Curriculum Vitae et Studiorum

Matilde Marcolli

Born: 30/11/1969, Como, Italy.
Citizenship: Italian
Residence Status: Permanent Resident of the USA (green card)
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Education

- June, 1997: Ph.D. Mathematics, The University of Chicago. Dissertation: *Three-dimensional aspects of Seiberg-Witten gauge theory*; Thesis advisor: Prof. Mel Rothenberg.

- December, 1994: Master Sc., Mathematics, The University of Chicago.

- June, 1993: *Laurea* in Physics, 110/110 summa cum laude, Università degli Studi, Milano Italy. Dissertation: *Classes of self equivalences of fibre bundles*; Thesis advisor: Professor R. A. Piccinini (Department of Mathematics).

Employment History

- **2003-present** Associate Professor (C3, with tenure), Max Planck Institut für Mathematik, Bonn, Germany.

- **2006-present** Honorary Professor, Bonn University, Germany.

- **2000-2003**: Associate Professor (C3), Max Planck Institut für Mathematik, Bonn, Germany.

- **2001-present**: Courtesy appointment (Associate Professor), Mathematics Department, Florida State University, USA

- **1997-2000**: C.L.E. Moore Instructor, Department of Mathematics, Massachusetts Institute of Technology, USA.

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Honors, Grants and Awards

- Plenary Speaker for the 5th European Congress of Mathematics, Amsterdam, July 2008.

- **2007-2009**: National Science Foundation (NSF) grant DMS-0651925 (45,000 USD, part of NSF Focused Research Group "Noncommutative Geometry and Number Theory", with Alain Connes, Caterina Consani, Henri Moscovici)

- **2007-2009** Australian Research Council, Grant DP0769986 "Geometric problems from quantum theory" (with Alan Carey and Michael Murray) (315,000 AUD)

- **2004-2006**: Australian Research Council, Grant DP0449470 "Geometric methods in quantum theory" (with Alan Carey and Michael Murray) (240,000 AUD)

- **2001–2004**: Sofja Kovalevskaya Award of the Alexander von Humboldt Foundation and the ZIP Program of the German Government (1,240,000 DM).

- **2001**: Heinz Maier Leibnitz Prize awarded by the Deutsche Forschungsgemeinschaft (30,000 DM)

- **1998-2000**: National Science Foundation (NSF) grant DMS-9802480 (63,227 USD)

- **1995-1997**: *Borsa di Studio e Ricerca*, Research Grant awarded by the National Council of Research (CNR) of Italy (12,000 USD).

Visiting Positions

- **April 2007**: Visitor at the Mittag Leffler Institute, Stockholm, Sweden.

- **Fall 2006**: Newton Institute Cambridge, UK.

- **Nov 2005**: Visitor at the Kavli Institute of Theoretical Physics Santa Barbara, USA.

- **May 2005**: Visitor (Kempf Lectures), Johns Hopkins university, USA.

- **April-May 2005**: Visiting scholar, Vanderbilt University, USA

- **May-June 1999**: Visiting position at the Max Planck Institut für Mathematik, Bonn, Germany.

- **January 1999**: Visiting position at the Tata Institute of Fundamental Research, Mumbai, India.

- **June-August 1998**: Visiting position at the Max Planck Institut für Mathematik, Bonn, Germany.

- **July 1996**: Guest of the program "Research in Pairs" (for collaborative research with M. Spreafico) at the Mathematisches Forschungsinstitut Oberwolfach, Germany.

Publications

Books authored

1. *Noncommutative Geometry, Quantum Fields and Motives*, (with Alain Connes) Colloquium Publications, Vol.55 American Mathematical Society, 2008. (808pp.)

2. *Arithmetic noncommutative geometry*, University Lectures Series, Vol.36, American Mathematical Society, 2005.

3. *Seiberg–Witten gauge theory*, Texts and Readings in Mathematics, Vol.17, Hindustan Book Agency, New Delhi, 1999, viii+228 pp.

