

Fakultät für Mathematik.
Goethe Universität Frankfurt
Robert-Mayer-Str. 10
60325 Frankfurt am Main, Germany
(+49) 69 798 22564
madani@math.uni-frankfurt.de
<http://www.math.uni-frankfurt.de/~madani>

PROFESSIONAL EXPERIENCE

from 05.2015 Research and teaching assistant, University of Frankfurt, Germany.
03.2013 - 06.2015 Research and teaching assistant, University of Regensburg, Germany.
10.2010 - 02.2013 Alexander von Humboldt fellow, University of Regensburg.
3 Months in 2011 Leibniz fellow, Mathematisches Forschungsinstitut, Oberwolfach.
10.2009 - 09.2010 Research and teaching assistant, Université Pierre et Marie Curie, France.
10.2006 - 09.2009 PhD fellow, Université Pierre et Marie Curie.

EDUCATION

Sep. 2009 **Ph.D. in Mathematics.** Université Pierre et Marie Curie, Paris.
 Advisor: Thierry Aubin
 Thesis: The Yamabe problem with singularities and Hebey–Vaugon conjecture.
2006–2009 Ph.D. student in Mathematics. Université Pierre et Marie Curie.
2004–2006 Master degree in pure Mathematics. Université Pierre et Marie Curie.
2003–2004 Bachelor degree in pure Mathematics. Université Pierre et Marie Curie.

MAJOR AREA OF RESEARCH

Geometric analysis, differential and algebraic geometry.

RESEARCH ACTIVITIES

Published articles

1. Farid Madani, Andrei Moroianu and Mihaela Pilca, *On toric locally conformally Kähler manifolds.* to appear in Ann. Glob. Anal. Geom. (2017). DOI: 10.1007/s10455-017-9545-5. arXiv:1611.01707.
2. Bernd Ammann, Farid Madani and Mihaela Pilca, *S^1 -equivariant Yamabe invariant of 3-manifolds.* To appear in Int. Math. Res. Notices. (2016). DOI: 10.1093/imrn/rnw194. arXiv:1508.02727.
3. Farid Madani, *A detailed proof of a theorem of Aubin,* J. Geom. Anal. **26** (2016), no. 1, 231–251.
4. Farid Madani and Mounir Nisse, *Analytic varieties with finite volume amoebas are algebraic,* J. reine angew. Math. 706 (2015), 67-81.

5. Farid Madani and Mounir Nisse, *Generalized logarithmic Gauss map and its relation to (co)amoebas*. Mathematische Nachrichten 286, No. 14-15, 1510-1513 (2013).
6. Farid Madani and Mounir Nisse, *On the volume of complex amoebas*. Proc. Amer. Math. Soc. 141 (2013) 1113–1123.
7. Olivier Biquard and Farid Madani, *A construction of conformal-harmonic maps*. C. R. Acad. Sci. Paris, Ser. I 350 (2012) 967–970.
8. Farid Madani, *Hebey–Vaugon conjecture II*. C. R. Acad. Sci. Paris, Ser. I 350 (2012) 849–852.
9. Farid Madani, *Equivariant Yamabe problem and Hebey–Vaugon conjecture*. J. Func. Anal. 258 (2010) 241–254.
10. Farid Madani, *Le problème de Yamabe avec singularités*. Bull. Sci. Math. 132 (2008) 575–591.

Preprints

1. Guillermo Henry and Farid Madani, *Equivariant Second Yamabe Constant*. arXiv:1612.03119.
2. Farid Madani, Andrei Moroianu and Mihaela Pilca, *Conformally related Kähler metrics and the holonomy of lcK manifolds*. arXiv:1511.09212.
3. Farid Madani, Lamine Nisse and Mounir Nisse, *A tropical characterization of complex analytic varieties to be algebraic*, arXiv:1407.6459.

Proceedings

1. Farid Madani, *Recent Progress on the Equivariant Yamabe Problem*. Mathematisches Forschungsinstitut Oberwolfach Report 11 (2014).
2. Farid Madani, *Some applications of optimal constants for nonlinear PDEs on manifolds*. Mathematisches Forschungsinstitut Oberwolfach Report 7 (2010).
3. Farid Madani, *Equivariant Yamabe problem and Hebey–Vaugon conjecture*. Mathematisches Forschungsinstitut Oberwolfach Report 6 (2009).
4. Farid Madani, *The Yamabe problem with singularities*. 3rd Nordic EWM Summer School for Ph.D. students in Mathematics (A. Ernvall-Hytönen, C. Hollanti), TUCS 53 (2009) 156-167.

Invited Talks in International Conferences and Seminars

- | | |
|------------------|--|
| Sep. 17-18, 2015 | Séminaire de géométrie CORP, Seillac, France. |
| Aug 3-7, 2015 | Minisymposia on the Geometry and Topology of (Co)Amoebas and Beyond. Korean Institut of Advanced Studies, Korea. |
| July 31, 2015 | Geometric Analysis Seminar, KIAS, Korea. |
| Aug. 3-9, 2014 | Analysis, Geometry and Topology of Positive Scalar Curvature Metrics Workshop. Mathematisches Forschungsinstitut Oberwolfach, Germany. |
| Mar. 28, 2013 | Séminaire de géométrie et analyse. Université Nice Sophia Antipolis, France. |
| Jan. 31, 2013 | Séminaire de théorie spectrale et géométrie. Université Joseph Fourier, France. |

