CURRICULUM VITAE

ALESSANDRA IOZZI

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I. Personal Data

<u>Birthplace and Birthdate</u>: Rome, Italy, 25 January 1959

<u>Citizenship</u>: Italy, U.S.A.

<u>Marital Status</u>: Divorced, two children (1992, 1995)

<u>Languages Spoken</u>: Fluent in English, French, Italian, some German

<u>Education</u>

Ph.D. in Mathematics, 1989, University of Chicago, Chicago, IL, U.S.A. (1985–1989)

Advisor: Robert J. Zimmer

S.M. in Mathematics, 1985, University of Chicago, Chicago. IL, U.S.A. (1984/1985)

Honors Laurea, 1982, University of Rome, Rome, Italy (1978–1982)

Advisor: Massimo A. Picardello

Professional Experience

ETH, Zürich, Switzerland (Oct. 2006–today): Senior Scientist

Universität Basel, Basel, Switzerland (Oct. 2004–Sept. 2006): FN Professor

Université de Strasbourg, France (2003–2006): Professor P.A.S.T.

Université de Strasbourg, France (Spring 2003): Visiting Professor

Université de Strasbourg, France (Spring 2002): Visiting Professor

Eidgenössische Technische Hochschule Zürich, Switzerland (Jan. 2002–Sept. 2004): Research Associate

FIM, Eidgenössische Technische Hochschule Zürich, Switzerland (Aug. 2000–Dec. 2001): Guest

University of Maryland, College Park, MD, U.S.A. (1992–2000): Assistant Professor

Institute for Advanced Study, Princeton, NJ, U.S.A. (1992/1993): Member

Mathematical Sciences Research Institute, Berkeley, CA, U.S.A. (1991/1992): Postdoctoral Fellow

University of Pennsylvania, Philadelphia, PA, U.S.A. (1989–1991): Lecturer (Postdoctoral position)

University of Chicago, Chicago, IL, U.S.A. (1986–1989): Lecturer

Invitations at Research Institutes (at least one week)

Institut Joseph Fourier, Université de Grenoble, Grenoble, June 2004

Mathematisches Forschungsinstitut Oberwolfach, Germany, May 2004

Erwin Schrödinger Institute of Mathematical Physics, Vienna, Austria, August 2002

Erwin Schrödinger Institute of Mathematical Physics, Vienna, Austria, July 2001

Mathematisches Forschungsinstitut Oberwolfach, Germany, February 2001

Isaac Newton Institute, Cambridge, UK, May–June 2000

Isaac Newton Institute, Cambridge, UK, March 2000

Isaac Newton Institute, Cambridge, UK, January 2000

ETH, Zürich, Switzerland, November 1999

University of Bielefeld, Bielefeld, Germany, July 1999

Centro de Investigacion en Matematicas, Guanajuato, Mexico, August 1998

Centro de Investigacion en Matematicas, Guanajuato, Mexico, January 1998

Universita' di Roma, Tor Vergata, Roma, Italy, June 1997

Universita' di Roma, Tor Vergata, Roma, Italy, January 1997

Centro de Investigacion en Matematicas, Guanajuato, Mexico, June 1996

University of Chicago, May 1994

University of Chicago, May 1993

University of Warwick, July 1992

II. Research Activity

A. Scientific Work

i. Articles published or accepted for publication

[1] *Graphs and convolution operators*, in "Topics in Modern Analysis", (1983), 187–208, I.N.d.A.M., Roma (in collaboration with M. Picardello)

[2] *Spherical functions on symmetric graphs*, Lecture Notes in Math. 992 (1983), 344–386, Springer Verlag, Berlin (in collaboration with M. Picardello)

[3] *Harmonic analysis on the free product of two cyclic groups*, Boll. Un. Mat. It. (6), 4-B (1985), 167–177

[4] *A non-linear extension of the Borel Density Theorem: applications to invariance of geometric structures and to smooth orbit equivalence*, Bull. Amer. Math. Soc. 23 (1990), 115–120

[5] *Invariant geometric structures: a non-linear extension of the Borel Density Theorem*, Amer. J. Math. 114 (1992), 627–648