Books edited

1. *Frobenius manifolds, quantum cohomology and singularities*, (with Claus Hertling, Editors), Vieweg Verlag, 2004.

2. *Noncommutative Geometry and Number Theory*, (with Caterina Consani, Editors), Vieweg Verlag 2006.

3. *An invitation to Noncommutative Geometry*, (with Masoud Khalkhali), World Scientific, 2008.

4. *Traces in Geometry, Number Theory and Quantum Fields*, (with Sergio Albeverio, Sylvie Paycha, Jorge Plazas), Vieweg Verlag 2008.

Articles

1. *Noncommutative geometry and motives: the thermodynamics of endomotives*, (with Alain Connes and Caterina Consani), Advances in Mathematics, Vol.214 (2007) N.2, 761–831.

2. *Gravity and the Standard Model with neutrino mixing* (with Ali Chamseddine and Alain Connes), Advances in Theoretical and Mathematical Physics, 11 (2007) 991–1090.

3. *Quantum statistical mechanics over function fields* (with Caterina Consani) Journal of Number Theory, 123 (2007) 487–528.

4. *KMS states and complex multiplication*, (with Alain Connes and Niranjan Ramachandran) Selecta Math. (N.S.) Vol.11 (2005) N.3-4, 325–347.

5. *The Weil proof and the geometry of the adele class space*, (with Alain Connes and Katia Consani) math.NT/0703392, to appear in "Algebra, Arithmetic and Geometry – Manin Festschrift", Springer Verlag, 2008.

6. *KMS states and complex multiplication (part II)*, (with Alain Connes and Niranjan Ramachandran) in "Operator Algebras - The Abel Symposium 2004", pp.15–60, Springer Verlag, 2006.

7. *Noncommutative geometry on trees and buildings* (with Gunther Cornelissen, Kamran Reihani and Alina Vdovina), math.QA/0604114, to appear in the volume "Traces in Geometry, Number Theory and Quantum Fields".

8. *From Physics to Number Theory via Noncommutative Geometry. Part II: Renormalization, the Riemann–Hilbert correspondence, and motivic Galois theory* (with Alain Connes), in "Frontiers in Number Theory Physics and Geometry, II", pp.617–713, Springer Verlag, 2006.

9. *Modular curves, C^*-algebras, and chaotic cosmology*, in "Frontiers in Number Theory Physics and Geometry, II" pp.361–372, Springer Verlag, 2006.

10. *A walk in the noncommutative garden* (with Alain Connes) in "An invitation to noncommutative geometry" World Scientific, 2007.

11. *Quantum Fields and motives* (with Alain Connes), Journal of Geometry and Physics, Vol. 56 (2006) N.1, 55–85.

12. *Q-lattices: quantum statistical mechanics and Galois theory* (with Alain Connes), Journal of Geometry and Physics, Vol. 56 (2006) N.1, 2–23.

13. *Archimedean cohomology revisited*, (with Caterina Consani), in "Noncommutative Geometry and Number Theory", Consani, Marcolli (Eds.), pp.109–140. Vieweg Verlag, 2006.

14. *Towards the fractional quantum Hall effect: a noncommutative geometry perspective* (with Varghese Mathai) in "Noncommutative Geometry and Number Theory", Consani, Marcolli (Eds.), pp.235–262. Vieweg Verlag, 2006.

15. *From Physics to Number Theory via Noncommutative Geometry. Part I: Quantum Statistical Mechanics of Q-lattices*, (with Alain Connes) in "Frontiers in Number Theory Physics and Geometry, I", pp.269–350, Springer Verlag, 2006.

16. *Variants of equivariant Seiberg-Witten Floer homology*, (with Bai-Ling Wang), in "Spectral Geometry of Manifolds with Boundary and Decomposition of Manifolds", Contemporary Mathematics, Vol. 366 (2005) 225–238.

17. *Renormalization and motivic Galois theory* (with Alain Connes), International Math. Research Notices (2004) N.76, 4073–4092.

18. *Noncommutative geometry, dynamics, and ∞-adic Arakelov geometry*, (with Caterina Consani), Selecta Mathematica, Vol.10 (2004) N.2, 167–251.

