

## CURRICULUM VITAE

MATTEO VIALE

**CURRENT POSITION.** Tenure track researcher in Mathematical Logic in the University of Torino since October 1st 2008.

**PAST POSITIONS.** Three years post-doc position in the Kurt Gödel Research Center in Mathematical Logic of the University of Vienna: February 2007 – August 2008

ATER in the University Paris 7-Denis Diderot, November 2005 – January 2007

Ph.D. student in the University Paris 7-Denis Diderot, September 2003 – September 2006.

Ph.D. student in the University of Torino, November 2001 – September 2006.

### HONOURS AND DEGREES.

#### Ph.D in Matematical Logic

University Paris 7-Denis Diderot and University of Torino, 2006

Thesis advisors: Alessandro Andretta (University of Torino), Boban Velickovic (University of Paris 7-Denis Diderot)

Thesis title: Applications of the proper forcing axiom to cardinal arithmetic

#### Bachelor degree in Mathematics

University of Pisa, 2001

Thesis advisor: Alessandro Berarducci

Thesis title: I tipi intersezione per il Lambda calcolo e la logica modale

Grade: 110/110 cum Laude

### PRIZES AND AWARDS.

Kurt Gödel Research Prize Fellowship 2010 awarded in March 2011 (100.000 €) by the Kurt Gödel Society: individual “research grant to support original research in, and areas surrounding, the foundations of mathematics”.

Fubini prize (10.000 €) awarded in November 2009 (10.000 €) by the Istituto Guido Boella: “The Fubini Prize supports a young Italian mathematician (under 40 and resident in Italy or temporarily resident abroad) who has obtained results in the fields of pure or applied mathematics and is recognized for his studies by the international scientific community”.

2006 Sacks Prize awarded by the Association for Symbolic Logic “for the most outstanding doctoral dissertation in mathematical logic in 2006” .

**FUNDING ID.** Principal investigator of the Torino unity of the 2009-PRIN project “Modelli e Insiemi” (140.092 €) (35.973 € for the Torino local unity)

Kurt Gödel Research Prize Fellowship 2010 awarded in March 2011 (100.000 €): individual “research grant to support original research in, and areas surrounding, the foundations of mathematics”.

**ORGANIZATION OF CONFERENCES.**

- Member of the organizing committee of the Young Set Theory Workshop 2009, 14 – 18 April 2009, Barcelona (Spain).
- Member of the scientific committee of the Young Set Theory Workshop 2010, 15 – 19 February 2010, Raach (Austria).
- Member of the organizing committee of the workshop RATLOCC 2011, 22 – 27 May 2011, Bertinoro (Italy).
- Member of the organizing committee of the Young Set Theory Workshop 2012, to be held 30 April – 4 May 2012, Luminy-Marseille (France).

**OTHER SCIENTIFIC ACTIVITIES.** I served as referee for the Journal of Symbolic Logic, the Bulletin of Symbolic Logic, the Notre Dame Journal in Formal Logic, the Israel Journal of Mathematics.

Visiting researcher in the Mathematics Department of the University of Bristol, for the Heilbronn Workshop in Set Theory, Bristol 12 – 16 September 2011, United Kingdom.

Visiting researcher in the IMS in Singapore, for the research project “Computational Prospects of Infinity II”, Singapore 17 – 23 July 2011.

Visiting researcher in the Centro De Giorgi of the Scuola Normale Superiore di Pisa, 15 May – 15 June 2009, invited by Lorenzo Carlucci on the grant “Exploring the Infinite, Phase I: Mathematics and Mathematical Logic”.

Junior research fellow in the Erwin Schrödinger Institute, Vienna, October 2004 – December 2004.

**STUDENTS.** I directed two students in the preparation of their master thesis in mathematics. One of these students was awarded the AILA prize 2009 for the best Italian master thesis in logic. Both theses dealt with topics in set theory related to my current researches.

**LANGUAGES.** Italian: fluent, written and spoken. English: fluent, written and spoken. Spanish: fluent, written and spoken. French: fluent, spoken.