[6] *Algebraic hulls and smooth orbit equivalence*, Trans. Amer. Math. Soc., 326 (1991), 371–384

[7] *Equivariant maps and purely atomic spectrum*, J. Funct. An., 124 (1994), 211–227

[8] *Algebraic hulls and the Følner property*, GAFA, 6-4 (1996), 666–688 (in collaboration with A. Nevo)

[9] *Limit sets of isometry groups of exotic hyperbolic spaces*, Trans. Amer. Math. Soc., 351-4 (1999), 1507–1530, (in collaboration with K. Corlette)

[10] *Boundary compactifications of SL(2,$\mathbf{R}$) and SL(2,$\mathbf{C}$)*, Forum Math., 11-3 (1999), 385–397 (in collaboration with J. Poritz)

[11] *The moduli space of boundary compactifications of* $SL(2,\mathbf{R})$, Geom. Dedicata, 76 (1999), 65-79 (in collaboration with J. Poritz)

[12] *Cartan-decomposition subgroups of SU(2,n)*, J. Lie Theory, 11 (2001) 505–543 (in collaboration with D. Witte)

[13] *Bounded cohomology, boundary maps and rigidity of representations into* $Homeo_+(S^1)$ *and* $SU(n,1)$, in "Rigidity in Dynamics and Geometry", Cambridge 2000, Springer Verlag, 2002, pp. 237–260

[14] *Boundary maps in bounded cohomology*, GAFA, 12 (2002), 281–292, (in collaboration with M. Burger)

[15] *Surface group representations with maximal Toledo invariant*, C. R. Math. Acad. Sci. Paris, Ser.I 336

(2003), 387–390, (in collaboration with M. Burger and A. Wienhard)

[16] *Tessellations of homogeneous spaces of classical groups of real rank two*, Geom. Dedicata, 103 (2004), 115–191 (in collaboration with D. Witte)

[17] *A vanishing theorem for the tangential de Rham cohomology of foliations with an amenable fundamental groupoid*, Geom. Dedicata, 103 (2004), 205–223 (in collaboration with K. Corlette and L. Hernàndez)

[18] *Bounded Kähler class rigidity of actions on hermitian symmetric spaces*, Ann. Sci. École Norm. Sup. (4) 37 (2004), no. 1, 77–103 (in collaboration with M. Burger)

[19] *On the cohomology of foliations with amenable groupoid*, in "Random Walks and Geometry", Vienna, 2001, de Gruyter, 2004, pp. 445–457

[20] *Equivariant embeddings of trees into hyperbolic spaces*, I.M.R.N., 22 (2005), 1331-1369 (in collaboration with M. Burger and N. Monod)

[21] *Maximal Representations of Surface Groups: Symplectic Anosov Structures*, Quarterly Journal of Pure and Appl. Math.,Volume in memory of Armand Borel, 1 (2005), no.3, 543–590 (in collaboration with M. Burger, F. Labourie and A. Wienhard)

[22] *Hermitian symmetric spaces and Kähler rigidity*, preprint (in collaboration with M. Burger and A. Wienhard), Transformation Groups, to appear, 27 pages, http://www.math.ethz.ch/˜iozzi/kahler.ps

[23] *A useful formula in bounded cohomology*, to appear in "Séminaire et Congres", 52 pages, http://www.math.ethz.ch/˜iozzi/formula.ps (in collaboration with M. Burger)

[24] *Bounded differential forms, generalized Milnor–Wood inequality and applications to rigidity theory*, Geom. Dedicata, to appear, 27 pages, http://www.math.ethz.ch/˜iozzi/difff.ps (in collaboration with M. Burger)

[25] *Bounds for cohomology classes*, in "Guido's book of conjectures", to appear in Ensign. Math. (in collaboration with M. Burger, N. Monod and A. Wienhard), 3 pages

ii. Preprints

[26] *Surface group representations with maximal Toledo invariant*, preprint (in collaboration with M. Burger and A. Wienhard), 87 pages, http://www.math.ethz.ch/˜iozzi/toledo.ps

