

Claudio Quadrelli - Curriculum Vitæ

Personal:

Date of birth: 14/08/1986

Nationality: Italy

Contacts:

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Research interests: Galois theory, profinite groups, group cohomology, field theory, Lie algebras and graded structures associated to groups, finite p -groups

Employment

04/2017 - current: Università degli Studi di Milano-Bicocca, Milan (Italy)

- Post Doctoral Fellow at the Department of Mathematics and Applications
- Advisor: Prof. Thomas Weigel

11/2016 – 03/2017: Università degli Studi di Firenze, Florence (Italy)

- Post Doctoral Fellow at the Department of Mathematics “Ulisse Dini”
- Advisor: Prof. Orazio Puglisi

09/2015 - 09/2016: Ben-Gurion University of the Negev, Be'er Sheva (Israel)

- Post Doctoral Fellow at the Center for Advanced Studies in Mathematics
- Advisor: Prof. Ido Efrat

Education

01/2011 - 02/2015: Università degli Studi di Milano-Bicocca, Milan (Italy)
Western University, London ON (Canada)

- Mathematics, Doctor of Philosophy and Dottore di Ricerca (double degree)
- Advisors: Prof. Ján Minác and Prof. Thomas Weigel
- Title of the thesis: *Cohomology of absolute Galois groups*

10/2008 - 10/2010: Università degli Studi di Milano-Bicocca, Milan (Italy)

- Mathematics, M.Sc. summa cum laude

10/2005 - 07/2008: Università degli Studi di Milano-Bicocca, Milan (Italy)

- Mathematics, B.Sc. summa cum laude

Honors and Awards

- **2017:** *Young Talents Prize* (3rd standing in the category “Mathematical Sciences, Engineering and Computer Science”); University of Milano-Bicocca and Accademia dei Lincei (Italy).
- **2015:** Department's candidate for the *Governor General's Gold Medal* for PhD

recipients; Department of Mathematics, Western University (Canada).

- **2013:** *Graduate Thesis Research Award*; Faculty of Science, Western University (Canada).
- **2011:** *M.Sc. Thesis Prize*; INdAM - National Institute for Advanced Mathematics “F. Severi”, Rome (Italy).
- **2009:** *Grant “F. Severi”* for M.Sc. Students (ranked among the ten best students in Italy); INdAM - National Institute for Advanced Mathematics “F. Severi”, Rome (Italy).
- **2005-2007:** *Grant INdAM* for B.Sc students; INdAM National Institute for Advanced Mathematics “F. Severi”, Rome (Italy).

Publications

Accepted:

- *The Kummerian property and maximal pro-p Galois groups*. With I. Efrat. *J. Algebra* 525 (2019), 284-310.
- *A group theoretical version of Hilbert's theorem 90*. With Th. Weigel. *Bull. Lond. Math. Soc.* 47 (2015), no. 4, 704-714.
- *Detecting fast solvability of equations via small powerful Galois groups*. With S.K. Chebolu and J. Minác. *Trans. Amer. Math. Soc.* 367 (2015), no. 2, 8439-8464.
- *Finite quotients of Galois pro-p groups*. *Ann. Math. Québec* 39 (2015), no. 1, 113-120.
- *Cohomology of absolute Galois groups*. PhD thesis at Western University, 2015. Electronic Thesis and Dissertation Repository. Paper 2600. <http://ir.lib.uwo.ca/etd/2600>.
- *Bloch-Kato pro-p groups and locally powerful groups*. *Forum Math.* 26 (2014), no. 3, 793-814.

Prepublications:

- *One-relator maximal pro-p Galois groups and the Koszulity conjectures*. Available at [arXiv:1601.04480](https://arxiv.org/abs/1601.04480).
- *Koszul algebras and quadratic duals in Galois cohomology*. With J. Minác, F.W. Pasini and N.D. Tân. Available at [arXiv:1808.01695](https://arxiv.org/abs/1808.01695).
- *Profinite groups with a cyclotomic p-orientation*. With Th. Weigel. Available at [arXiv:1811.02250](https://arxiv.org/abs/1811.02250).
- *1-smooth pro-p groups and the Bloch-Kato conjecture*. Available at [arXiv:1904.00667](https://arxiv.org/abs/1904.00667).

In preparation:

- *Cohomological Massey products and the Elementary Type Conjecture*. With J. Minác, F.W. Pasini and N.D. Tân.
- *Commutative-transitive pro-p groups*. With Th. Weigel and T.A.D. Zapata.
- *Oriented groups*. With Th. Weigel.
- *On Pro-p groups with quadratic Galois cohomology*. With I. Snopce and M. Vannacci.
- *Right-angled Artin groups and enhanced Koszul properties*. With A. Cassella.

