

# Curriculum Vitae of Carlo Mazza

## Vita

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Data Carlo Mazza, born on October 4th 1974 in Genova (Italy).

### *Education*

- 2003 **Ph.D.** in Mathematics, Rutgers - The State University of New Jersey, Piscataway, New Jersey, USA  
**Schur functors and motives**  
Advisor: C. Weibel
- 1998 **Laurea** in Mathematics (Summa cum laude), Università degli Studi di Genova in Genoa, Italy  
**Cicli algebrici e il gruppo di Chow** (Algebraic cycles and the Chow group)  
Advisor: L. Barbieri Viale

### *Positions*

- 2010 Ricercatore, Dipartimento di Matematica “Federigo Enriques”, Università di Milano.
- 2008 Assegno di Ricerca, Dipartimento di Matematica, Università di Genova, renewed.
- 2007 Post-doc at the Naturwissenschaftliche Fakultät I - Mathematik of the Universität Regensburg, Germany.
- 2006 Assegno di Ricerca, Dipartimento di Matematica, Università di Genova, funded by the Fondazione Cassa di Risparmio di Genova e Imperia.
- 2005 Member, Institute for Advanced Study in Princeton, NJ, USA.
- 2004 Young Researcher, Institut de Mathématiques de Jussieu, Université Paris VII, Paris, France.
- 2002 Teaching Assistant, Rutgers University, continued until 2003.

### *Honors*

- 2004 Invited for three weeks in Japan at Hiroshima University and at the University of Tokyo.
- 2001 Fellowship from *Weill Endowment*, by Rutgers University.
- 1998 Italian Scholarship *Borsa di Studio per l'Estero A.A. 1999-2000* (renewed twice), by the Istituto Nazionale di Alta Matematica “F. Severi”, in Rome, Italy.

### *Affiliations and other activities*

Referee for the journal *Advances in Mathematics*.

Member of the American Mathematical Society and of the Unione Matematica Italiana (Italian Mathematical Society).

## Research

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### *Research interests*

Algebraic geometry and algebraic  $K$ -theory, especially algebraic cycles, intersection theory, and motives.

### *Publications*

**On the  $K$ -theory of motives**, with Chuck Weibel, undergoing peer review for international journal.

**Finite dimensionality after Kimura, O'Sullivan, Deligne, etc.**, with Alessio Del Padrone, in preparation.

**The dimension of Schur-finite motives**, with Markus Spitzweck, in preparation.

**Biextensions and 1-motives**, with Cristiana Bertolin, Oberwolfach reports, 2010, 55.

**Biextensions of 1-motives in Voevodskys category of motives**, with Cristiana Bertolin, Int. Math. Res. Not. IMRN, 2009, 19, pp. 37473757.

**Schur-finite motives and trace identities**, joint with Alessio Del Padrone, to be published on the Bollettino dell'Unione Matematica Italiana for the 2007 U.M.I. Meeting in Bari, Italy.

**Schur-finiteness and endomorphisms universally of trace zero via certain trace relations**, with Alessio Del Padrone, Communications in Algebra, 37, 2009, pp. 32-39.

**Lecture notes on motivic cohomology**, with Vladimir Voevodsky and Charles Weibel, *Clay Mathematics Monographs*, 2. American Mathematical Society, Providence, RI; Clay Mathematics Institute, Cambridge, MA, 2006. xiv+216 pp. ISBN: 978-0-8218-3847-1; 0-8218-3847-4.

**Schur finiteness and nilpotency**, with Alessio Del Padrone, in *Comptes Rendus Mathematique*, **341**, 2005, pp. 283-286.

**Finite dimensional motives**, to appear in the "Proceedings of the *Symposium on Algebraic Geometry in Hiroshima*".

**Schur functors and motives**, in "*K*-theory", **33**, 2004, pp. 89-106, 2004.

**Schur functors and motives**, "Oberwolfach Reports", vol. 1(2) 2004.

### *Talks*

2012 **Motivi di dimensione finita, in un certo senso (Motives are finite dimensional, in some sense)** at the Seminario di Dipartimento of the Dipartimento di Matematica of the Università di Milano, 31/1.

2010 **Biextensions and 1-motives**, at the Mini-workshop: 1-Motives in the Mathematisches Forschungsinstitut Oberwolfach in Oberwolfach, Germania, 12/12.

**The  $K$ -theory of motives**, at the Rutgers Algebra Seminar, Rutgers University, 5/4.

2007 **Finiteness conditions in the category of motives** at the *Oberseminar: Motive und algebraische Geometrie, Algebraische Zykeln* at the Mathematisches Institut of the Universität München in Munich, Germany, 11/29.

**Motivi Schur-finiti e identità di tracce** (invited speaker) at the *XVIII Congresso dell'U.M.I.* in Bari, Italy, 9/24-29.

**Finito dimensionalità motivica: teoria e applicazioni**, at the Seminario di Algebra e Geometria of the Università di Genova, 3/6.

