

Employment

- **Maître de Conférences** (Assistant Professor), Université Paris-Sud, from September 2006.
- **Warwick Zeeman Lecturer**, University of Warwick (UK), 2006–08.
- **Postdoctoral Research Fellow**, University of Warwick (UK), 2005–06.
Mentor: Vladimir Markovic.
- **Postdoctoral Research Fellow**, jointly at Institut de mathématiques de Luminy (Marseille, France) and Institut de mathématiques et de modélisation de Montpellier (Montpellier, France), 2004–05.
Mentors: Pierre Arnoux, Pascal Hubert, Emmanuel Royer.

Education

- **Université Rennes 1**, Mathematics, MS [DEA] 2000, PhD [Doctorat] 2004.
Dissertation: *Arithmetic Veech surfaces in genus two*. Advisor: Anton Zorich.
- **École Polytechnique**, Engineering degree [Diplôme ingénieur] 1999.

Publications

- *Translation surfaces with no convex presentation* (with Barak Weiss), *submitted*.
- *Completely periodic configurations in $\mathcal{H}(4)$* , Appendix to *A criterion for the simplicity of the Lyapunov spectrum of square-tiled surfaces* by C. Matheus, M. Moeller, and J.-C. Yoccoz, *submitted*.
- *Diffusion rate for the Ehrenfest windtree model* (with Vincent Delecroix and Pascal Hubert), *Annales Scientifiques de l'École Normale Supérieure*, *to appear*.
- *Slope gaps for saddle connections on the golden L* (with Jayadev Athreya and Jon Chaika), *Contemp. Math.*, *to appear*.
- *The sprawl conjecture for convex bodies* (with Moon Duchin and Christopher Mooney), *Experimental Mathematics*, Volume 22, Issue 2 (2013), 113–122.
- *The geometry of spheres in free abelian groups* (with Moon Duchin and Christopher Mooney), *Geometriae Dedicata*, Volume 161, Issue 1 (2012), 169–187.
- *Statistical hyperbolicity in groups* (with Moon Duchin and Christopher Mooney), *Algebraic and Geometric Topology* **12** (2012) 1–18.
- *The Ehrenfest wind-tree model: periodic directions, recurrence, diffusion* (with Pascal Hubert and Serge Troubetzkoy), *J. Reine Angew. Math. (Crelle's Journal)* **656** (2011), 223–244.
- *Multi-geodesic tessellations, fractional Dehn twists and uniformization of algebraic curves* (with Robert Silhol), ArXiv: math.GT/0702374, 2007.
- *Orbitwise countings in $\mathcal{H}(2)$ and quasimodular forms* (with Emmanuel Royer), *International Math. Research Notices* 2006, Art. ID 42151, 30 pp.
- *Siegel-Veech constants in $\mathcal{H}(2)$* , *Geometry and Topology* **10** (2006), 1157–1172.
- *Prime arithmetic Teichmüller discs in $\mathcal{H}(2)$* (with Pascal Hubert), *Isr. J. Math.* **151** (2006), 281–321.
- *Noncongruence subgroups in $\mathcal{H}(2)$* (with Pascal Hubert), *Int. Math. Res. Not.* 2005, no. 1, 47–64.

Grants, Awards, and Invited Visits

- Random Groups Research Cluster (six weeks), participating faculty, funded by NSF and ANR, Tufts University, Summer 2014
- Scientific distinction award of Ministry of Higher Ed. [Prime d'excellence scientifique], 2010–14
- Member of ANR (Agence Nationale de la Recherche) funded projects
 - **Geodym**: Géométrie et dynamique des espaces de modules, 2011–15
 - **Modunombres**: Théorie des nombres et formes modulaires, 2007–11
 - **Teichmüller**: Dynamique dans l'espace de Teichmüller, 2006–10
- Délégation CNRS (six months), research grant with teaching release, 2010–11 and 2012–13
- Geometry and Dynamics of Teichmüller Spaces Trimester Program (one month), Hausdorff Institute for Mathematics , Bonn, Germany, Summer 2010

Selected Lectures

Master classes

- Veech groups, IV Atlantic Geometry Seminar, Castro Urdiales, Spain, October 2013.
- Wind-tree models, Workshop on surfaces of infinite type, Morelia, Mexico, August 2013.
- Dynamics of translation surfaces (four lectures), in *Special program on Teichmüller theory*, Erwin Schrödinger Institute, Vienna, Austria, March 2013.

