

CRISTIANA BERTOLIN

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<https://sites.google.com/site/cristianabertolin/home>

- Generalities** Birthdate and Birthplace: 9 May 1973 - Padova (Italy).
Citizenship: italian.
Family status: single.
Children: Massimiliano Nicola (10/10/08), Lucrezia Elettra and Ludovica Eloisa (21/11/12).
Languages known: Italian, French, English, German.
- Education** **M.Sc.**, Università di Padova, 1995.
Ph.D., Université Paris VI, 2000.
Habilitation, ETH Zürich, 2007.
Qualification campagne 2018, section 25 Mathématiques, corps professeur des Universités.
- Permanent Positions** Ricercatore universitario, Università di Torino, from Dec. 2010 until Sept. 2015.
Professore associato, Università di Torino, from Oct. 2015 until Sept. 2021.
Professore associato, Università di Padova, from Oct. 2021.
- Visiting Positions
in Research Centers** Feb. 2000 Centre International de Rencontres Mathématiques, Luminy (France).
Nov. 2000 Mathematisches Forschungsinstitut, Oberwolfach (Germany).
Sept. 2003 Max Plank Institute for Mathematics, Bonn (Germany).
Oct. 2004 Institute for Advanced Study, Pinceton (USA).
Oct. 2005 Institute for Advanced Study, Pinceton (USA).
May 2007 Mathematisches Forschungsinstitut, Oberwolfach (Germany).
June 2007 Max Plank Institute for Mathematics, Bonn (Germany).
July 2007 Centre International de Rencontres Mathématiques, Luminy (France).
Sept. - Oct. 2009 Institute for Mathematical Research, ETH Zürich (Switzerland).
Feb. - March 2014 Institut des Hautes Études Scientifiques, Paris (France).
May 2018 Centre International de Rencontres Mathématiques, Luminy (France).
March - April 2019 Institut des Hautes Études Scientifiques, Paris (France).
May - June 2019 Scuola Normale Superiore, Pisa (Italy).
March - April 2022 Institut des Hautes Études Scientifiques, Paris (France).
- Research Stays
at other Institutions** Università di Padova (Italy), Université Paris 6 (France), Universität von Münster (Germany),
Università di Siena (Italy), Université de Strasbourg (France), Tucson University (USA), Uni-
versità di Roma Tor Vergata (Italy), Washington University (USA), Universitat de Barcelona
(Spain), Universität von Regensburg (Germany), ETH Zürich (Switzerland), Università di
Roma La sapienza (Italy), Université de Rennes (France), Università di Milano (Italy), Uni-
versità di Genova (Italy), Universität von Düsseldorf (Germany), Université de Montpellier
(France).
- Professional
Experience** Oberassistent at the ETH Zürich, Sept. 2004 - Aug. 2007.
W2-Vertretung at the University of Regensburg, March. 2009 - Aug. 2009.
W2-Vertretung at the University of Düsseldorf, Oct. 2010 - Feb. 2012.

Selected Awards and Grants	<p>Fellowship from the Istituto Nazionale di Alta Matematica, Sept. 1995 - Aug. 1996. This grant funded my doctoral studies for 1 year at the University Paris VI.</p> <p>Recipient of the “Allocation de recherche” at the University Paris VI, Sept. 1996 - Aug. 1999. This grant funded my doctoral studies for 3 years.</p> <p>Recipient of the “Attaché temporaire d’enseignement et de recherche” at the University Paris VI, Sept. 1999 - Aug. 2000.</p> <p>Stipend from the Graduirtenkollegs <i>Analytische Topologie und Matageometrie</i> at the University of Münster, Sept. 2000 - Aug. 2002, (Declined in Jan. 2002).</p> <p>Financial support from the network of the European Community <i>Arithmetic Algebraic Geometry</i> at the University of Strasbourg, Jan. 2002 - Aug. 2002.</p> <p>Fellowship from the HWP <i>Programm Chancengleichheit für Frauen in Forschung und Lehre</i> at the University of Regensburg, Sept. 2002 - Aug. 2004.</p> <p>Financial support from the DFG-Forschungsgruppe “<i>Algebraische Zyklen und L-Funktionen</i>” of the University of Regensburg, Sept. 2007 - Oct. 2008.</p> <p>Recipient of the “Assegno di ricerca” at the University of Milano, March 2010 - Feb. 2012 (Declined in Dec. 2010).</p> <p>Invitation and financial support from the Institute for Mathematical Research (FIM), ETH Zürich, Sept. - Oct. 2009.</p> <p>Invitation and financial support from the Institut des Hautes Études Scientifiques (IHES), Paris, Feb. - March 2014.</p> <p>Invitation and financial support from the Institut des Hautes Études Scientifiques (IHES), Paris, March - April 2019.</p> <p>Invitation and financial support from the Institut des Hautes Études Scientifiques (IHES), Paris, March - April 2022.</p>
Partecipation to Research Projects	<p>PRIN <i>Geometria algebrica aritmetica e teoria dei numeri</i>, Feb. 2013 - Jan. 2016</p> <p>Progetti di Ricerca locale, 2012-2016.</p> <p>Ricerca Finanziata dall’Università (ex 60%), 2012-2021.</p>