Teaching Experience

- **02/2019 - 06/2019** and **02/2018 - 06/2018**: Teaching assistant for the project «Lauree Scientifiche – Sapere Minimo», Department of Mathematics, University of Milano-Bicocca.
- **03/2018 - 07/2018** and **03/2015 - 07/2015**: Assistant Professor, Department of Computer Science, University of Milano-Bicocca.
- **10/2017 - 02/2018**: Assistant Professor, Department of Chemistry, University of Milano-Bicocca.
- **03/2017 - 07/2017**: Teaching Assistant, Department of Mathematics, University of Milano-Bicocca.
- **10/2013 - 01/2014** and **10/2014 - 01/2015**: Teaching Assistant for first year students, Faculty of Science, University of Milano-Bicocca.
- **03/2014 - 05/2014**: Teaching assistant, Department of Pedagogy and Human Sciences, University of Milano-Bicocca.
- **11/2011 - 03/2012**: Personal Tutor for disabled students, Disabled Students Services Office, University of Milano-Bicocca.
- **03/2009 - 07/2009**: Teaching assistant, Faculty of Statistics, University of Milano-Bicocca.

Advising students:

- Undergraduate Research Project «Pro- p groups», Spring term 2012, Western University.
- Undergraduate Research Project «RAAGs and enhanced Koszulity», Spring term 2019, University of Milano-Bicocca.

Selected Talks

- *The Bloch-Kato conjecture and maximal pro- p Galois groups*, Düsseldorf University (Germany), 16/04/2018, and Strasbourg University (France), 20/03/2018.
- *The Kummerian property for pro- p groups*, Topics in Group Theory and representations, Gargnano (Italy), 10/10/2017.
- *Cohomology of absolute Galois groups and the cyclotomic character*, University of Southampton (UK), 11/07/2017.
- *Absolute Galois groups of fields and the cyclotomic character*, BIRS - Banff International Research Station for Mathematical Innovation and Discoveries (Canada), 23/06/2017.
- *Knots, Galois groups and Massey products*, University of Pisa (Italy), 9/02/2017.
- *Koszul pro- p groups*, 1st Joint Meeting Brazil-Italy in Mathematics (Group Theory session), IMPA (Brazil), 30/08/2016.
- *The Zassenhaus filtration and Galois cohomology for profinite groups*, Ischia Group Theory 2016, Ischia (Italy), 31/03/2016.
- *Good (and bad) candidates for maximal pro- p Galois groups*, Fields Arithmetic seminars, Tel Aviv University, (Israel) 13/01/2016.
- *Koszul algebras, quadratic duals and Galois cohomology*, Technion (Israel), 3/12/2015, and Bar-Ilan University (Israel), 1/12/2015.

- *A group theoretic version of Hilbert 90*, communication at the 20th congress of the Italian Mathematical Society (UMI), Siena (Italy), 8/09/2015.
- *Profinite groups with a cyclotomic p -orientation*, Advances in Group Theory and Applications 2015, Porto Cesareo (Italy), 16/06/2015.
- *Galois pro- p groups with constant generating number on open subgroups*, Ischia Group Theory 2014, Ischia (Italy), 5/04/2014.
- *Galois pro- p groups on a diet of roots of the field*, Illinois State University (US), 25/02/2014.
- *Cyclo-oriented pro- p groups and Demushkin groups*, Workshop on pro- p groups and Arithmetic, University of Franche Comté (France), 19/12/2013.
- *Upper and lower bounds for maximal pro- p Galois groups*, Dalhousie University (Canada), 8/06/2013.
- *Rigid fields and powerful pro- p Galois groups*, Brauer groups and Galois groups, Technion (Israel), 11/01/2013.

