

# Roberto Pirisi

## Curriculum Vitae

### Personal Data

Institution KTH Stockholm  
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Born: 11/12/1986, Cagliari, Italy

### Academic roles

- 07/2018–present **Postdoctoral fellow**, KTH STOCKHOLM, Stockholm, Sweden, <https://www.kth.se/math>.  
Supervisor: David Rydh
- 09/2016–07/2018 **Postdoctoral fellow**, UNIVERSITY OF BRITISH COLUMBIA, Vancouver, BC (Canada), <https://www.math.ubc.ca/>.  
Supervisors: Kai Behrend, Zinovy Reichstein
- 09/2015–08/2016 **Postdoctoral Fellow**, UNIVERSITY OF OTTAWA, Ottawa, ON (Canada), <http://science.uottawa.ca/mathstat/en>.  
Supervisor: Kirill Zaynullin

### Education

- 11/2011–07/2015 **Phd in Mathematics**, *Scuola Normale Superiore*, Italy, 70/70 cum laude.  
Thesis title: Cohomological invariants for algebraic curves. Advisor: Angelo Vistoli
- 03/2009–09/2011 **Master's degree in Mathematics**, *The University of Pisa*, Italy, 110/110 cum laude.  
Thesis title: A survey on diophantine results. Advisor: Roberto Dvornicich
- 09/2005–02/2009 **Bachelor's degree in Mathematics**, *The University of Pisa*, Italy, 110/110 cum laude.  
Thesis title: Classificazione delle rappresentazioni del gruppo simmetrico. Advisor: Rocco Chirivì

### Teaching experience

- Summer 2018 **Instructor**, *Math 200-921: Multivariable calculus*, University of British Columbia, <https://www.math.ubc.ca/Ugrad/index.shtml>.
- Spring 2017 **Instructor**, *Math 101: Integral Calculus with application to Physical Sciences and Engineering*, University of British Columbia, <https://www.math.ubc.ca/~gerg/teaching/101-Winter2017/>.
- Fall 2016 **Instructor**, *Math 104: Differential Calculus with Applications to Commerce and Social Sciences*, University of British Columbia, <https://www.math.ubc.ca/~shawn/Math104-184/>.
- Spring 2016 **Instructor**, *Math 1302B: Mathematical Methods II*, University of Ottawa, <http://mysite.science.uottawa.ca/hsalmasi/mat1302/mat1302.htm>.
- Fall 2015 **Instructor**, *Math 2355: Introduction to Geometry*, University of Ottawa.

- Spring 2015 **Teaching assistant**, *Algebra 2*, Università di Pisa, <http://people.dm.unipi.it/gianni/pagina-algebraII.htm>.
- Spring 2014 **Teaching assistant**, *Algebra 2*, Università di Pisa.
- Fall 2013 **Instructor**, *Math 0: pre-calculus for engineering*, Università di Pisa.

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## Papers and preprints

- [1] **Cohomological invariants for algebraic stacks**, 2018, *Tran. Amer. Math. Soc.*, vol. 370, no. 3, available at arXiv: 1412.0554.
- [2] **Cohomological invariants for hyperelliptic curves of even genus**, 2017, *Algebraic Geometry*, vol.4, issue 4, <https://algebraicgeometry.nl/>.
- [3] **Cohomological invariants of hyperelliptic curves of genus three**, 2018, *Documenta Mathematica*, vol. 23, available at arXiv: 1609.02231.
- [4] **On the motivic class of the classifying stack of  $G_2$  and the Spin groups**, (with *M. Talpo*), 2017, *Inter. Math. Res. Not.*, vol. 2019, Issue 10, available at arXiv:1702.02649 .
- [5] **The Picard group of the universal abelian variety and the Franchetta conjecture for abelian varieties**, (with *R.Fringuelli*), 2019, *Michigan Math. J.*, 68,(3), available at arXiv:1603.09190.
- [6] **The Brauer group of the universal moduli space of vector bundles over smooth curves**, (with *R.Fringuelli*), 2018, To appear in *Int. Math. Res. Not.*, available at arXiv: 1805.05369.
- [7] **Gabriel's theorem and birational geometry**, (with *J.Calabrese*), 2018, to appear in *Proc. Amer. Math. Soc.*, available at arXiv:1804.04078.
- [8] **A complete description of the cohomological invariants of even genus hyperelliptic curves**, (with *A. Di Lorenzo*), 2019, submitted, available at arXiv:1911.04005.
- [9] **Cohomological invariants of algebraic curves**, 2015, Phd Thesis, available at <https://people.kth.se/~pirisi/thesis.pdf>.

