

Jean-Marc Schlenker

- Born 05/31/1968 in Grenoble (France), french citizen. Married, 3 children : Liséa, born 19/01/2011, Arthur and Gaspard, both born 3/12/2012.
- Professional address : University of Luxembourg, Campus Kirchberg, Mathematics Research Unit, BLG, 6, rue Richard Coudenhove-Kalergi, L-1359 Luxembourg. Email : jean-marc.schlenker@uni.lu; <http://math.uni.lu/schlenker>.

Education

- 1/17/2000 : defence of the "habilitation", Université Paris-Sud (Orsay).
- 9/1992-8/1995 : PhD, Ecole Polytechnique. Advisor : François Labourie. Title : isometric immersions of surfaces. Defended 12.12.1994.
- 9/1991-7/1992 : D.E.A. (master) d'Analyse Non-Linéaire Appliquée at the Ecole Polytechnique and at the Université Paris IX (Dauphine). "Stage de D.E.A." at the Ecole Polytechnique under the supervision of François Labourie on isometric immersions.
- 9/1989-7/1991 : Undergraduate studies at Ecole Polytechnique.

Employment

- 4/2013-... : Professor, University of Luxembourg.
- 9/2000-... : Professor, Université Toulouse III. "1st class" since 9/2005. "délégation" to CNRS (one semester each) in 2004-05, 2007-08, 2011-12. On leave since 2013.
- 9/1999-8/2000 : "détachement" to CNRS; visit to FIM, ETH Zürich.
- 9/1995-8/1999 : Maître de conférences, Université Paris-Sud (Orsay).

Main administrative responsibilities

- *President of the "Comité de suivi de la loi LRU"*, 2/2011-1/2013. The organization of french universities was deeply changed in 2007 when a new law, called LRU for "Libertés Responsabilités des Universités" was voted, giving in particular more autonomy to universities. The law created a committee to oversee the application of the law and make recommendations on its application and adaptation. It was composed of 12 independent personalities (mostly academics), 2 members of the Senate and 2 members of Parliament. It produced each year a report, distributed to the members of Parliament. I was named to this committee on Jan 2010, and have chaired it from Feb 2011 to its end in Jan 2013, after the previous president, Claire Bazy-Malaurie, was named to the french Supreme Court (Conseil Constitutionnel).
- Deputy director of Institut de Mathématiques de Toulouse, 1/2011-12/2012. This is a large research institute (over 180 researchers with permanent positions, over 100 graduate students) regrouping mathematicians from the 3 Toulouse universities and one engineering school (INSA).

Main scientific responsibilities

- Coordinator of the Fermat prize for the 2009 edition. The Fermat prize is a research prize in mathematics, awarded every other year in one of three areas (variational principles, number theory, probabilities). Recent laureates were A.J. Wiles (1995) - M. Talagrand (1997) - F. Bethuel, F. Hélein (1999) - R. L. Taylor, W. Werner (2001) - L. Ambrosio (2003) - P. Colmez, J.-F. Le Gall (2005) - C. Khare (2007) - E. Lindenstrauss, C. Villani (2009).
- Member of C.N.U. (Conseil National des Universités), 2007-2010. C.N.U. is responsible for giving the possibility to apply to positions in France (qualification) and also for half the promotions of faculty in the country.
- Member of the AERES (french evaluation agency) evaluation committees of the mathematics labs at *Ecole Polytechnique* (CMLS & CMAP), 2008, *Ecole Normale Supérieure* (DMA), 2009, *Ecole Normale Supérieure de Lyon* (UMPA), 2010, and *Fondation des Sciences Mathématiques de Paris* (FSMP), 2013, *Institut Fourier* (Grenoble), 2015.
- Associate editor since 2009, and co-Editor in Chief since 1/2013, of *Geometriae Dedicata*. Previously, associate editor of *Annales de la Faculté des Sciences de Toulouse, mathématiques*, 2002-05.
- Member of the quadrennial evaluation committee of mathematics departments in Portugal, organized by FCT in 2008. Member of the FCT grant evaluation committee in 2009, and president of this committee in 2011.
- Member (2013-2016) of the Mathematics and Statistics Evaluation Group of the Natural Sciences and Engineering Research Council of Canada (NSERC).
- Since 2000, I've done a number of scientific evaluations for the french ministry of research. In particular I was on the committee for the PEDR, later renamed PES (a supplement to the salary attributed for 4 years to the most active researchers) in pure and applied mathematics in 2001, 2002, 2003, 2006, 2007, 2009, and president of this committee in 2010.
- regular activity of international evaluations (for instance DFG panel for a planned “Trans-regional Collaborative Research Centre” in 2011 and 2012, reports for funding agencies in various countries, etc).
- I regularly write referee reports or screening advices for various mathematical journals, for instance *Acta Mathematica*, *Duke Math. J.*, *Inventiones math.*, *J. Differential Geom.*, *J. Amer. Math. Soc.*, etc.

