

C. V. of Jean-Marc Schlenker

Born 31.05.1968 in Grenoble (France), french citizenship.

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Personal address : 2 rue des Paradoux, 31000 Toulouse, France.

Education

17.1.2000 : defence of the "habilitation", Université Paris-Sud (Orsay).

9.1992-8.1995 : PhD, Ecole Polytechnique. Adviser : François Labourie. Title : isometric immersions of surfaces. Defended 12.12.1994.

9.1991-7.1992 : D.E.A. 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 : Studies at the Ecole Polytechnique. Major in math during the first year, in PDEs during the second. "Undergraduate thesis" under the direction of Albert Cohen and Ingrid Daubechies, at Bell Labs, on wavelet problems, March to June, 1991.

Employment history

2007-08 : "délégation" to the CNRS (one semester).

9.2004-8.2005 : "délégation" to the CNRS.

9.2000-... : Professor, Université Toulouse III. "1st class" since 9.2005.

9.1999-8.2000 : "détachement" to the CNRS; visit to the FIM, E.T.H. in Zürich.

9.1995-8/1999 : Maître de conférences, Université Paris-Sud (Orsay).

Teaching

2007-08 : third year course in topology.

2006-07 : courses in first and third year (algebra) and graduate course in hyperbolic geometry.

2005-06 : courses in first and third year (algebra and integration).

2004-05 : no teaching, C.N.R.S. "délégation".

2003-04 : courses in first year, fourth year (diff. geometry) and graduate course (hyperbolic geometry).

2002-03, 2001-02, 2000-01 : courses in first year (math for physics students), and in fourth year (differential geometry).

1995-99 : Mathematics for 2nd year math students.

Students advising

Brice Loustau is currently working on his Master's thesis, and is likely to start a PhD next year.

Boubacar Diallo is working on his PhD thesis, started in sept. 2007.

Grégoire Montcouquiol did his PhD (2001-05) on rigidity questions for Einstein cone-manifolds. He is maître de conférence in Orsay since 9.2006.

François Fillastre did his master's project in 2001-2002 (see math.MG/0308187) on spaces of polyhedra. He went on to do work on a PhD at Neuchatel, defended in 12.2006, under the joint supervision of Bruno Colbois and myself, on isometric embeddings of surfaces of higher genus.

Undergraduate students (for their "undergraduate thesis", in 4th year) : I advised 1 student in 1998-99 in Orsay, 3 in 2000-01, 2 in 2001-02, 2 in 2002-03 and 2 in 2003-04 in Toulouse. Also one student from the Ecole Polytechnique in 2001-02 and another one in 2002-03, one student from the Ecole Normale

Supérieure de Lyon in 2002-03, and one from Supaero in 2005-06. The project of one of the students from the Ecole Polytechnique, Mathias Rousset, lead to a paper on hyperideal hyperbolic manifolds, published in the Bull. Soc. Math. France (2004).

Current administrative and 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). The previous laureates were A. Bahri, K.A. Ribet (1989) - J.-L. Colliot-Thélène (1991) - J.-M. Coron (1993) - 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).

Member of the evaluation committee of the mathematics labs at the Ecole Polytechnique (CMLS & CMAP), 7-8/2/2008.

Member of the C.N.U. (Conseil National des Universités), 2007-2011. The C.N.U. is responsible for giving the possibility to apply to positions in France (qualification) and also of half the promotions of faculty in the country.

From 1.2007, representing the maths department at the “comité des habilitations” of the U. Toulouse III. This committee supervises the PhD and (mostly) the habilitations defended at the university.

Member of the "Commissions de Spécialistes" (hiring committees) for mathematics of the Universities Toulouse II (since 2004) and Toulouse III (since 2002). Previously also at Montpellier II (2002-06), I've been serving as an expert for the french ministry of research since 2000. Various evaluations, in particular I was on the committee for the P.E.D.R. (a kind of grant for active researchers) in pure and applied mathematics in 2001, 2002, 2003 and 2006.

Some past administrative duties

In charge of the graduate studies in pure maths at Toulouse III (someone else, Michel Boileau, is in charge of the graduate studies in pure and applied maths), 2002-06. This involved in particular organizing the pure maths D.E.A. (master).