[27] *A measurable Cartan theorem and applications to deformation rigidity in complex hyperbolic geometry,*

preprint (in collaboration with M. Burger), 23 pages, http://www.math.ethz.ch/˜iozzi/cartan.ps

[28] *Bounded cohomology and totally real subspaces in complex hyperbolic geometry*, preprint, 2001 (in collaboration with M. Burger), 14 pages, http://www.math.ethz.ch/˜iozzi/tr.ps

[29] *Bounded cohomology and representation varieties of lattices in $PSU(1, n)$*, preprint announcement, 2000 (in collaboration with M. Burger), 6 pages, http://www.math.ethz.ch/˜iozzi/ann-def.ps

[30] *Bounded cohomology and deformation rigidity in complex hyperbolic geometry*, preprint (in collaboration with M. Burger), 56 pages, http://www.math.ethz.ch/˜iozzi/deform.ps

III. Research Articles in preparation

[1]$_{\mathrm{p}}$ *On relative Property (T)*, preprint in preliminary version

[2]$_{\mathrm{p}}$ *Tight embeddings*, preprint in preliminary version (in collaboration with M. Burger and A. Wienhard)

[3]$_{\mathrm{p}}$ *Maximal representations and Anosov structures*, preprint in preliminary version (in collaboration with M. Burger and A. Wienhard)

[4]$_{\mathrm{p}}$ *Rotation numbers and geometry of commutators* in preparation

IV. Books

[1] *Rigidity in Dynamics and Geometry*, Proceedings of the Programme at the Newton Institute, Cambridge UK, March 2000, editors M. Burger and A. Iozzi, Springer Verlag, 2002

V. Books in preparation

[1] *Lectures on bounded cohomology*, based on the notes of a graduate course at ETH, 2002/03 and 2003/04

VI. Technical reports

[1] *Limit sets of isometry groups of exotic hyperbolic spaces*, Abstracts from the Workshop on Dynamical Systems and Related Topics, University of Maryland–Penn State Conference, 1994,

[2] *Embeddings of SL_2 and their moduli space*, Abstracts from the Workshop on Dynamical Systems and Related Topics, University of Maryland–Penn State Conference, 1997,

[3] *Applications of bounded cohomology to rigidity and to foliations*, Topological methods in group theory, Oberwolfach, Germany, 28 Jan. – 3 Feb. 2001

[4] *Bounded cohomology, maximal representations, rotation numbers and wuasimorphisms*, Geometric group theory, hyperbolic dynamics, and symplectic geometry, Oberwolfach, Germany, 23 Jul. – 29 Jul. 2006

B . Selected invited talks

"Journée de Géométrie", Université Louis Pasteur, Strasbourg, France, October 2006

"International conference and Instructional workshop on discrete groups", Beijing, August 2006

"Geometric group theory, hyperbolic dynamics, and symplectic geometry", Oberwolfach, July 2006

École Polytechnique, Palaiseau, France, May 2006

EPFL, Lausanne, Switzerland, April 2006

Université de Strasbourg, Strasbourg, France, March 2006

"Christmas Workshop", Karlsruhe Universität, Karlsruhe, Germany, December 2005

Baruch College, New York, NY, USA, October 2005

"From topology to arithmetic: in memory of Armand Borel", ETH, Zürich, Switzerland, June 2005

"Workshop on Higgs bundles and surface group representations", Consejo Superior de Investigaciones Científicas, Madrid, Spain, June 2005

Columbia University, New York, NY, USA, February 2005

CUNY, Graduate Center, New York, NY, USA, February 2005

ETH, Geometry Seminar, Zürich, Switzerland, January 2005

Université de Fribourg, Fribourg, Switzerland, January 2005

"Non-Positively Curved Geometries, Discrete Groups and Rigidity", Université de Grenoble, Grenoble, France, June 2004 (minicourse)

"Shimura Varieties, Lattices and Symmetric Spaces", Monte Veritá, Ascona, Switzerland, May 2004 (minicourse)