Conferences

- Dynamics of Lie group actions on parameter spaces, Sde Boker, Israel, January 2013.
- *Bobo 2012 - Discrete mathematics: combinatorial, algorithmic and dynamical aspects*, Bobo Dioulasso, Burkina Faso, November 2012.
- Istanbul workshop on Teichmüller theory, October 2012.
- Billiards, flat surfaces, and dynamics on moduli spaces, Oberwolfach, Germany, May 2011.
- Subgroups of mapping class groups, HIM, Bonn, Germany, May 2010.
- Mathematical billiards, Oberwolfach, Germany, April 2010.
- Workshop on Geometry and number theory, Karlsruhe, Germany, December 2009.
- Workshop on Ergodic theory and geometry, Manchester, England, April 2008.
- International workshop on Teichmüller theory and moduli problems, Harish-Chandra Research Institute, Allahabad, India, January 2006.
- Workshop on Group actions in geometry, Karlsruhe, Germany, December 2005.
- Geometric Dynamics with Singularities, Exeter, UK, December 2005.
- Rational Billiards and Flows on Moduli Spaces, UIC, Chicago, USA, June 2005.
- Ergodic theory with connections to number theory, Oregon State University, USA, July 2003.

Seminars

- *France*: Grenoble ($\times 2$), Marseille ($\times 4$), Strasbourg, Rennes, Montpellier, Orléans, Bordeaux ($\times 2$), Amiens, Nîmes, Avignon, Lyon ($\times 2$), Cergy, Villetanneuse
- *USA*: Rice (colloquium), Harvard, Stony Brook, Cornell, Yale, San Francisco State, UC Davis
- *UK*: Cambridge, Southampton, Warwick, Manchester, King's College London, Liverpool
- *Rest of world*: Pisa (Italy), Lausanne (Switzerland), Queen's University (Ontario, Canada)

Teaching**Université Paris-Sud, Orsay**

- Introduction to dynamical systems (master's), 2009, 2010, 2011, 2012.
- Higher mathematics for high school teachers (master's), 2013.
- Geometry and Fourier series for chemists (undergraduate), 2011, 2012, 2013, 2014.
- Euclidean geometry (undergraduate), 2008, 2009, 2011.
- Analysis (pre-undergraduate), 2013.
- Calculus, Linear algebra, 2006–11.

University of Warwick

- Hyperbolic geometry (master's), 2007, 2008.

Université Montpellier 2

- Algebra, Calculus, Linear algebra, 2003.

Université de Rennes 1

- Linear algebra with applications to biology, Mechanics, 2000–03.

Service and Mentorship**Sage**

Sage is free open-source mathematics software developed by and for mathematicians, based on the programming language Python. Jointly with Vincent Delecroix, I developed algorithms for studying square-tiled surfaces that have been implemented in Sage code. I am active in the Sage community, answering questions on ask.sagemath.org and giving presentations and tutorials on using Sage in research. Speaker at annual python conference (PyCon-fr) in Rennes, 2011.

Outreach

- Lectures and discussion (12 hours), Semaine des Mathématiques, Collège Anne Frank (middle school), St. Dizier, France, March 2014.
- Presentations for general public, Fête de la Science, Orsay, France, October 2013.
- Workshops in three elementary schools, Orsay and Les Ulis, France, March 2013.
- Lecture and discussion at Collège Jean-Baptiste Dumas (middle school), Salindres, France, May 2012.
- Helped David Zmiaikou launch the ITYM (International Tournament of Young Mathematicians) in 2009. This is an annual team tournament for high school students around the world; students have three months to work on substantial problems related to active research topics. I contributed problems in 2010.

Projects supervised

- Zhenlong Fan, Université Paris-Sud, master's reading course: "Continued fractions and hyperbolic geometry," 2011.
- Andy Hayden, University of Warwick, undergraduate thesis: "Closed orbits and lattice stabilisers for the action of $SL(2, \mathbf{R})$ on translation surfaces," 2007.
- David Zmiaikou, École polytechnique, undergraduate thesis: "Group actions on origamis," 2006.

Seminars co-organized

- Geometry, topology and dynamics seminar, Université Paris-Sud, Orsay, France, 2007–11.
- Geometry seminar, University of Warwick, UK, 2005–06.

Conferences co-organized

- Sage-Combinat Days, Cernay, France, April 2013.
- Sage Days, Geometry and dynamics, Université Paris-Sud, Orsay, France, January 2011.
- Flat surfaces (2-day conference), Université Paris-Sud, Orsay, France, December 2008.
- Teichmüller dynamics (week-long conference), Roscoff, Brittany, France, June 2008.
- Celebration of 70th birthday of David Epstein (week-long conference), Warwick, UK, July 2007.
- Analytic aspects of low-dimensional geometry (week-long conference), Warwick, UK, Sept 2006.
- Low-dimensional geometry and topology (local organization for year-long program), Warwick, UK, 2006–07.

Other service

- Advisory committee for promotions and hiring, Mathematics Department at Orsay, 2010–14.
- Hiring committee, Computer Science Department at Orsay, 2014.
- Refereeing for mathematical journals.