

Research Interests

- Algebraic Number Theory
- Computational Number Theory
- Arithmetic Geometry

Employment

- **Warwick Mathematics Institute** (UK), Marie-Curie Research Fellow, April 2009-2011.
- **Institut für Experimentelle Mathematik** (Germany), Postdoctoral Fellowship, October 2007-March 2009.
- **University of Calgary**, PIMS Postdoctoral Fellowship 2005–2007, Postdoctoral Fellowship 2003–2004.
- **Brandeis University**, Visiting Postdoctoral Fellowship, Spring 2003 and Lecturer Spring 2005.

Education

- **McGill University** at Montreal, Canada, Ph.D., August 2002, *Explicit computations of Hilbert modular forms on $\mathbf{Q}(\sqrt{5})$* .

Publications

11. *Explicit base change and congruences for Hilbert modular forms*, preprint.
10. *Automorphic forms on $U(3)$ and experimental evidence for the Ihara Lemma*, preprint.
9. *Appendix to “Sur une question de compatibilité local-global modulo p ”* by C. Breuil. Submitted.
8. *Nonsolvable Galois number fields ramified at 3 and 5 only*, (joint with J. Voight and M. Greenberg). To appear in *Compositio Math.*
7. *A non solvable Galois extension of \mathbf{Q} ramified at 2 only*, with a supplement by J.-P. Serre. *C. R. Math. Acad. Sci. Paris* **347** (2009), no. 3-4, 111–116.
6. *Computing Hilbert modular forms for fields with non-trivial class group* (15 pages), with S. Donnelly, ANTS 8 Proceedings. *Lecture Notes in Computer Science*. Vol. **5011** (2008), 371–386.
5. *On the computation of algebraic modular forms on compact inner forms of GSp_4* , to appear in *Mathematics of Computation*.
4. *Computing Hilbert-Siegel modular forms of genus 2 over $\mathbf{Q}(\sqrt{5})$ via the Jacquet-Langlands correspondence* (14 pages), with C. Cunningham. *Experiment. Math.* **18**, no 3, 337-345 (2009).
3. *An algorithm for modular elliptic curves over real quadratic fields*. *Experiment. Math.* **17** (2008), no. 4, 427–438.
2. *Quaternionic M -symbols, Brandt matrices, and Hilbert modular forms*, *Mathematics of Computations*, Vol. **76**, No 258 (2007), 1039–1057.
1. *Explicit Computations of Hilbert modular forms on $\mathbf{Q}(\sqrt{5})$* , *Experimental Mathematics*, Vol. **14**, No 4 (2005), 457–466.

Computation

- The Hilbert Modular Forms Package: Release in Magma, January 2009.
- The Hilbert Modular Forms Database:
<http://www.warwick.ac.uk/staff/L.Dembele> (in progress).

Teaching

Warwick University

- *Introduction to elliptic curves*, Fall 2010.
- *Computational aspects of Hilbert modular forms*, TCC course (Bristol, Cambridge, Imperial and Warwick), Fall 2009.

CRM Barcelona

- *Explicit methods for Hilbert modular forms*, mini-course in May 2010.

Institut für Experimentelle Mathematik

- *Introduction to the computation of Hilbert modular forms*, Summer 2008.

University of Calgary

- *Linear algebra I*, Fall 2006.
- *Introduction to Abstract Algebra*, Summer 2004.

Mathematical Sciences Research Institute

- *Computing with modular forms* (graduate workshop), Summer 2006.

Brandeis University

- *Introduction to Biostatistics*, Spring 2005.
- *The arithmetic of elliptic curves*, graduate course, Spring 2005.

McGill University

- *Teaching Assistant* (various courses), Fall 1995–Spring 2002.

Recent Talks

- July 2010, Modularity Conference at CRM, Barcelona, Spain.
- May 2010, Minicourse at CRM Barcelona, Barcelona, Spain.
- March 2010, University of Nottingham Number Theory Seminar, Nottingham, UK.
- February 2010 Magma Conference on L -adic functions, CRM Montreal, Canada.
- January 2010, University of Cambridge Number Theory Seminar, Cambridge, UK.
- December 2009, Heilbronn Seminar, Bristol University, Bristol, UK.
- October 2009, London Number Theory Seminar, Imperial College, London, UK.
- November 2008, Number Theory Seminar, Warwick University, Warwick, UK.
- July 2008, Seminario di teoria dei numeri, Milan University, Milan, Italy.
- May 2008, ANTS 8, Banff, Alberta, Canada.
- April 2008, Séminaire de théorie des nombres, Université Jussieu, Paris, France.
- March 2008, Number Theory Seminar, Toronto University, Toronto, Canada.
- December 2007, Oberseminar, Duisburg-Essen University, Essen, Germany.
- September 2007, Number Theory Seminar, University of Sydney, Sydney, Australia.
- September 2007, Computational Algebra Seminar, University of Sydney, Sydney, Australia.
- July-August 2007, L -functions and modular forms, AIM Institute, Palo Alto, CA, USA.
- Jun 2007, Modular Forms: Arithmetic and Computation, BIRS, Banff, AB, Canada.

- March 2007, Quebec-Vermont Number Theory Seminar, Montreal, Qc, Canada.
- January 2007, CMS Meeting, Ottawa University, ON, Canada.
- Jun 2006, Microsoft Research Division, Richmond, WA, USA.
- Jun 2006, CMS Meeting, University of Calgary, AB, Canada.
- April 2006, AMS Regional Meeting, San Francisco state University, San Francisco, CA, USA.
- April 2005, Five Colleges Number Theory Seminar, Amherst, MA, USA.
- March 2005, Modular Forms Seminar, Harvard University, MA, USA.
- November 2004, Algorithmic methods in Number Theory, BIRS, Banff, AB, Canada.
- April 2003, Fellowship of the Ring, Brandeis University, Waltham, MA, USA.
- January 2002, Far Hills Workshop on Automorphic forms, Montréal, Qc, Canada.
- July 2002, CMS meeting, Laval University, Quebec City, Qc, Canada.

Personal

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Citizenship: Ivory Coast