19. *New perspectives in Arakelov geometry*, (with Caterina Consani), in "Number Theory", CRM Proceedings and Lecture Notes, Vol. 36 (2004) 81–102.

20. *Spectral triples from Mumford curves*, (with Caterina Consani), International Math. Research Notices, 36 (2003) 1945–1972.

21. *Limiting Modular symbols and the Lyapunov spectrum*, Journal of Number Theory, Vol.98 N.2 (2003) 348-376.

22. *The geometric triangle for 3-dimensional Seiberg-Witten monopoles*, (with Alan Carey and Bai-Ling Wang), Communications in Contemporary Mathematics, Vol.5 N.2 (2003) 197–250.

23. *Triplets spectraux en geometrie d'Arakelov*, (with Caterina Consani), Comptes Rendus Acad. Sci. Paris, Ser. I 335 (2002) 779–784.

24. *Weak UCP and perturbed monopole equations*, (with Bernhelm Booss-Bavnbek and Bai-Ling Wang), International Journal of Mathematics, Vol. 13 N.9 (2002) 987–1008.

25. *Continued fractions, modular symbols, and noncommutative geometry*, (with Yuri Manin) Selecta Mathematica, New Ser. Vol.8 N.3 (2002) 475–520.

    (This paper got a Featured Review on the Mathematical Reviews: MR1931172)

26. *Holography principle and arithmetic of algebraic curves*, (with Yuri Manin), Advances in Theoretical and Mathematical Physics, Vol.5, N.3 (2001) 617–650.

27. *Seiberg-Witten and Casson-Walker invariant for rational homology spheres*, (with Bai-Ling Wang) Geometriae Dedicata, 91 (2002), 45–58.

28. *Equivariant Seiberg–Witten Floer homology*, (with Bai-Ling Wang), Communications in Analysis and Geometry, Vol.9 N.3 (2001) 451–639.

    (This paper got a Featured Review on the Mathematical Reviews: MR1895135)

29. *Twisted index theory on good orbifolds II: Fractional quantum numbers*, (with Varghese Mathai), Communications in Mathematical Physics, 217 (2001) N.1 55–87.

30. *Twisted index theory on good orbifolds I: Noncommutative Bloch theory*, (with Varghese Mathai), Communications in Contemporary Mathematics, 1 (1999) N.4, 553–587.

31. *Gauge groups and characteristic classes*, (with Mauro Spreafico), Expositiones Mathematicae, 15 (1997) N.3, 229–249.

32. *Seiberg–Witten Floer homology and Heegaard splittings*, International Journal of Mathematics, 7 (1996) N.5, 671–696.

33. *Some remarks on conjugacy classes of bundle gauge groups*, Cahiers Topologie Géom. Différentielle Catég. 37 (1996) N.1, 21–39.

34. *Lorentz bundles*, Rend. Inst. Mat. Univ. Trieste 25 (1993) N.1-2, 309–315.

Preprints

Submitted for publication

1. *Solvmanifolds and noncommutative tori with real multiplication.* preprint

2. *Modular shadows and the Levy-Mellin infinity-adic transform* (with Yuri Manin) math.NT/0703718.

3. *Zeta functions that hear the shape of a Riemann surface* (with Gunther Cornelissen) arXiv:0708.0500

4. *On the K-theory of graph C^* algebras* (with Gunther Cornelissen and Oliver Lorscheid) math.OA/0606582.

