manifolds*. in: Chiossi S., Fino A., Musso E., Podestà F., Vezzoni L. (eds) *Special Metrics and Group Actions in Geometry*. Springer INdAM Series **23** (2017), 81–106.
- (17) *Homologically Maximizing geodesics in conformally flat tori*. *AMS/IP Stud. Adv. Math.* **49** (2011), 125–143.

Invited Talks

- | | |
|----------------|---|
| April 2019 | Conference <i>Optimal Transport and Geometric Analysis</i> , Palazzo Pesaro-Papafava, Venice |
| June 2018 | Conference <i>IX. International Meeting on Lorentzian Geometry</i> , Banach Center, Warsaw |
| March 2018 | Workshop <i>Field Equations on Lorentzian Space-Times</i> , University of Hamburg |
| June 2017 | Workshop <i>Non-Regular Spacetime Geometry</i> , University of Florence |
| January 2015 | Mini course <i>Aubry-Mather-Theory for Relativistic Lagrangians</i> , Nanjing University |
| January 2015 | Workshop <i>Hamiltonian Dynamical Systems</i> , Fudan University |
| April 2014 | Conference <i>Beyond Hamilton-Jacobi in Avignon</i> , University of Avignon |
| July 2013 | Conference <i>VII. International Meeting on Lorentzian Geometry</i> , University of São Paulo |
| September 2012 | Fall school <i>The h-principle</i> , Les Diablerets |

June 2011 | Workshop *Calibrations and Laminations*, University of Freiburg

Teaching Experience

| | |
|-------------------------|--|
| Summer semester 2018 | Lecture course <i>Curves and Surfaces</i> (Bochum) |
| Winter semester 2017/18 | Lecture course <i>Morse theory</i> (Bochum) |
| Winter semester 2016/17 | Lecture course <i>Mathematics for Students of Wood Sciences and Students of Geoscience I</i> and organization and conduct of the exercises to the lecture course <i>G-Structures</i> (Hamburg) |
| Winter semester 2015/16 | Groupe du lecture <i>Géométrie différentielle élémentaire</i> (ENS Paris) |
| Summer semester 2014 | Lecture course <i>Topology and Dynamical Systems</i> and seminar <i>Hyperbolic Geometry</i> (Cologne) |
| Summer semester 2013 | Lecture course <i>Mathematics for Students of Wood Sciences II</i> and undergraduate seminar <i>Differential Geometry of Curves and Surfaces</i> (Hamburg) |
| Winter semester 2012/13 | Lecture course <i>Mathematics for Students of Wood Sciences and Students of Geoscience I</i> (Hamburg) |
| Summer semester 2012 | Lecture course <i>Introduction to the h-Principle</i> (Hamburg) |
| Summer semester 2011 | Lecture course <i>Differential Geometry</i> (Hamburg) |

**List of the ten most relevant publications
of Stefan SUHR**

- [1] J. Hedicke, Suhr, S. *Conformally embedded spacetimes and the space of null geodesics*. to appear in Comm. Math. Phys.
- [2] Frauenfelder, U., Lange, C., Suhr, S. *A Hamiltonian Version of a Result of Gromoll and Grove*. Ann. Inst. Fourier (Grenoble) **69** (2019), no. 1, 409–419.
- [3] Suhr, S. *Theory of Optimal Transport for Lorentzian Cost Functions*. Münster J. Math. **11** (2018), 13–47.
- [4] M. Mazzucchelli, Suhr, S. *A characterization of Zoll Riemannian metrics on the 2-sphere*. Bull. Lond. Math. Soc. **50**
- [5] Bernard, P., Suhr, S. *Lyapounov Functions of closed Cone Fields : from Conley Theory to Time Functions*. Commun. Math. Phys. **359** (2018), 467–498.
- [6] Suhr, S., Zehmisch, K. *Polyfolds, Cobordisms, and the Strong Weinstein Conjecture*. Adv. Math. **305** (2017), 1250–1267.
- [7] Mounoud, P., Suhr, S. *On Spacelike Zoll Surfaces with Symmetries*. J. Differ. Geom. **102** (2016), 243–284.
- [8] Suhr, S. *A Counterexample to Guillemin’s Zollfrei Conjecture*. J. Top. Anal. **5** (2013), 261-270.
- [9] Mounoud, P., Suhr, S. *Pseudo-Riemannian Geodesic Foliations by Circles*. Math. Z. **274** (2013), 225–238.
- [10] Suhr, S. *Closed Geodesics in Lorentzian Surfaces*. Trans. Amer. Math. Soc. **365** (2013), 1469–1486.