Organization of scientific events

- Workshop “Regards croisés sur les structures géométriques et la géométrie lorentzienne”, Avignon, Sept 8-10, 2014.
- Scientific committee, program on Teichmüller theory and 3-dimensional geometry, Centro di Giorgi, Italy, May-June 2014.
- Co-organizer (with Bill Goldman, Olivier Guichard, Anna Wienhard) of a trimester on *Geometry and analysis of surface group representations*, I.H.P., Jan-Mar 2012.
- Workshop “Immersed surfaces in 3-manifolds”, IHP, Mar 26-30, 2012.
- Conférence “Surface groups in Paris”, IHP, 2/2012.
- Conference “SPK 60” for the 60th birthday of Steve Kerckhoff, Luminy, June 2011.

- “Analysis and geometry of surface group representations”, 20-25/3/2011, Autrans, France.
- Conference “Teichmüller Theory and its Interactions in Mathematics and Physics”, 6-7/2010, CRM, Bellaterra, Spain
- Summer school and workshop on Einstein metrics, Nantes, 27/6-03/7/2009.
- Program “Geometry, Topology and Dynamics of Character Varieties”, 18 June 2010 – 15 Aug 2010, Institute of Mathematical Sciences (IMS), National University of Singapore (included a workshop and a conference which were satellite events of ICM 2010).
- “Geometric Structures in 2 and 3 dimensions”, 17-22/01/2010, Autrans, France.
- “Variétés d’Einstein et au-delà”, C.I.R.M., 26-30 nov. 2007.
- “Premier congrès Canada-France des sciences mathématiques”, 12-15 juillet 2004, Toulouse.
- “Colloque Fermat”, Toulouse, Oct. 2001.

Teaching experience

Various teaching since 9/1995, at every level from first-year to graduate courses. Advising of several research projects at the undergraduate or master’s level.

Doctoral supervision

- Jérémy Toulisse, 9/2012-..., on 3-dimensional AdS manifolds with cone singularities.
- Boubacar Diallo, 9/2007-11/2014, on convex cores of globally hyperbolic anti-de Sitter manifolds. Boubacar should defend in late 2014.
- Dmitriy Slutskiy, 9/2008–10/2013, on hyperbolic manifolds with convex boundary. Co-direction with Victor Alexandrov (Novosibirsk). Dmitriy was in Novosibirsk for the beginning of his PhD but was in Toulouse during the academic years 2010-11 and since 2011-12. Since 10/2013, Dima has a 2-year postdoctoral position in Strasbourg.
- Brice Loustau, 9/2008–07/2011, on the complex symplectic structure of the space of quasifuchsian representations. Brice held a 3-years ERC postdoctoral position at Orsay from 9/2011, and now has a postdoctoral position at IMPA (Rio, Brazil).
- François Fillastre, 2002-2006, on fuchsian isometric embeddings of surfaces. Currently Maître de Conférences at Cergy University. Co-direction with Bruno Colbois (Neuchatel).
- Grégoire Montcouquiol, 2001-2005, on deformations of singular Einstein manifolds. Currently Maître de Conférences at Université Paris-Sud (Orsay).