Universität Wien Seminar, Wien, Austria, March 2004

Universität Wien Colloquium, Wien, Austria, March 2004

Universität Bern Colloquium, Bern, Switzerland, November 2003

"Geometry and cohomology in group theory", University of Durham, Durham, UK, July 2003

"Ergodic properties of geometric group actions", Schloss Ringberg, Germany, June 2003

Universität Basel, Basel, Switzerland, June 2003

"International Conference on GROUP THEORY: combinatorial, geometric, and dynamical aspects of infinite groups", Gaeta, Italy, June 2003

Université de Paris Sud, Orsay, France, May 2003

Université de Strasbourg, Strasbourg, France, March 2003

“Aspects of foliations theory in geometry, topology and physics”, ESI, Vienna, Austria, August 2002

”Géométrie et dynamiques de groupes”, CIRM, Luminy, France, July 2002

“Asymptotic topology, foliations and dynamical systems”, Münich, Germany, July 2002

“Advances in Rigidity”, FIM, ETH Zentrum, Switzerland, June 2002

“Actions sur les variétés de petite dimension”, Les Diablerets, Switzerland, March 2002

Université de Strasbourg, Strasbourg, France, December 2001

Yale University, New Haven, CT, USA, October 2001

“Random walks and geometry”, ESI, Vienna, Austria, July 2001

“Borel Seminar”, Bern, Switzerland, May 2001

Université d’Avignon, Avignon, France, April 2001

Université de Strasbourg, Strasbourg, France, April 2001

Oklahoma State University Colloquium, Stillwater, OK, USA, October 2000

Université de Strasbourg, Strasbourg, France, May 2000

“Rigidity in Dynamics and Geometry” Conference, Cambridge, UK, March 2000

Université de Neuchatel, Neuchatel, Switzerland, March 2000

University of Manchester, Manchester, UK, January 2000

ETH, Zürich, Switzerland, November 1999 (two talks)

Université de Lausanne, Lausanne, Switzerland, November 1989

Université de Neuchatel, Neuchatel, Switzerland, November 1998

Universita’ di Roma, Tor Vergata, Roma, Italy, March 1998

Universita’ di Napoli, Napoli, Italy, March 1998

CIMAT, Guanajuato, Mexico, January 1998

“Maryland–PennState regional Conference on Dynamical Systems and Related Topics”, State College, PA, USA, October 1997

Universita’ di Roma, Tor Vergata, Roma, Italy, June 1997

Rigidity Conference, ESI, Vienna, Austria, February 1997

CIMAT, Guanajuato, Mexico, June 1996

CUNY, Graduate Center, New York, NY, USA, November 1994

University of Chicago, Chicago, IL, USA, May 1994

"Maryland–PennState regional Conference on Dynamical Systems and Related Topics", College Park, MD, USA, March 1994

University of Pennsylvania, Philadelphia, PA, USA, December 1993

University of Minnesota, Minneapolis, MN, USA, May 1993

University of Maryland, College Park, MD, USA, March 1992

University of Oregon Colloquium, Eugene, OR, USA, March 1992

University of Iowa, Iowa City, IA, USA, February 1992

University of Tennessee at Knoxville, Knoxville, TN, USA, February 1992

Ohio State University, Columbus, OH, USA, February 1991

I.S.I. Guccia - Conference in Discrete Groups and Ergodic Theory, Palermo, Italy, December 1990

CUNY, Graduate Center, New York, NY, USA, November 1990

UCLA, Summer Research Institute, Los Angeles, CA, USA, July 1990

V Rigidity Conference, Northwestern University, Chicago, IL, USA, March 1990

Bryn Mawr Colloquium, Bryn Mawr, PA, USA, April 1990

IV Rigidity Conference, University of Colorado, Boulder, CO, USA, May 1989

Tufts University, Boston, MA, USA, February 1989

XII Congresso U.M.I., Torino, Italy, USA, September 1987

"Geometrie degli spazi di Banach e questioni connesse", Milano Italy, October 1983