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## Research interests

- Cohomological invariants of algebraic groups and moduli stacks
- Motivic classes of classifying stacks
- Picard groups, Brauer groups and Chow rings of moduli stacks
- Cycle theories and oriented cohomology theories
- Birational geometry from the noncommutative point of view
- Casson-type invariants of three dimensional manifolds

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## Invited talks

- 16/01/2019 **Algebra and geometry seminar**, *KTH Royal Institute of Technology, Stockholm, Sweden*, Title: *An arithmetic theory of characteristic classes for moduli problems.*
- 19/09/2018 **Algebraic geometry seminar**, *Scuola Normale Superiore di Pisa, Pisa, Italy*, Title: *Birational geometry and Gabriel's theorem.*
- 14/04/2018 **Spring 2018 AMS meeting, Special session on Moduli Spaces**, *Portland State University, Portland, Oregon, USA*, Title: *The Brauer group of the moduli stack of vector bundles on smooth curves.*
- 23/08/2017 **Lie Theory, Cohomology and Geometry in Wildrose Country**, *University of Alberta, Edmonton, Alberta, Canada*, Title: *On the motivic class of the classifying stacks of  $G_2$  and the Spin groups.*
- 19/09/2016 **Algebraic geometry seminar**, *University of British Columbia, Vancouver, British Columbia, Canada*, Title: *The Franchetta conjecture for abelian varieties.*

- 26/05/2016 **Giornate di Geometria Algebrica e Argomenti Correlati XIII**, Università di Catania, Catania, Italy, Title: *The Franchetta conjecture for abelian varieties.*
- 07/12/2015 **CMS Winter meeting**, Montreal, Quebec, Canada, Title: *Cohomological invariants of algebraic stacks.*
- 15/09/2015 **The Use of Linear Algebraic Groups in Geometry and Number Theory**, Banff Centre, Banff, Alberta, Canada, Title: *Cohomological Invariants for stacks of algebraic curves.*
- 29/04/2014 **Algebraic geometry seminar**, Rice University, Houston, Texas, USA, Title: *Cohomological Invariants for stacks of algebraic curves.*

## Poster sessions

- 11/09/2017 **WAGS Fall 2017**, UCLA, Los Angeles, California, USA, Title: *The motivic class of  $BG_2$  and  $BSpin_n$ .*
- 14/10/2017 **British Algebraic Geometry Meeting III**, University of Cambridge, Cambridge, UK, Title: *The motivic class of  $BG_2$  and  $BSpin_n$ .*
- 02/06/2015 **G.A.E.L. XXIII**, KU Leuven, Leuven, Belgium, Title: *Cohomological Invariants for stacks of algebraic curves.*

## Organizing activities

- 09/2020 **Motives and Moduli Spaces**, conference (Upcoming), KTH/Stockholm University, Co-organizer with D. Peterson and D. Rydh.

## Conferences and workshops

- 30/09-04/10/18 **The Geometry of Algebraic Varieties**, Centre International de Rencontres Mathématiques, Luminy, France.
- 15-19/10/18 **Cohomology of Algebraic Varieties**, Centre International de Rencontres Mathématiques, Luminy, France.
- 14/04/2018 **Spring 2018 AMS meeting, Special session on Moduli Spaces**, Portland State University, Portland, Oregon, USA.
- 14-15/10/17 **WAGS Fall 2017**, UCLA, Los Angeles, California, USA.
- 11-13/09/17 **British Algebraic Geometry Meeting III**, University of Cambridge, Cambridge, UK.
- 21-25/08/17 **Lie Theory, Cohomology and Geometry in Wildrose Country**, University of Alberta, Edmonton, Alberta, Canada.
- 23-29/04/17 **Algebraic Groups MFO Workshop**, MFO Oberwolfach, Oberwolfach, Germany.
- 08-09/04/17 **W.A.G.S. Spring 2017**, University of British Columbia, Vancouver, British Columbia, Canada.
- 29-30/10/16 **ABC Algebra Workshop**, University of Alberta, Edmonton, Alberta, Canada.
- 15-16/10/16 **W.A.G.S. Fall 2016**, Colorado State University, Fort Collins, Colorado, USA.
- 25-28/05/16 **Giornate di Geometria Algebrica e Argomenti Correlati XIII**, Università di Catania, Catania, Italy.
- 08-10/04/16 **AGNES Spring 2016**, Yale University, New Haven, Connecticut, USA.
- 04-07/12/15 **CMS Winter meeting**, Montreal, Quebec, Canada.
- 13-18/09/15 **The Use of Linear Algebraic Groups in Geometry and Number Theory**, Banff Centre, Banff, Alberta, Canada.
- 01-05/06/15 **G.A.E.L. XXIII**, KU Leuven, Leuven, Belgium.
- 23-27/07/14 **GRIFGA-Lebesgue Summer school on derived categories**, Université de Nantes, Nantes, France.

- 25-27/04/14 **Agnes Spring Workshop**, *Simons Center for Mathematics and Physics, Stony Brook, Rhode Island, USA.*
- 16-20/12/13 **Fundamental Groups in Arithmetic and Algebraic Geometry**, *Centro Ennio de Giorgi, Pisa, Italy.*
- 11-21/06/13 **Developments in Moduli Theory**, *Kyoto University, Kyoto, Japan.*
- 23-26/05/12 **Giornate di Geometria Algebrica e Argomenti Correlati XI**, *Centro Ennio de Giorgi, Pisa, Italy.*