Grants and funding

- University of Luxembourg internal grant, 2014-2017 (304kE).
- Member of the GEAR NSF research network (2011-2015).
- Coordinator of the A.N.R. program “ETTT”, 2009-13 (total funding 188kE).
- Member (15 %) of the A.N.R. program “Flows and Operators in Geometry”, 2007-10.
- Research project on polyhedral geometry, with Igor Pak (then at MIT, now at UCLA) supported by the M.I.T.-France seed fund, 2007.
- Member (65%, in charge of the Toulouse node) of an ANR program on “Higher Teichmüller theory”, 2006-09.

- Member (33%) of the A.N.R. program “geometry of non-compact or singular Einstein metrics”, 2006-09.
- Coordinator of a “ACI jeune chercheur” program on “Special metrics on manifolds with boundary”, 2003-06.

Outreach and general audience communication

- Since it’s creation in 2007 I have been involved *nonfiction.fr*, a website with a wide audience publishing book reviews on a daily basis. From 2007 to 2010 I have coordinated the science part of the project.
- From March 2008 to December 2010 I wrote monthly (in principle) columns in *La Tribune*, one of the main national daily newspapers in France, on themes related to research and higher education.

Miscellaneous

Fluent in french and english. Basic written and spoken german. Basic understanding of italian (needs brushing up). Good programing skills (mostly python, sagemath). “Chevallier de l’Ordre National du Mérite” (11/2010).

Publication list

Articles (mathematics)

- A 1** Compactly supported bidimensional wavelet bases with hexagonal symmetry. A. Cohen and J.-M. Schlenker. *Constructive Approximation*, 9 :209–236, 1993.
- A 2** Surfaces convexes dans des espaces lorentziens à courbure constante. J.-M. Schlenker. *Commun. Anal. and Geom.*, 4 :285–331, 1996.
- A 3** Métriques sur les polyèdres hyperboliques convexes. J.-M. Schlenker. *Journal of Differential Geometry*, 48(2) :323–405, 1998.
- A 4** Représentations de surfaces hyperboliques complètes dans H^3 . J.-M. Schlenker. *Annales de l'Institut Fourier*, 48(3) :837–860, 1998.
- A 5** Généricité des hypothèses de non focalisation. N. Burq and J.-M. Schlenker. Annexe à *Contrôle de l'équation des ondes dans des ouverts peu réguliers*, N. Burq, *Bulletin de la S.M.F.* 126 (1998), 601–637.
- A 6** The Schläfli formula in Einstein manifolds with boundary. I. Rivin and J.-M. Schlenker. *Electronic Research Announcements of the A.M.S.* 5 (1999) 18-23.
- A 7** Dihedral angles of convex polyhedra. J.-M. Schlenker. *Discrete Comput. Geom.*, 23(3) :409–417, 2000.
- A 8** Surfaces convexes fuchsiennes dans les espaces lorentziens à courbure constante. F. Labourie and J.-M. Schlenker. *Math. Annalen* 316 (2000) 3, 465-483.
- A 9** Surfaces à courbure extrinsèque négative dans l'espace hyperbolique. J.-M. Schlenker. *Annales Scientifiques de l'E.N.S.* 34(2001) :1, 79-130.
- A 10** Convex polyhedra in Lorentzian space-forms. J.-M. Schlenker. *Asian Journal of Math.* 5(2001) :2, 327-364.
- A 11** Einstein manifolds with convex boundaries. J.-M. Schlenker. *Commentarii Mathematici Helvetici* 76(2001) :1, 1-28.
- A 12** Hypersurfaces in H^n and the space of its horospheres. J.-M. Schlenker. *Geom. Funct. Anal.* 12(2002) :2 pp. 395-435.
- A 13** Higher Schläfli formulas and applications. J.-M. Schlenker and R. Souam. *Compositio Mathematica* 135(2003) :1, 1-24.
- A 14** Rhombic embeddings of planar quad-graphs. Richard Kenyon, Jean-Marc Schlenker. math-ph/0305057, 2003. *Trans. Amer. Math. Soc.* 357 (2005), 3443-3458.
- A 15** A rigidity criterion for non-convex polyhedra. Jean-Marc Schlenker. math.DG/0301333, 2003. *Discrete Comput. Geom.* 33 (2005) :2, 207-221.
- A 16** Hyperideal circle patterns. Jean-Marc Schlenker. math.GT/0407043, 2004. *Math. Res. Lett.* 12 (2005) :1, 85-102.
- A 17** Hyperbolic manifolds with convex boundary. Jean-Marc Schlenker. math.DG/0205305, 2002. *Inventiones mathematicae* 163(2006) :1, 109-169.