**PUBLICATIONS.**

- (1) M. Viale, C. Weiß, On the consistency strength of the proper forcing axiom, *Advances in Mathematics*, in press, corrected proof available online 6 August 2011.
- (2) M. Viale, A. Sharon, Some consequences of reflection on the approachability ideal, *Transactions of the American Mathematical Society* 362, 4201-4212, 2009.
- (3) M. Viale, A family of covering properties, *Mathematical Research Letters* 15(2), 221-238, 2008.
- (4) M. Viale, Forcing axioms, supercompact cardinals, singular cardinals combinatorics, *The Bulletin of Symbolic Logic* 14(1), 99-113, 2008.
- (5) M. Viale, The Proper Forcing Axiom and the Singular Cardinal Hypothesis, *The Journal of Symbolic Logic* 71(2), 473-479, 2006.
- (6) M. Viale, The cumulative hierarchy and the constructible universe of ZFA, *Mathematical Logic Quarterly* 50(1), 99-103, 2004.
- (7) M. Viale, S. Valentini, A binary modal logic for the intersection types of lambda-calculus, *Information and Computation* 185(2), 211-232, 2003.

**PREPRINTS AND ACCEPTED PAPERS.**

- (1) M. Viale, Guessing models and generalized Laver diamond, to appear in *Annals of Pure and Applied Logic* (arXiv:1012.2212v3), 31 pages.
- (2) M. Viale, S. Cox, Martin's Maximum and Tower Forcing, preprint (arXiv:1110.1584v1), 22 pages.

**CONFERENCE PROCEEDINGS AND REVIEWS.**

- A covering property, PFA and SCH, *Oberwolfach Reports* 2(4), 3137-3139, 2005.
- On the mapping reflection principle MRP, *The Bulletin of Symbolic Logic* 15(3), 322-325, 2009.

**SELECTED INVITED TALKS.**

- A covering property, PFA and SCH, MFO set theory workshop, 4 – 10 December 2005, Oberwolfach, Germany.
- A family of covering properties for forcing axioms and strongly compact cardinals, 1st european set theory meeting, Banach Center, 9 – 13 July 2007, Bedlewo, Poland.
- Reflection and approachability, MFO set theory workshop, 14 – 19 January 2008, Oberwolfach, Germany.
- Forcing axioms, supercompact cardinals, singular cardinal combinatorics, invited plenary speaker, *Logic Colloquium* 2008, 3 – 8 July 2008, Bern, Switzerland.
- Some questions on the models of MM, ESI workshop on large cardinals and descriptive set theory, 14 – 27 June 2009, Vienna, Austria.
- On the consistency strength of the proper forcing axiom, XI International Workshop on Set Theory 4 – 8 October 2010, Luminy, France.
- On the notion of guessing model, MFO Set Theory Workshop, 9 – 15 January 2011, Oberwolfach, Germany.

- Three Aspects of Gödel's Program: Supercompactness, Forcing axioms, Omega-logic, New Trends in Logic, 28 – 29 April 2011, Vienna, Austria.
- Martin's maximum revisited: Woodin cardinals, forcing axioms,  $\Omega$ -logic, 3rd european Set Theory meeting, 4 – 7 July 2011, Edinburgh, United Kingdom.
- Martin's maximum revisited: Woodin cardinals, forcing axioms,  $\Omega$ -logic. Part II, Computational Prospects of Infinity II: Workshop on Set Theory, 18 – 22 Jul 2011, IMS, Singapore.

#### **OTHER INVITED TALKS AND SEMINARS.**

- The Proper Forcing Axiom implies the Singular Cardinal Hypothesis, 9-th KGRC set theory workshop, 17 – 19 November 2005, Vienna, Austria.
- The P-ideal dichotomy and the SCH, logic seminar, Equipe de logique, University of Paris 7 "Denis Diderot", 13 March 2006, Paris, France.
- Forcing axioms and cardinal arithmetic, Set theory and its neighbours XIII, 15 March 2006, London, United Kingdom.
- Applications of the Proper Forcing Axiom to cardinal arithmetic, DMV mini-symposium in set theory, 21 – 22 September 2006, Bonn, Germany.
- Assiomi di forcing e aritmetica cardinale, University of Torino, 27 November 2006, Torino, Italy.
- The constructible universe for the anti-foundation axiom system ZFA, invited speaker in the special session in set theory, Logic Colloquium 14 – 19 July 2007, Wroclaw, Poland.
- Reflection principles and pcf-theory, KGRC seminar talks, 15 November 2007, 22 November 2007, Vienna, Austria.
- Reflection and approachability, MFO set theory workshop, 14 – 19 January 2008, Oberwolfach, Germany.
- Una rapida introduzione al metodo del forcing, Smart seminar, computer science department - Università di Roma "La Sapienza", 18 May 2009, Roma, Italy.
- Ciclo di seminari sugli assiomi di forcing e loro applicazioni, università di Pisa, 15 May – 15 June 2009, Pisa, Italy.
- Accessible versions of supercompact cardinals, Set theory seminar, Equipe de logique, University of Paris 7 "Denis Diderot", 3 June 2010, Paris, France.