Articles in preparation

1. *KMS states and Mumford curves* (with Alan Carey and Adam Rennie)

2. *Rigidity of noncommutative zeta functions in non-archimedean uniformization* (with Gunther Cornelissen)

3. *Anomalies, dimensional regularization and noncommutative geometry*, (with Alain Connes)

4. *Three-manifolds: coverings, correspondences, and noncommutative geometry*, (with Ahmed Zainy)

5. *Noncommutative elliptic motives*, (with Katia Consani)

Unpublished manuscripts

1. *Exact triangles in Seiberg-Witten-Floer theory, Part II: geometric limits of flow lines*, (with Bai-Ling Wang)

   arXiv:math.DG/9907080 71 pages

2. *Exact triangles in Seiberg-Witten-Floer theory, Part III: the proof of exactness*, (with Bai-Ling Wang)

   arXiv:math.DG/0009157. 69 pages

3. *Exact triangles in Seiberg–Witten Floer theory. Part IV: Z-graded monopole homology*, (with Bai-Ling Wang)

   arXiv:math.DG/0009159. 34 pages

4. Система Обыкновенниих Дифференциальних Уравнений Антисамодвойственних Связностей и Монополей Дирака,

   MPI preprints 2002-40. 7 pages

Mathematical Activities

Invited Lecture Series

- November 2007: Two lectures mini-course at *États de la Recherche: Géométrie Noncommutative*, CNRS Metz, France.

- June 2006: Two lectures in the school/workshop "Arithmetic and Geometry around Quantization", Istanbul, Turkey.

- May 2006: Three lectures at the Spring School on Noncommutative Geometry and Operator Algebras, Vanderbilt University, USA.

- November 2005: Two lectures in the program "Mathematical structures of String Theory", Kavli Institute for Theoretical Physics, USA.

- October 2005: Series of two lectures at the workshop "Symmetry and universality in mesoscopic systems" Bad Honnef Physics Center, Germany.

- September 2005: Series of three lectures at the school/workshop "NCG 2005" at IPM Tehran, Iran.

- May 2005: "Kempf Lectures", Johns Hopkins University, USA.

- April 2005: Lecture Series (jointly with Alain Connes) at Vanderbilt University, USA.

- April 2005: Three lectures at the "Masters Forum: Noncommutative Geometry" Fudan University, Shanghai, PR China.

- December 2004: Three lectures at the Banach Center, Polish Academy of Science and Warsaw University, Poland.

- October 2004: Two lectures at the workshop "Noncommutative Manifolds", ISAS/SISSA and ICTP, Trieste, Italy.

- May 2004: Series of five lectures on "Noncommutative and arithmetic geometry" at the Spring School on Noncommutative Geometry and Operator Algebras, Vanderbilt University, USA.

- February 2004: Series of four lectures on "Noncommutative Geometry and Number Theory", CIRM Luminy, France, Meeting: Noncommutative Geometry in Mathematics and Physics.

- February 2003: Series of five lectures on "Noncommutative and arithmetic geometry", University of Nottingham, UK

- October 2002: Series of four lectures on Noncommutative geometry, Fields Institute, Toronto, Canada.

Invited Talks

- November 2007: Conference "Noncommutative Manifolds", ICTP, Trieste, Italy.

- October 2007: Colloquium, Yale University, USA.

- October 2007: Mathematical Physics Seminar, Yale University, USA.

- October 2007: Symplectic Geometry Seminar, Courant Institute, NYU, USA.

- October 2007: Special Section "Noncommutative Geometry and Arithmetic", Sectional AMS meeting, New Brunswick, USA.

- June 2007: Euler Fest, "Arithmetic Geometry" Conference, St. Petersburg, Russia.

- May 2007: Workshop "Trends in Noncommutative Geometry", Northwestern University, USA.

- May 2007: Spring School on Noncommutative Geometry and Operator Algebras, Vanderbilt University, USA.

- March 2007: Colloquium Berkeley, USA.

- March 2007: Number Theory Seminar, Berkeley, USA.

- February 2007: Centre Physique Théoretique, Luminy Marseille, France.

- February 2007: Colloquium "Geometry and Quantum Physics Cluster", Nijmegen, The Netherlands.

- January 2007: Workshop "Motives in Physics" MPIMIS Leipzig, Germany.

- December 2006: Talk in the workshop "Renormalization", MPIM Bonn.

- October 2006: Colloquium, University of Rome II, Italy.

- July 2006: Colloquium, Freiburg University, Germany.

- May 2006: Talk in the workshop "Characteristic classes of singular spaces" Renyi Institute, Budapest, Hungary.