Selected Conferences and Schools

- **Topics on group Theory and Representations**, Gargnano (Italy), 9-11/10/2017
- **Homological Algebra and Topological Groups**, University of Southampton, 10-14/07/2017.
- **Nilpotent Fundamental groups**, BIRS - Banff International Research Station for Mathematical Innovation and Discoveries (Canada), 19-23/06/2017 (invited participant).
- **3rd Workshop on Interactions between Arithmetic and Homotopy**, Imperial College London (UK), 14-16/02/2017.
- **1st Joint Meeting Brazil-Italy in Mathematics**, IMPA - Instituto Nacional de Matemática Pura e Aplicada (Brazil), 29/08/2016 - 2/09/2016 (invited speaker at the Group Theory session).
- **22nd Amitsur Memorial Symposium**, Haifa University (Israel), 20-21/06/2016.
- **Ischia Group Theory 2016**, Ischia (Italy), 29/03/2016 - 2/04/2016.
- **Advances in Group Theory and Applications 2015**, Porto Cesareo (Italy), 16-19/06/2015.
- **Young Algebraists Conference 2014**, EPFL - École Polytechnique Fédérale de Lausanne (Switzerland), 8-13/06/2014.
- **Ischia Group Theory 2014**, Ischia (Italy), 1-5/04/2014.
- **Trimestres at LMB - Autumn 2013**: Workshop on pro- p groups and Arithmetic, University of Franche Comté (France), 16-20/12/2013.
- **Canadian Mathematical Society Summer Meeting 2013**, Halifax (Canada), 04-08/06/2013.
- **Spring School on Torsors, Motives and Cohomological Invariants**, Fields Institute (Canada), 06-17/05/2013 (invited participant).
- **Galois Groups and Brauer Groups**, Technion (Israel), 05-11/01/2013.
- **Oberwolfach Seminar**: Algebraic groups and patching, Mathematisches Forschungsinstitut Oberwolfach (Germany), 14-22/10/2012 (invited participant).
- **IBG Advanced International School on Galois Groups**, University of the Basque Country (Spain), 16-27/07/2012.

- **Winter School on Galois Theory**, Luxembourg University (Luxembourg), 15-24/02/2012.
- **Oberwolfach Seminar**: Algebraic properties of profinite groups, Mathematisches Forschungsinstitut Oberwolfach (Germany), 12-18/06/2011 (invited participant).
- **Scuola Matematica Interuniversitaria** Perugia 2009: Algebra (course taught by Prof. N. Vavilov) and Complex Analysis (course taught by Prof. K. Diederich), Perugia (Italy), Aug. 2009.
- **Scuola Matematica Interuniversitaria** Perugia 2008: Algebra (course taught by Prof. G. Navarro) and Differential Geometry (course taught by Prof. F. Mercuri), Perugia (Italy), Aug. 2008.

Organization:

- **BATOG - Bicocca Afternoon Talks On Groups** (algebra seminars), Department of Mathematics and Applications, University of Milano-Bicocca, Milan (Italy), a.y. 2018-2019.
- **Insalate di matematica** (math colloquia), Department of Mathematics and Applications, University of Milano-Bicocca, Milan (Italy), a.y. 2017-2018 and 2018-2019.
- **GABY18 - Groups and Algebras in Bicocca for Young algebraists**, University of Milano-Bicocca, Milan (Italy), May 2018.
- **3rd Algebra and Number Theory Day**, Center for Advanced Studies in Mathematics, Ben-Gurion University of the Negev, 23/06/2016.

Forthcoming:

- **SandGAL 2019 - Semigroups and Groups Automata Logics**, contributed talk, Cremona (Italy), 10-13/06/2019.
- **Advanced School on representations of pro- p groups**, invited speaker, ICMAT Madrid (Spain), 8-12/07/2019.
- **21st Congress of the Italian Mathematical Union (UMI)**, communication at the Algebra session, Pavia (Italy), 2-7/09/2019.

Other academic activities

- **Referee** for
 - *Canadian Journal of Mathematics*, Canadian Mathematical Society,
 - *Journal of Pure and Applied Algebra*, Elsevier.
- **Reviewer** for Mathematical Reviews, AMS (US).
- **Member** of the National Group of Algebra and Geometry, INdAM - National Institute for Advanced Mathematics "F. Severi", Rome (Italy).

Languages

- **Italian**: mother tongue
- **English**: very good
- **German**: basic knowledge

- **Spanish:** basic knowledge

Main References

- Prof. Sunil K. Chebolu, Illinois State University, Normal IL (US)
- Prof. Ido Efrat, Ben-Gurion University of the Negev, Be'er Sheva (Israel)
- Prof. Ján Minác, Western University, London ON (Canada)
- Prof. Thomas Weigel, University of Milano-Bicocca, Milan (Italy)

Further contacts:

- Prof. Lior Bary-Soroker, Tel Aviv University, Tel Aviv (Israel)
- Prof. Adam Chapman, Tel-Hai College, Kiryat Shmona (Israel)
- Dr. Pierre Guillot, Strasbourg University, Strasbourg (France)
- Emer. Prof. John P. Labute, McGill University, Montréal (Canada)
- Prof. Christian Maire, University of Franche-Comté, Besançon (France)
- Prof. Danny Neftin, Israel Institute of Technology, Haifa (Israel)
- Prof. David M. Riley, Western University, London ON (Canada)
- Prof. René Schoof (PhD thesis referee), University of Roma-Tor Vergata, Rome (Italy)
- Prof. Ilir Snopce, Federal University of Rio de Janeiro, Rio de Janeiro (Brazil)
- Prof. Theo A. D. Zapata, University of Brasilia (Brazil)