"Conference in Harmonic Analysis", St. Louis, MO, USA, September 1983

XII Congresso U.M.I., Perugia, Italy, September 1983

IV Convegno Nazionale di Analisi Armonica, Roma, Italy, January 1983

C. Grants and Fellowships

Institute for Advanced Study, Princeton, NJ, U.S.A. Fall term 2005–2006, March 2006

Fonds National Suisse, EUCOR Basel, EUCOR Strasbourg, EUCOR Karlsruhe, I.R.M.A. Strasbourg, Université de Strasbourg, Service des Relations Internationales, Universität Basel: funds to organize the conference "Bounded Cohomology, Harmonic Maps and Higgs bundles", Strasbourg and Basel, 14–19 March 2005

Assistant Professor Fellowship, Fonds National Suisse, 10-01-2004/30-09-2008

Mathematisches Forschungsinsitut Oberwolfach, Research in Pairs, 2 weeks in March 2003

"Marie Heim-Voegtlin" Fellowship, Fonds National Suisse, 01-01-2003/30-09-2003

ETH Research Project, 01-01-2002/31-12-2002

Mathematisches Forschungsinsitut Oberwolfach, Research in Pairs, 2 weeks in February 2001 and February 2002,

Research grant to participate to the "Ergodic theory, number theory and geometric rigidity" special semester, Newton Institute, Cambridge, UK, January–June 2000

National Science Foundation grant DMS90-01959, U.S.A., 1990/92

AMS travel grant to attend the ICM-90 in Kyoto, Japan

C.N.R. (Italian Nationalfond) fellowship, 10-01-1987/06-30-1989

M.P.I. (Italian Ministry of Public Instruction) fellowship, 1984/87

University of Chicago Fellowship, 1984/89

Fulbright fellowship, 1984

University fellowship, University of Rome, Italy, 1984

I.N.d.A.M. fellowship, Rome, Italy, 11-01-1982/10-31-1984

C.N.R. (Italian Nationalfond) fellowship, 11-01-1981/10-31-1982

III. Teaching and Advising

A. Teaching

Graduate Courses:

Lie Groups I	University of Pennsylvania, Fall 1990
Lie Groups II	University of Pennsylvania, Spring 1991
Ergodic Theory and Lie Group Actions	University of Maryland, Fall 1994
Functional Analysis	University of Maryland, Fall 1995
Foundations of Topology	University of Maryland, Fall 1997
Dynamical Systems	University of Maryland, Fall 1998
Bounded cohomology	ETH, Winter 2002 and Summer 2003
Rigidity of Group Actions on the Circle	ETH, Summer 2004
Lattices and Bounded Cohomology	Universität Basel, Fall 2004
Lattices in $\mathrm{SL_n}$	Universität Basel, Spring 2005
Introduction to Lie Groups	Universität Basel, Fall 2005 and Spring 2006

Upper Level Undergraduate Courses:

Complex Analysis	University of Pennsylvania, Fall 1989
Number Theory	University of Maryland, Spring 1995 and Spring 2000
Linear Algebra for Scientists and Engineers	University of Maryland, Spring 1996
Differential Geometry of Curves and Surfaces	University of Maryland, Fall 1996
Complex Variables for Scientists and Engineers	University of Maryland, Spring 1997
Algebraic Structures	University of Maryland, Fall 1997
Linear Algebra for Math Majors	University of Maryland, Spring 1998
Probability and Statistics	University of Maryland, Fall 1999
Algèbre et Analyse	Université de Strasbourg, Spring 2002
Bounded Cohomology	ETH, Winter 2006
Application of Bounded Cohomology (student seminar)	ETH, Winter 2006
Introduction to Lie Groups	ETH, Spring 2007

Honor Courses:

Honor section of Multivariable Calculus (implemented with *Mathematica*)	University of Maryland, Spring 1996 and Fall 1996
Honor section of Ordinary Differential Equations (implemented with *Mathematica*)	University of Maryland, Spring 1998
Concepts and Applications of Advanced Mathematics for non-Scientists	University of Maryland, Fall 1998 and Spring 2000

Lower Level Undergraduate Courses:

Calculus	University of Chicago, 1985–89
Ordinary Differential Equations (implemented with *Mathematica*)	University of Maryland, Fall 1993, Fall 1994 and Spring 1999
Multivariable Calculus and Applications I	University of Pennsylvania, Fall 1989
Multivariable Calculus and Applications II	University of Pennsylvania, Spring 1990 and Spring 1991
Multivariable Calculus (implemented with *Mathematica*)	University of Maryland, Spring 1994, Spring 1996 Spring 1998 and Fall 1999
Precalculus (with graphic calculators)	University of Maryland, Summer 1996
Sequences and Series for Life Scientists	Université de Strasbourg, Spring 2003
Analysis in Several Variables (Exercise sessions)	Université de Strasbourg, Spring 2003
Analysis in Several Variables (Course and exercise sessions)	Université de Strasbourg, Spring 2004
Analysis (Course and exercise sessions)	Université de Strasbourg, Fall 2005

B. Advising

I. Ph. D. Students: (1) Florence Newberger, Ph.D. 1998, University of Maryland, (co-advised with D. Rudolph)

(2) Tobias Hartnick, ETH, in progress

(3) Johannes Lieberherr, ETH, in progress

II. Postdocs: (1) Anna Wienhard, Ph.D. 2004 (now I.A.S. and University of Chicago)

(2) Stefan Wenger, Ph.D. 2003 (now E.S.I. and New York University)

(3) Gabriele Link, Ph.D. 2002

C. Advising (other than research direction)

I. Undergraduate: (i) *Advise-5er*: University of Maryland, 1996–97, 1997–98 and 1998–99, 5 students each year

(ii) *Math major advisor*: University of Maryland, 1996/97 and 1997/98, approximately 7–10 students each semester

II. Graduate: *Graduate Student Advisor, University of Maryland*

IV. Services

Committees

Policy Committee, University of Maryland, 1993/94, 1994/95

Salary Committee, University of Maryland, 1994, 1996

Hiring Committees, University of Maryland, 1994-1998, ETH, 2006/07

Member of several Oral Committees, University of Maryland

Member of several M.A. Thesis Committees, University of Maryland

Member of several Ph.D. Thesis Committees, University of Maryland, Université de Strasbourg and Université de Mulhouse

Member of the Arbitrary and Capricious Grading Review Committee, University of Maryland, 1995/1996 and 1996/97

Member of Graduate Admissions/Financial Aid/Recruiting Committee, University of Maryland, 1996/97 and 1997/98

Member of the Resource Group for the Graduate Education Task Force, University of Maryland, 1996

Grader for the Analysis and the Topology qualifying exams, University of Maryland

Prepared the Topology qualifying exams, University of Maryland

Seminars, Conferences, Workshops and Outreach Activities Organized

Colloquium, University of Pennsylvania, 1990/91

Geometry/Topology Seminar, University of Maryland, Spring 1994, 1994/95, 1995/96

Showing of the movie "The Shape of Space" by Jeff Weeks: attendance of over 1000 people, from high school students to faculty members

Special session "Automorphism groups of geometric structures" at the American Mathematical Society Eastern Section meeting, College Park, MD, April 1997

Reading Seminar "Introduction to arithmetic groups", ETH, Winter 2001

Reading seminar "Symplectic group theory", ETH, Winter 2002

"Graduate students colloquium (Graduate School in Arithmetic and Geometry)", ETH, 2002/03

"Graduate colloquium (Zürich Graduate School in Mathematics)", ETH, 2003-today

Conference "Bounded Cohomology, Harmonic Maps and Higgs Bundles", Strasbourg and Basel, 14–19 March 2005.

Workshop "Isoperimetric inequalities in Lie groups", University of Basel, 30–31 March 2005

Reading Seminar Basel–Zürich, “Higher Teichmüller theories”, ETH, Winter 2006

Reading seminar “Patterson–Sullivan theory”, ETH, Summer 2007

Other Activities

Reviewer for various grants (including National Science Fundation, U.S.A., ISF Israel, DFG Germany)

Reviewer for Zentralblatt fúr Mathematik

Referee for several scientific journals