- May 2006: Centre Physique Théoretique, Luminy Marseille, France.

- April 2006: Noncommutative Geometry Conference, Banff, Canada.

- March 2006: Operator Algebra Seminar, University of Oslo, Norway.

- March 2006: Operator Algebra Seminar, University of Trondheim, Norway.

- March 2006: Colloquium, University of Trondheim, Norway.

- February 2006: Mathematical Sciences Institute, Australian National University, Canberra, Australia.

- September 2005: Department of Mathematics, University of Milan, Italy.

- September 2005: Talk at the workshop "Arithmetic geometry and high energy physics", Lorentz Center, Leiden, The Netherlands.

- June 2005: Workshop on Renormalization and Number Theory, Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany.

- June 2005: Lecture at Arbeitstagung, MPI Bonn, Germany.

- June 2005: Lecture in the "Giornata INdAM", Neaples, Italy.

- May 2005: The 3rd Annual Spring Institute on Noncommutative Geometry and Operator Algebras, Vanderbilt, USA

- February 2005: Centre de Physique Théorique, Luminy, France

- February 2005: Lecture in the "Journée thematique: géométrie complexe théorie de jauge", Institut de Mathématiques de Luminy, France

- October 2004: Mathematical Physics Seminar, ETH Zurich, Switzerland

- September 2004: Noncommutative Geometry conference, Oberwolfach, Germany

- September 2004: Lecture in the First Abel Symposium "Operator Algebras", Oslo, Norway

- March 2004: Seminar Algebraic Structures in Quantum Field Theory, Florida State University, USA

- March 2004: Algebra Seminar, Florida State University, USA

- February 2004: special lecture on gauge theory on 3-manifolds, meeting "Noncommutative Geometry in Mathematics and Physics", CIRM Luminy, France.

- January 2004: Geometric Analysis Seminar, Laboratoire Emile Picard, Université Paul Sabatier, Toulouse, France.

- January 2004: Stochastics Seminar, University of Bonn, Germany.

- January 2004: Opening Lecture at the workshop "Arithmetic and algebraic geometry", University of Padua, Italy.

- November 2003: Algebra Seminar, Florida State University, USA.

- October 2003: Lecture at the workshop "Geometry and Physics" CIRM Luminy, France.

- September 2003: Lecture at the workshop "Noncommutative Geometry", Mittag–Leffler Institute, Stockholm, Sweden.

- August 2003: Lecture at the "Workshop on Noncommutative geometry and Number Theory", MPI Bonn, Germany

- June 2003: Lecture at Arbeitstagung, MPI Bonn, Germany.

- May 2003: Number Theory Seminar, University of Utrecht, the Netherlands.

- March 2003: Lecture at the Les Houches school "Frontiers in Number Theory, Physics, and Geometry", France.

- February 2003: Cambridge-Oxford-Warwick Seminar in Algebraic Geometry, UK.

- February 2003: Colloquim Lecture, University of California Berkeley, USA.

- January 2003: Lecture at the AMS National meeting, special session "Computational algebraic and analytic geometry for low dimensional varieties", Baltimore USA.

- January 2003: Lecture at the AMS National meeting, special session "Primes and knots", Baltimore USA.

- December 2002: Geometric Mathematical Physics Seminar, Aarhus University, Denmark.

- December 2002: Topology Seminar, Aarhus University, Denmark.

- November 2002: Lecture at the session "manifolds in mathematics and other fields" of the meeting "Art and Science in Europe" of the Polish Academy of Science and the Max–Planck Society, Warsaw, Poland.

- October 2002: Colloquium Lecture, University of Toronto, Canada.

- October 2002: Colloquium Lecture, Florida State University, USA.

- September 2002: Opening Lecture at the conference "Geometric properties of real and complex manifolds", Palermo, Italy.

- July 2002: Lecture at the workshop "Geometrical aspects of field equations", Greifswald, Germany.

- June 2002: Algebraic Geometry Seminar, Université de Rennes I, France.

- May 2002: Colloquium Lecture, Münster University, Germany.