Associate editor of the *Annales de la Faculté des Sciences de Toulouse, Mathématiques*, 12/2002-12/2005.

Grants and funding

I was in charge of an “ACI jeune chercheur” program on “Special metrics on manifolds with boundary”, 2003-06.

Member (65%, in charge of the Toulouse part) of a project on “Higher Teichmüller theory”, supported by the A.N.R. (Agence Nationale de la recherche), 2006-09.

Member (33%) of the A.N.R. program “geometry of non-compact or singular Einstein metrics”, 2006-09.

Membre (15 %) of the A.N.R. program “Flows and Operators in Geometry”, 2007-10.

Research project on polyhedral geometry, with Igor Pak (M.I.T.) supported by the M.I.T.-France seed fund, 2007.

Services to the community

Reviews for *Math. Reviews*.

Referee (or screening opinions) for several journals, for instance *Acta Math.*, the *Annales Scientifiques de l'E.N.S.*, the *Bulletin de la S.M.F.*, *Commentarii Mathematici Helvetici*, *Discrete Comput. Geom.*, *Duke Math. J.*, *Geometriae Dedicata*, *Inventiones Math.*, the *London Math. Society*, *Mathematische Annalen*, as well as for some conference proceedings.

Member of the council of the Société Mathématique de France, 06/2000-06/2003; secretary of the board from September 2000 to June 2001.

Member of the organizing committee for the "colloque Fermat", Toulouse, Oct. 2001, and of the local organizing committee of the first canadian-french conference in mathematics, planned for July 2004.

Co-organizer of a workshop on Einstein manifolds at the C.I.R.M., 11.2007.

Member of the organizing committee of the Mathematics Institute colloquium in Toulouse since 2003.

I was in charge of the organization from 2003 to 2006.

General public communication

I'm in charge of the "science" part of *nonfiction.fr*, a web site of book reviews started in oct. 2007. The science part is a very small part of the project, which is mainly oriented towards literature, social sciences, politics etc. We plan to produce approx. one review each month of a science book, with the goal of getting some non-scientific readers interested in scientific questions and aware that science should be part of the general culture (a point which is not obvious in France). The other members of the "science" team are Etienne Ghys (E.N.S. Lyon), Kirone Mallick (C.E.A. Saclay) and Cédric Villani (E.N.S. Lyon), we're planning to extend our team towards biology.

Miscellaneous

Fluent in french and english. Basic written and spoken german. Basic understanding of italian (needs brushing up). Basic programming skills (python, maple).

Hobby : during the last 2-3 years I was interested in the ongoing debate on the problems of the french higher education and research system. I published two longer notes and two short articles on this subject and participated in some roundtables, debates on national radio, etc. See <http://jmschlenker.googlepages.com> (in french).

Publication list

Articles (maths)

- 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. A.M.S.* 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.*, to appear.

A 22 Circle patterns on singular surfaces. Jean-Marc Schlenker. math.DG/0601631. *Discr. Comput. Geom.*, to appear.

Recent preprints

P 1 Quasifuchsian manifolds with particles. Sergiu Moroianu, Jean-Marc Schlenker. math.DG/0603441, 2006.

P 2 On the infinitesimal rigidity of weakly convex polyhedra. Robert Connelly and Jean-Marc Schlenker. math.DG/0606681. Submitted to the proceedings of the program on rigidity, Erwin Schroedinger Institut, 2006.

P 3 AdS manifolds with particles and earthquakes on singular surfaces. Francesco Bonsante, Jean-Marc Schlenker. math.GT/0609116.

P 4 Multi Black Holes and Earthquakes on Riemann surfaces with boundaries. Francesco Bonsante, Kirill Krasnov, Jean-Marc Schlenker. math.GT/0610429.

P 5 Higher Schläfli formulas II. Vector-valued differential relations. Jean-Marc Schlenker, Rabah Souam. math.DG/0611499.

P 6 On the infinitesimal rigidity of polyhedra with vertices in convex position. Ivan Izmistiev, Jean-Marc Schlenker. arXiv :0711.1981.

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).

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.