- A 18** Jean-Marc Schlenker. Small deformations of polygons and polyhedra. *Trans. Amer. Math. Soc.* 359 (2007), 2155-2189. [math.DG/0410058](#).
- A 19** Minimal surfaces and particles in 3-manifolds. Kirill Krasnov and Jean-Marc Schlenker. [math.DG/0511441](#), 2005. *Geometriae dedicata* 126 :1 (2007), 187-254.
- A 20** Notes on a paper of Mess. Lars Andersson, Thierry Barbot, Riccardo Benedetti, Francesco Bonsante, William M. Goldman, François Labourie, Kevin P. Scannell, Jean-Marc Schlenker. *Geometriae Dedicata* 126 :1 (2007), 47-70.
- A 21** On the renormalized volume of hyperbolic 3-manifolds. Kirill Krasnov, Jean-Marc Schlenker. [math.DG/0607081](#). *Comm. Math. Phys.* 279 :3 (2008), 637-668.
- A 22** Circle patterns on singular surfaces. Jean-Marc Schlenker. [math.DG/0601631](#). *Discr. Comput. Geom.* 40(2008) :1, 47-102.
- A 23** Higher Schläfli formulas II. Vector-valued differential relations. Jean-Marc Schlenker, Rabah Souam. [math.DG/0611499](#). *Intern. Math. Res. Notices*, IMRN 2008, Art. ID rnn 068, 44 pp.
- A 24** AdS manifolds with particles and earthquakes on singular surfaces. Francesco Bonsante, Jean-Marc Schlenker. [math.GT/0609116](#). *Geom. Funct. Anal.* 19 :1 (2009) 41–82.
- A 25** On the infinitesimal rigidity of weakly convex polyhedra. Robert Connelly and Jean-Marc Schlenker. [math.DG/0606681](#). *European Journal of Combinatorics* 31(2010) :4, 1080-1090.
- A 26** Quasifuchsian manifolds with particles. Sergiu Moroianu, Jean-Marc Schlenker. *Journal of Differential Geometry* 83 :1 (2009), 75-129.
- A 27** On weakly convex star-shaped polyhedra. Jean-Marc Schlenker. [arXiv :0704.2901](#). *Discrete Mathematics* 309(2009) :20, 6139-6149.
- A 28** Representations of quantum permutation algebras. Teodor Banica, Julien Bichon, Jean-Marc Schlenker. [arXiv :0901.2331](#). *J. Funct. Anal.* 257 (2009), 2864-2910.
- A 29** A symplectic map between hyperbolic and complex Teichmüller theory. Kirill Krasnov, Jean-Marc Schlenker. [arXiv :0806.0010](#). *Duke Mathematical Journal* 150(2009) :2, 331-356.
- A 30** Profiles of inflated surfaces. Igor Pak, Jean-Marc Schlenker. [arXiv :0907.5057](#). *Journal of Nonlinear Mathematical Physics* 17 :2 (2010) 145–157.
- A 31** On the infinitesimal rigidity of polyhedra with vertices in convex position. Ivan Izvestiev, Jean-Marc Schlenker. [arXiv :0711.1981](#). *Pacific J. Math.* 248(2010) :1, 171-190.
- A 32** The Weil-Petersson metric and the renormalized volume of hyperbolic 3-manifolds. Kirill Krasnov and Jean-Marc Schlenker. in Handbook of Teichmüller theory. Volume III, Vol. 17 of *IRMA Lect. Math. Theor. Phys.*, 779–819, Eur. Math. Soc., Zürich (2012).
- A 33** Multi Black Holes and Earthquakes on Riemann surfaces with boundaries. Francesco Bonsante, Kirill Krasnov, Jean-Marc Schlenker. [math.GT/0610429](#). *Intern. Math. Res. Not.* 2010, doi : 10.1093/imrn/rnq070.
- A 34** On orthogonal matrices maximizing the 1-norm. Teodor Banica, Benoit Collins, Jean-Marc Schlenker. [arXiv :0901.2923](#). *Indiana Univ. Math. J.* 59(2010) :3, 839–856.