- January 2002: Roskilde University, Denmark.

- November 2001: Number Theory Seminar, MPIM Bonn, Germany.

- November 2001: Algebraic Geometry seminar, University of Toronto, Canada.

- November 2001: Colloquium Lecture, Regensburg University, Germany.

- October 2001: University of Helsinki, Finland.

- October 2001: Seminar on Algebra, Geometry and Physics, MPIM Bonn, Germany.

- August 2001: Lecture at the workshop "Topology of manifolds and group actions", CRM Montreal, Canada.

- May 2001: Scuola Normale Superiore, Pisa, Italy.

- May 2001: Colloquium Lecture, Bielefeld University, Germany.

- May 2001: Colloquium Lecture, Bonn University, Germany.

- March 2001: Lecture at the conference "Geometric Analysis and Index Theory", ICTP Trieste, Italy.

- February 2001: Colloquium Lecture, Göttingen University, Germany.

- January 2001: Differential Geometry Seminar, Bonn University, Germany.

- November 2000: Topology seminar, Trinity College, Dublin, Ireland.

- November 2000: Lecture at the conference "Perspectives in geometry", Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany.

- August 2000: Seminar on Algebra, Geometry and Physics, MPIM Bonn, Germany.

- June 2000: Lecture at the EURESCO conference "Mathematical Analysis", Castelvecchio Pascoli, Italy.

- May 2000: Two lectures at the conference "Perspectives in gauge theory and calibrated geometry", Martina Franca, Italy.

- February 2000: Gauge Theory Seminar, Harvard University, USA.

- November 1999: Mathematical Physics Seminar, Harvard University/MIT, USA.

- October 1999: Topology seminar, Yale University, USA.

- October 1999: Geometry seminar, University of Illinois at Urbana Champaign, USA.

- October 1999: Lecture at the sectional AMS meeting, Special Session "Gauge Theory", Charlotte NC, USA.

- October 1999: Lecture at the sectional AMS meeting, Special Session "Index theory", Austin, USA.

- August 1999: Opening Lecture at the Conference "Geometric properties of real and complex manifolds", Palermo, Italy.

- June 1999: Oberseminar Topologie, Max Planck Institut für Mathematik, Bonn, Germany.

- March 1999: Geometry Seminar, Florida State University, USA.

- January 1999: Tata Institute of Fundamental Research, Mumbai, India.

- July 1998: Oberseminar Topologie, Max Planck Institut für Mathematik, Bonn, Germany.

- January 1998: Stanford University, USA.

- December 1997: Lecture at the Joint Meeting of the Mexican Mathematical Society and of the American Mathematical Society, Oaxaca, Mexico.

- November 1997: Ohio State University, USA.

- July 1997: Lecture at the Topical Workshop in Geometry and Physics, Center for the Subatomic Structure of Matter, University of Adelaide, Australia.

- April 1997: University of Adelaide, Australia.

- January 1997: Lecture at the Workshop on 4-dimensional manifolds, MSRI, USA.

- May 1996: Stanford University, USA.

- December 1995: University of Bielefeld, Germany.

- September 1993: Lecture at the International Conference of Topology, Trieste Italy.

- May 1992: Lecture at the Workshop on Measure Theory and Real Analysis, Grado Italy.

Editor
- Journal of Noncommutative Geometry
  (Publishing House of the European Mathematical Society)

Conferences organized

1. International School and Conference of Noncommutative Geometry, Chern Institute Nankai University, Tianjin, PR China August 15-30, 2007. (co-organized with Guihua Gong and Guoliang Yu).

2. Workshop "Quantum Groups and Noncommutative Geometry", MPIM Bonn, August 6-8, 2007 (co-organized with Deepak Parashar).

3. Workshop "Hochschild and Cyclic (co-)homology and Applications to Geometry and Physics" MPIM Bonn, July 16-19, 2007 (co-organized with Hossein Abbaspour).