University Service	<p>Organization of the “Girls Day 2011”, Düsseldorf.</p> <p>Introductory lecture for scholars <i>Vektoren und Vektorräume</i>, Düsseldorf, 2011.</p> <p>Secretary of the CCL at the University of Torino, Jan. 2011 - June 2012.</p> <p>Member of the Commissione per la Didattica at the Uni. of Torino, Oct. 2015 - Sept 2018.</p> <p>Member of the Commissione Giudicatrice per i bandi di concorso per premi per studenti, per progetti di eccellenza fuori sede e mobilità internazionale, Oct. 2016 - Oct. 2018.</p> <p>Member of the Collegio Docenti del “Dottorato in Matematica Pura e Applicata” of the Uni. of Torino, Oct. 2016 - Oct. 2018.</p> <p>Member of the Commissione Erasmus - Internazionalizzazione of the Uni. of Torino, Oct. 2018 - Sept 2021</p> <p>President of the Commissione Biblioteca at the Uni. of Torino, Oct. 2018 - Sept 2021</p> <p>Member of the Commissione Ranking of the Uni. of Padova, from Oct. 2021</p>
Organization of Conferences	<p><i>A categorical day in Turin</i>, 14th May 2015</p> <p><i>A categorical day in Turin</i>, 12th May 2017</p> <p><i>A categorical day in Turin</i>, 25th February 2019</p> <p><i>School (and Workshop) on diophantine geometry and special varieties</i>, 16th-21th Sep. 2019</p>
Organization of Colloquium	<p>Prof. Laurent Lafforgue, <i>Fourier transforms and Poisson formulas on reductive groups</i>, Uni. of Turin, 26th March 2015</p> <p>Prof. Gerd Faltings, <i>Arakelov geometry</i>, Politecnico of Turin, 29th May 2018</p> <p>Prof. Gerd Faltings, <i>The product theorem in diophantine approximation</i>, Uni. of Turin, 30th May 2018</p>
Comité de Sélection	<p>Member of the “comité de sélection pour recruter un maître de conférences en géométrie algébrique, arithmétique ou théorie des représentations”, Uni. of Montpellier, Mai 2019</p> <p>Member of the “comité de sélection pour recruter un maître de conférences en géométrie algébrique, géométrie arithmétique”, Uni. of Bordeaux, Mai 2019</p> <p>Member of the “comité de sélection pour recruter un maître de conférences en théorie des nombres”, Uni. Paris 7, Mai 2020</p>
Received handwritten letters	<p>1994, B. Dwork</p> <p>1995, B. Dwork</p> <p>2000, S. Lang</p> <p>2001, P. Deligne, L. Breen</p> <p>2005, Y. Manin</p> <p>2006, P. Gabriel</p> <p>2012, E. M. Vitale</p>

Teaching Experience

By this time in my career, I have a varied experience in teaching, covering the complete spectrum from the most advanced specialized courses for graduate students to basic seminars for high school students. I have developed my teaching experiences in four different countries: Italy, France, Germany and Switzerland. I speak currently four languages (Italian, French, German, English) and I teach in these four languages. Concretely here is my teaching:

Lectures:

Tannaka-Kategorien und motivische Galoisgruppen, Regensburg SS 03
Introduction to categories, ETH Zürich SS 07
Homologische Algebra, Regensburg SS 09
Algebra lineare, Padova a.a. 2009/10
Lineare Algebra I, Düsseldorf WS 10/11
Lineare Algebra II, Düsseldorf SS 11
Lineare Algebra I, Düsseldorf WS 11/12
Algebra Lineare e Geometria, Torino a.a. 2011/12
Algebra 2, Torino a.a. 2013/14
Geometria Superiore, Torino a.a. 2013/14
Geometria Superiore, Torino a.a. 2014/15
Geometria 4, Torino a.a. 2014/15
Metodi Geometrici, Torino a.a. 2015/16
Geometria 4, Torino a.a. 2015/16
Geometria e algebra lineare 1, Torino a.a. 2016/17
Metodi Geometrici, Torino a.a. 2016/17
Geometria 4, Torino a.a. 2016/17
Geometria e algebra lineare 1, Laurea in Fisica, Torino a.a. 2017/18
Topologia Algebrica, Torino a.a. 2017/18
Teoria degli anelli commutativi, Torino a.a. 2017/18
Geometria e algebra lineare 1, Laurea in Fisica, Torino a.a. 2018/19
Istituzioni di Matematiche e Metodi Statistici, Laurea in Scienze Naturali, Torino a.a. 2019/20
Geometria e algebra lineare 1, Laurea in Fisica, Torino a.a. 2019/20
Istituzioni di Matematiche e Metodi Statistici, Laurea in Scienze Naturali, Torino a.a. 2020/21
Geometria e algebra lineare 1, Laurea in Fisica, Torino a.a. 2020/21
Fondamenti di algebra lineare e geometria, Laurea in Ingegneria DII, Padova a.a. 2021/22
Geometria, Laurea in Astronomia e Fisica, Padova a.a. 2021/22
Fondamenti di algebra lineare e geometria, Laurea in Ingegneria DII, Padova a.a. 2022/23
Geometria, Laurea in Astronomia e Fisica, Padova a.a. 2022/23