- A 35** Maximal surfaces and the universal Teichmüller space. Francesco Bonsante, Jean-Marc Schlenker. arXiv :0911.4124. *Inventiones Math.* 182(2010) :279-333.
- A 36** On polynomial integrals over the orthogonal group. Teodor Banica, Benoit Collins, Jean-Marc Schlenker. arXiv :0910.1258. *J. Combinatorial Theory A* 118 :3 (2011), 778-795.
- A 37** Volume maximization and the extended hyperbolic space. Feng Luo, Jean-Marc Schlenker. arXiv :0908.2023. *Proc. Amer. Math. Soc.* 140 :3 (2012) 1053–1068.
- A 38** Combinatorial aspects of orthogonal group integrals. Teodor Banica, Jean-Marc Schlenker. arXiv :1011.2454. *Intern. J. Math.* 22 :11 (2011), 1611–1646.
- A 39** Fixed points of compositions of earthquakes. Francesco Bonsante, Jean-Marc Schlenker. *Duke Math. J.* 161 :6 (2012) 1013–1056.
- A 40** Collisions of particles in locally AdS spacetimes I. Local description and global examples. Thierry Barbot, Francesco Bonsante and Jean-Marc Schlenker. arXiv :1010.3602. *Comm. Math. Phys.* 308 (2011) :1, 147-200.
- A 41** Flippable tilings of constant curvature surfaces. François Fillastre, Jean-Marc Schlenker. arXiv :1012.1594. *Illinois J. Math.* 56 :4(2012), 1213-1256.
- A 42** Non-rigidity of spherical inversive distance circle packings. Jiming Ma, Jean-Marc Schlenker. arXiv :1105.1469. *Discrete and Computational Geometry* 47 :3 (2012), 610–617.
- A 43** A cyclic extension of the earthquake flow. Francesco Bonsante, Gabriele Mondello, Jean-Marc Schlenker. arXiv :1106.0525. *Geometry and Topology* 17 (2013) :1, 157–234.
- A 44** Collisions of particles in locally AdS spacetimes II. Moduli of globally hyperbolic spaces. Thierry Barbot, Francesco Bonsante, Jean-Marc Schlenker. arXiv :1202.5753. *Comm. Math. Phys.* 327(2014) :3, 691-735.
- A 45** The renormalized volume and the volume of the convex core of quasifuchsian manifolds. Jean-Marc Schlenker. arXiv :1109.6663. *Math. Research Letters*, 20 (2013) :4, 773–786.
- A 46** Recovering the geometry of a flat spacetime from a background radiation. Francesco Bonsante, Catherine Meusburger, Jean-Marc Schlenker. arxiv :1302.6966. *Annales Henri Poincaré* 15 :9(2014), 1733–1799. .
- A 47** The convex core of quasifuchsian manifolds with particles. Cyril Lecuire, Jean-Marc Schlenker. arXiv :0909.4182. *Geometry & Topology* 18-4 (2014), 2309–2373.
- A 48** Analytic aspects of the circulant Hadamard conjecture Teodor Banica, Ion Nechita, Jean-Marc Schlenker arxiv :1212.3589. *Ann. Math. Blaise Pascal* 21 (2014), 25-59.
- A 49** A cyclic extension of the earthquake flow II. Francesco Bonsante, Gabriele Mondello, Jean-Marc Schlenker. arXiv :1208.1738. To appear, *Annales Scientifiques de l'ENS*.
- A50** Submatrices of Hadamard matrices : complementation results. Teodor Banica, Ion Nechita, Jean-Marc Schlenker arxiv :1311.0764. *Electron. J. Linear Algebra* 27 (2014), 197–212.