- Dec. 6, 2012 Tropical geometry seminar. University of Saarland, Germany.
- Oct. 22-26, 2012 Recent developments in conformal geometry. Université de Nantes, France.
- Sep. 17-20, 2012 German Mathematical Society annual meeting, section geometry and topology. University of Saarland, Germany.
- Jun. 1, 2011 Mathematics Seminar. University of Patras, Greece.
- Mar. 29, 2011 Differential Geometry seminar. Université Henri Poincaré Nancy, France.
- Jan. 21, 2011 Algèbre et géométrie seminar. Université de Bretagne Occidentale, Brest, France.
- Nov. 20, 2010 Analysis seminar. Auburn University, USA.
- Apr. 6, 2010 Geometric Analysis Seminar. University of Oregon, USA.
- Apr 2, 2010 Differential Geometry Seminar. University of California Riverside, USA.
- Feb. 9, 2010 Optimal Constants in the Theory of Sobolev Spaces and PDEs workshop at Mathematisches Forschungsinstitut Oberwolfach, Germany.
- Dec. 19, 2009 Geometric Analysis Seminar at Universitat de València, Spain.
- Jun. 22-27, 2009 The 3rd Nordic EWM Summer School at University of Turku, Finland.
- May 19, 2009 Topological and Variational Methods for Partial Differential Equations workshop at Mathematisches Forschungsinstitut Oberwolfach, Germany.
- Apr. 23, 2009 The Twelfth New Mexico Analysis Seminar at the University of New Mexico, Albuquerque, USA.
- Aug. 23, 2008 The 7th International Conference on Function Spaces, Differential Operators and Nonlinear Analysis (FSDONA) at Helsinki, Finland.

Visits and participation in conferences

- Mar. 21-25, 2016 Kähler Geometry, Einstein Metrics, and Generalizations. UC Berkeley, USA.
- Jun. 29-Jul. 9, 2015 PIMS Symposium on the Geometry and Topology of Manifolds. Vancouver, Canada.
- Oct. 6-10, 2014 Spinorial Geometry and Analysis on Manifolds Conference. CIRM Marseille, France.
- Aug. 5-10, 2012 Recent Trends in Geometric and Nonlinear Analysis, Banff International Research Station, Canada.
- Jul. 29-Aug. 3, 2012 Conformal and CR Geometry, Banff International Research Station, Canada.
- Jul. 16-20, 2012 Kähler Geometry and Quantization, Summer school in Cologne, Germany.
- Jul. 3-Aug. 13 December 2011: Research stay at Mathematisches Forschungsinstitut Oberwolfach, Germany.
- Jun. 12-17, 2011 Geometric and Nonlinear Analysis: meeting in Lorraine, Université Henri Poincaré Nancy, France.
- May 2011 Visit to University of Patras, Greece.
- Sep. 28-Oct. 1, 2010 Quantum Field Theory and Gravity, Universität Regensburg, Germany.
- Jun-Jul. 2010 Visit to Universidade Federal d'Alagoas (UFAL), Brazil.
- Nov. 30-Dec. 4, 2009 Tropical Structures in Geometry and Physics, University of California-Berkeley, USA.
- May 26-29, 2009 The 4th Symposium on Analysis & PDEs, Purdue University, USA.
- Sep. 26-28, 2008 Fourth Yamabe Memorial Symposium, University of Minnesota, USA.
- May 28-30, 2008 Geometry, Topology QFT and Cosmology Workshop, Observatoire de Paris, France.

- Jul. 23-Aug. 10, 2007 MSRI Summer Microprogram on Nonlinear Partial Differential Equations, UC Berkeley, USA.
 Jun. 18-22, 2007 International Conference in Mathematics in honor of Gennadi Henkin, IHP, Paris, France.

Talks and Participation in Research Work Groups

- Win. Term 2014 Lie Groups and representation theory.
 Sum. Term 2014 Spectral Geometry.
 Win. Term 2013 General Relativity and Recent Developments
 Sum. Term 2013 Symplectic Geometry.
 Win. Term 2012 Seiberg–Witten Theory.
 Sum. Term 2012 Approaches to Quantization of Space-Time.
 Mar. 26-30, 2012 Surgery Theory (Intensive program).
 Win. Term 2011 The h-Cobordism Theorem.
 Win. Term 2010 Ricci Flow and the Sphere Theorem.

TEACHING

Lectures:

- Win. Term 2014 Preparation Lecture for the State Examination in Analysis.
 Win. Term 2013 Preparation Lecture for the State Examination in Analysis.

Exercise sessions for the following lectures:

- | | | |
|----------------|--|-----------------|
| Win. Term 2016 | Linear PDE and Functional Analysis | Uni. Frankfurt |
| Sum. Term 2016 | Nonlinear PDE and Functional Analysis. | Uni. Frankfurt |
| Win. Term 2015 | Complex Analysis and Integration Theory. | Uni. Frankfurt |
| Sum. Term 2015 | Linear PDE and Distribution Theory. | Uni. Frankfurt |
| Sum. Term 2014 | Analysis II. | Uni. Regensburg |
| Sum. Term 2013 | Elementary Geometry. | Uni. Regensburg |
| Win. Term 2012 | Measure and Function Theory. | Uni. Regensburg |
| Sum. Term 2012 | Analysis II for Physicists. | Uni. Regensburg |
| Win. Term 2011 | Measure and Function Theory. | Uni. Regensburg |
| 2009–2010 | Series and Integrals. | Uni. Paris 6 |
| 2007–2009 | Functions of Several Variables. | Uni. Paris 6 |
| 2006–2007 | Functions of One Real Variable. | Uni. Paris 6 |

LANGUAGES

- English, Arabic and German fluently read and spoken.
 French, Berber native languages.