4. Alain Connes 60th birthday conference IHES/IHP March 29-April 6, 2007 (co-organized with Henri Moscovici and Georges Skandalis)

5. Workshop "Combinatorics and Physics" MPIM Bonn, March 2007. (co-organized with Kurusch Ebrahimi-Fard and Walter van Suijlekom)

6. Workshop "Renormalization", MPIM Bonn, December 15–16, 2006. (co-organized with Kurusch Ebrahimi-Fard)

7. "Fourth Annual Spring Institute on Noncommutative Geometry and Operator Algebras", Vanderbilt University, May 8–17, 2006. (co–organized with Dietmar Bisch, Alain Connes, Bruce Hughes, Gennadi Kasparov, and Guoliang Yu).

8. "Traces in Geometry, Number Theory, and Quantum Fields", MPIM September 28-October 7, 2005. (co–organized with Sergio Albeverio, Sylvie Paycha)

9. "International workshop on Noncommutative Geometry", school and workshop, IPM Tehran, Iran, September 11-22, 2005 (co–organized with Masoud Khalkhali, Shahin S. Jabbari, Mehrdad Mirshams Shahshahani).

10. "Arithmetic Geometry and High Energy Physics", Lorenz Center, Leiden, the Netherlands, August 29-September 2, 2005 (co–organized with Gunther Cornelissen and Andrew Waldron).

11. "Yuri Manin's Emeritierung Conference", MPIM Bonn February 24-26, 2005 (co–organized with Ivan Penkov and Don Zagier).

12. "Workshop on Noncommutative geometry and Number Theory, II", MPI June 14-18, 2004 (co–organized with A.Connes, C.Consani, and Yu.Manin).

13. "Workshop on Noncommutative geometry and Number Theory", MPI August 17-22, 2003 (co–organized with C.Consani and Yu.Manin).

14. "Frobenius manifolds, singularities, and quantum cohomology", MPI July 8-19, 2002 (co–organized with B. Dubrovin, C. Hertling, Yu. Manin, K. Saito).

15. "Maass wave forms, Selberg zeta function, and Spin chains" MPI June 10-14, 2002 (co–organized with J. Lewis and D. Zagier).

Students currently or previously supervised

Former students:

- Eugene Ha (MPI): PhD 2006; Current position: Assistant Professor, Johns Hopkins University, USA
  Thesis: "Quantum Statistical Mechanics of Shimura varieties"

- Jorge Plazas Vargas (MPI), PhD 2007; Current position: postdoc IHES
  Thesis: "Arithmetic structures on noncommutative tori with real multiplication"

- Snigdhayan Mahanta (MPI), PhD 2007; Current position: postdoc University of Toronto/IHES
  Thesis: "Algebraic aspects of Noncommutative Tori: the Riemann–Hilbert correspondence"

Current PhD students:

- Ivan Dynov (MPI)

- Dan Li (FSU)

- Bram Mesland (MPI)

- Abhijnan Rej (MPI)

- Raphael Torres-Ruiz (MPI)

- Ahmed Zainy (MPI)

- Dapeng Zhang (MPI)

Visiting students co-supervised:

- Majid Heydarpour (visiting student from IASBS Iran)

- Frederic Paugam (visiting student from Univ Rennes), PhD 2002; Current position: Maitre de conférence, Institut de Mathématiques de Jussieu, France
  Work: "Three examples of noncommutative boundaries of Shimura varieties"

- Ali Shoej-Fard (visiting student from Behesti Univ. Iran)

- Kester Tong (visiting student from Australian National University)

Teaching Experience

Courses taught:

- Analysis on manifolds (MIT 1999)

- Calculus (University of Chicago, 1995, 1996, 1997)

- Topology (MIT 1998)

- Morse theory and Floer theory (MIT 1998)

- Differential Geometry (MIT 2000)

- Riemann Surfaces (MIT 2000)

Other teaching experience:

- Calculus TA (MIT 1997, 1998)

- Complex variables TA (University of Chicago 1995)

- Differential Equations TA (University of Chicago 1996, MIT 1999)

- Projective geometry TA (University of Chicago 1996)

- Real Analysis TA (University of Milan 1992)