Recent preprints

P 1 Some questions on anti-de Sitter geometry. Thierry Barbot, Francesco Bonsante, Jeff Danciger, William M. Goldman, François Guéritaud, Fanny Kassel, Kirill Krasnov, Jean-Marc Schlenker, Abdelghani Zeghib. arXiv :1205.6103. (Not submitted.)

P 2 The renormalized volume and uniformisation of conformal structures. Colin Guillarmou, Sergiu Moroianu, Jean-Marc Schlenker. arXiv :1211.6507.

P 3 Small circulant complex Hadamard matrices of Butson type. Teodor Banica, Gaurush Hiranandani, Ion Nechita, Jean-Marc Schlenker arxiv :1311.5390

P 4 Polyhedra inscribed in a quadric. Jeff Danciger, Sara Maloni, Jean-Marc Schlenker. arXiv :1410.3774.

P 5 Symplectic maps between moduli spaces of geometric structures on 3-manifolds. Carlos Scarinci, Jean-Marc Schlenker. In preparation (should appear soon).

Proceedings, notes, etc

C 1 Surfaces elliptiques dans des espaces lorentziens à courbure constante. J.-M. Schlenker. *Compte Rendus de l'Académie des Sciences, Série A*, 319 :609–614, 1994.

C 2 Un analogue du théorème d'Efimov en courbure variable. J.-M. Schlenker. In *Séminaire de théorie spectrale et géométrie, 1994-1995*, pages 67–79. Institut Fourier, 1995.

C 3 La conjecture des soufflets, d'après I. Sabitov. J.-M. Schlenker. *Séminaire Bourbaki*, Exposé no. 918, Nov. 2002. *Asterisque* No. 294 (2004), vii, 77–95.

C 4 Des immersions isométriques de surfaces aux variétés hyperboliques à bord convexe. J.-M. Schlenker. In *Séminaire de théorie spectrale et géométrie, 2002–2003*, pages 165–216. Institut Fourier, 2003.

Scientific publications outside mathematics

N 1 Shape-from-shading for surfaces applicable to planes. Jean-Denis Durou, Jean-Marc Schlenker. Proceedings PACV 2007 (workshop on Photometric Analysis For Computer Vision).

N 2 Productivity and Mobility in Academic Research : Evidence from Mathematicians. Pierre Dubois, Jean-Charles Rochet, Jean-Marc Schlenker. Working Paper IDEI 606 and TSE 10-160, May 2010. *Scientometrics* 98(2014) :3, 1669-1701.

General audience

V 1 Polyèdres. J.-M. Schlenker. Article du “fond documentaire” de l'*Encyclopaedia Universalis*, 2004.

V 2 Espaces (mathématiques). J.-M. Schlenker. Article pour le “notionnaire” l'*Encyclopaedia Universalis* (ouvrage de référence vendu avec la version DVD), 2004.