Organization of seminars for students:

Algebra und Zahlentheorie, Regensburg WS 02/03
Elementare Zahlentheorie, Regensburg SS 03
Elementare Zahlentheorie, Regensburg WS 03/04
Analytische Geometrie, Regensburg SS 04
Local Fields, ETH SS 06
Einladungen zur Zahlentheorie, Düsseldorf WS 11/12

Bachelor Students	M. Banchio, Towards modern algebraic geometry, Torino, 2016 G. Schiavon, Weil pairing, Torino, 2018 C. Costa, Anelli e loro proprietà, Torino, 2018 V. Spinelli, Introduzione agli anelli e ai moduli, Torino, 2018
Master Students	A. Ricciardi, Dualità di Serre, Torino, 2016 E. Malacrino, Alcuni teoremi di finitezza per curve ellittiche, Torino, 2016 M. Banchio, Derived Picard stacks, Torino, 2018 P. Panero, Extensions in Grothendieck's theory, Torino, 2018 E. Tron, Effective André-Oort, Torino, 2018
External Examiner for Ph.D. Thesis	H. Partsch, The liftability of elliptic surfaces, Düsseldorf, 2011. C. Rivera Arredondo, Height pairings of 1-motives, Milano, 2018.

Publications

- 1) *G-fonctions et cohomologie des hypersurfaces singulières*,
Bull. Austral. Math. Soc. **55** (1997), no. 3, pp. 353–383.
- 2) *G-fonctions et cohomologie des hypersurfaces singulières II*,
Bull. Austral. Math. Soc. **58** (1998), no. 2, pp. 189–198.
- 3) *The Mumford-Tate group of 1-motives* ,
Ann. de l'Inst. Fourier **52** (2002), no. 4, pp. 1041–1059.
- 4) *Périodes des 1-motifs et transcendance*,
J. Number Th. **97** (2002), no. 2, pp. 204–221.
- 5) *Le radical unipotent du groupe de Galois motivique d'un 1-motif*,
Math. Ann **327** (2003), no. 3, pp. 585–607.
- 6) *Motivic Galois groups of 1-motives: a survey*,
Mathematisches Institut, Georg-August-Universität Göttingen: Seminars Summer Term 2004, Uni-
versitätsdrucke Göttingen (2004) pp. 83–89.
- 7) *Biextensions and 1-motives*,
C. R. Math. Rep. Acad. Sci. Canada **27** (2005), no. 3, pp. 65–71.
- 8) *Motivic Galois theory for 1-motives*,
Ann. Sci. Math. Québec **32** (2008), no. 2, pp. 105–124.
- 9) *Extensions and biextensions of locally constant group schemes, tori and abelian schemes*,
Math. Z. **261** (2009), no. 4, pp. 845–868.
- 10) (with C. Mazza) *Biextensions of 1-motives in Voevodsky's category of motives*,
Int. Math. Res. Not. IMRN **2009** (2009), no. 19, pp. 3747–3757.
- 11) *Multilinear morphisms between 1-motives*,
J. Reine Angew. Math. **637** (2009), pp. 141–174.
- 12) *Extensions of Picard stacks and their homological interpretation*,
J. of Algebra **331** (2011), no. 1, pp. 28–45.
- 13) *Homological interpretation of extensions and biextensions of 1-motives*,
J. of Number Theory **132** (2012), no. 10, pp. 2103–2131.
- 14) *Biextensions of Picard stacks and their homological interpretation*,
Adv. Math. **233** (2013), no. 1, pp. 1–39.
- 15) (with A. Tatar) *Extensions of Picard 2-Stacks and the cohomology groups Ext^i of length 3 complexes*,
Ann. Mat. Pura Appl. **193** (2014), no. 1, pp. 291–315.
- 16) (with Ahmet Tatar) *Higher dimensional study of extensions via torsors*,
Ann. Mat. Pura Appl. **197** (2018), no. 2, pp. 433–468.
- 17) (with Sylvain Brochard) *Morphisms of 1-motives defined by line bundles*,
Int. Math. Res. Not. IMRN **2019** (2019), no. 5, pp. 1568–1600.
- 18) (with Federica Galluzzi) *A note on divisorial correspondences of semi-abelian varieties*,
Comm. Algebra **48** (2020), no.7, pp. 3031–3034.
- 19) *Third kind elliptic integrals and 1-motives* (with an appendix by M. Waldschmidt and a letter of Y. André),
J. Pure Appl. Algebra **224** (2020), no.10, 106396, 28 pp.
- 20) (with Federica Galluzzi) *Brauer groups of 1-motives*,
J. Pure Appl. Algebra **225** (2021), no.11, 106754, 22 pp.
- 21) (with P. Philippon, B. Saha, E. Saha) *The semi-abelian analogue of Schanuel's conjecture and its applications*,
J. Algebra **596** (2022), pp. 250–288.