## Research (continued)

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- Voevodsky's motives and K-theory** (mini-course) at the *Sedano Winter School on K-theory*, organized by the Universidad de Valladolid in Sedano, Spain, 1/22-27.
- 2006 **Motivi finito-dimensionali (Finite-dimensional motives)** at the *Seminario Motivico* in Padova, Italy organized by the Dipartimento di Matematica Pura e Applicata of the Università di Padova, 4/11.
- 2005 **Classical motives and some combinatorial identities** at the Colloquium of the Math Dept of George Washington University, Wahsington, DC, USA, 3/24.
- Schur Functors and Nilpotence Theorems** at the Algebra Seminar of Rutgers University, 3/11.
- 2004 **Signature of Schur-finite motives** at the Algebra Seminar of the University of Tokyo, Japan, 11/24.
- Finite dimensional motives and On Voevodsky's work** at the *Symposium on Algebraic Geometry in Hiroshima*, organized by the Hiroshima University, Japan, 11/15-11/19.
- Schur functors and motives** at the conference *Motivic Homotopy Theory*, at the I.H.P. in Paris, France, 26/5-28/5.
- Schur functors and monoidal triangulated categories** at the working seminar *Algre et Topologie Homotopiques*, at the Institute de Math. de Jussieu, 12/5.
- Schur functors and motives** at the conference *Motives and Homotopy Theory of Schemes*, at Oberwolfach, Germany, 14/3-20/3.
- (Classical) motives** at the *Seminaire étudiant de théorie des nombres* of the Instute de Math. de Jussieu, 3/2.
- Motivi finiti secondo Schur** at the conference *Workshop su Geometria Algebrica ed Aritmetica*, in Padova, Italy, 1/7-1/9.
- 2003 **Motivi finiti secondo Schur** (Schur-finite motives) at the conference *XVII<sup>e</sup> Congresso dell'UMI* organized by the Unione Matematica Italiana in Milan, Italy, 9/12.
- Schur functors and motives** at the conference *The Arithmetic, Geometry and Topology of Algebraic Cycles* in Morelia, Mexico, 7/4.
- Schur's finiteness conditions in tensor categories**, in the Algebra Seminar at Rutgers University, 5/9.
- 2002 **Funtori con corrispondenze** (Presheaves with transfers), at the conference *Giornate di Geometria Algebrica ed Argomenti Correlati*, in Anacapri, Napoli, Italy, 5/31.
- Gabber's proof of Serre's non-negativity conjecture**, in the Commutative and Computational Algebra Seminar at Rutgers University, 2/28.
- 1999 **A concrete approach to classical motives**, in the Graduate Student Seminar at Rutgers University, 3/23.
- 1998 **On the birationality of the Picard motive**, at the joint Nice-Genova Conference in Nice, France, 12/15.
- Conferences (selection)*
- 2007 *Motives and Algebraic Cycles, A Conference Dedicated to the Mathematical Heritage of Spencer J. Bloch and Workshop on the Homotopy Theory of Schemes*, organized by the Fields Institute in Toronto, Canada, 3/19-30.
- 2006 *Algebraic K-theory*, in Oberwolfach, Germany, 7/16-22.

## Research (continued)

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- 2005 *Semaine Derivee* at the Inst. de Math. de Jussieu, 1/17-1/22.
- 2004 *Workshop and Summer School on Motives, K-Theory and Arithmetic Geometry*, a Sestri Levante, Genova, 6/28-7/2.
- 2003 *K-theory and algebraic cycles* in Oxford, Ohio, USA, 4/5-4/6.
- 2001 Joint meeting of the AMS and the SMM in Morelia, Mexico, 5/23-5/26.
- 2000 *Algebraic cycles* in Columbus, Ohio, USA, 12/1-12/3.  
*Algebraic K-theory and homotopy theory of schemes* in Toulouse, France, 7/3-7/7.  
AMS Regional Meeting in New York, USA, 11/4-11/5.
- 1999 *A workshop on homotopy theory and K-theory of schemes* in Munster, Germany, 5/31-6/3.
- 1998 *The arithmetic and geometry of algebraic cycles* in Banff, Canada, 6/7-6/19.
- 1997 Workshop and symposium *Algebraic K-theory and applications* in Trieste, Italy, 9/1-9/19.  
*International conference on intersection theory* in Bologna, Italy, 12/15-12/20.

## Teaching

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Mini-course “Compressione Dati (Data compression) as stages for high school students at the Dipartimento di Matematica in Genova, April 15th to 17th 2008, and April 21st to 23rd 2009.

### *Università di Milano*

- Spring 2012 Algebra 2 (teaching assistant)
- Fall 2011 Algebra 1 (teaching assistant)
- Spring 2011 Algebra 2 (teaching assistant)

### *Teaching Assistant at Rutgers University*

- Fall 2000 Math 152 (Calculus II for science majors) (Prof. T. Balaban)
- Spring 2001 Math 135 (Calculus I for non-science majors) (Prof. V. Shtelen)  
Math 151 (Calculus I for science majors) (Prof. M. O’Nan)  
Math 152 (honor’s class) (Prof. A. Taylor)
- Fall 2001 Math 244 (Differential equations for science majors) (Prof. J. B. Tunnell)
- Spring 2002 Math 138 (Calculus II for non-science majors) (Prof. S. Simpson)
- Fall 2002 Math 251 (Calculus III for science majors) (Prof. T. Butler)
- Spring 2003 Math 152 (Calculus II for science majors) (Prof. J. Dare)