Invited Talks**1997**

Colloquio dei giovani ricercatori, Siena

2000

Conference “Introduction à la cohomologie motivique”, Luminy

DMV Seminar “Characteristic classes of connections, Riemann-Roch theorems and analogies with epsilon factors”, Oberwolfach

2001

Number Theory Lunch Seminar, Max Plank Institut Bonn

Séminaire de Théorie des Nombres, Besancon

Journées Arithmétiques, Lille

Conference “Advanced course on modular forms and p-adic Hodge theory”, Barcelone

Séminaire de Théorie des Nombres, Caen

Séminaire de Théorie des Nombres, Rennes

Colloquium, Regensburg

Séminaire de Theorie des Nombres, Lille

Oberseminar von Prof. S. Bosch, Münster

2002

Séminaire de géometrie arithmétique, Strasbourg

Seminario di Teoria dei Numeri, Milano

International Conference on Arithmetic Algebraic Geometry, Regensburg

Number Theory Seminar, ETH Zürich

Séminaire de géometrie arithmétique, Strasbourg

2003

Seminario di geometria, Padova

Seminario di algebra e geometria, Roma “La Sapienza”

Seminario al MeMoMat della Sapienza, Roma

Séminaire de Théorie des Nombres, Toulouse

2004

Colloquio giovani ricercatori all'estero, Padova

Seminario di geometria, Padova

Number Theory Seminar, ETH Zürich

Seminar von Prof. Y. Tschinkel, Göttingen

Seminar von Prof. S. Schröer, Bayreuth

Conference “Galois theory and arithmetic”, Bonn

Oberseminar von Prof. M. Knebusch, Regensburg

Conference “Motives, K-theory and Arithmetical Geometry”, Sestri Levante

Séminaire d'algèbre et de théorie des nombres, Lausanne

2005

Séminaire de théorie des nombres, Grenoble

Seminario di geometria, Padova

2006

Colloque jeunes chercheurs, Rennes

2007

Colloquium, University of Zürich

Seminar Arithmetische Geometrie, Humboldt Universität Berlin

**Invited Talks
continued****2008**

Seminar, Regensburg
Séminaire d'Arithmétique, Saint-Etienne
Colloquium, Mons
Seminario di algebra e geometria, Genova
Conference for young scientists, Regensburg

2009

Seminar at MATCH, Heidelberg
Colloquium, Paderborn

2010

Seminario di algebra e geometria, Roma 1 "La Sapienza"
Seminario di teoria dei numeri, Roma 2 "Tor Vergata"
Colloquium, Saarbrücken
Seminario, Milano
Colloquium, Graz
Séminaire de théorie des nombres, Paris IV "Jussieu"
Seminario, Perugia
Seminario, Torino
Colloquium, Paderborn

2011

Colloquium, Luxembourg
Colloquium, Düsseldorf

2012

Séminaire, Clermont-Ferrand
Seminario, Torino

2013

Colloquium, Basel

2014

Genova-Torino-Milano Seminar, Torino
Seminario, Trieste

2015

Séminaire, Montpellier

2017

Journées Arithmétiques, Caen

2018

Genova-Nice-Torino Meeting, Torino
Séminaire, GEPbD, Paris VI

2019

Séminaire, Caen
Seminario, Scuola Normale Superiore

2020

Seminario, Udine
The Palmetto Number Theory Series (PANTS), via Zoom

Invited Talks

2021

Number Theory Online 2021, via Zoom

Séminaire, Caen, via BigBlueButton

Be'er Sheva Algebraic Geometry Seminar, via Zoom

Fields Number Theory Seminar, via Zoom

Geometry, Arithmetic and Differential Equations of Periods (IMPA), via Zoom