

# Andrea Di Lorenzo

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Aarhus, Denmark  
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## Personal informations

Date of birth 22 November 1991  
Place of birth Rome  
Nationality Italian

## Present and past positions

Aug. 2019– **Postdoc**, *Department of Mathematics*, Aarhus University, Denmark.  
Spring 2019 **Program associate for the semester on Birational Geometry and Moduli Spaces**, *M.S.R.I.*, Berkeley, CA.

## Education

2015–2019 **Ph.D. in Mathematics**, *Scuola Normale Superiore*, Thesis title: "Integral Chow ring and cohomological invariants of stacks of hyperelliptic curves". Advisor: Angelo Vistoli, *cum laude*.  
2013–2015 **Master degree in Mathematics**, *Sapienza University of Rome*, Thesis title: "The Schottky problem and minimal cohomology classes". Advisor: Enrico Arbarello, 110/110 *cum laude*.  
2010–2013 **Bachelor degree in Mathematics**, *Sapienza University of Rome*, Thesis title: "The geometry of the moment map". Advisor: Paolo Piazza, 110/110 *cum laude*.  
2005–2010 **High school diploma**, *Liceo classico "Orazio"*, Rome, 100/100 *cum laude*.

## Research interests

Moduli stacks of curves and K3 surfaces  
Integral Chow rings and Picard groups  
Equivariant intersection theory  
Cohomological invariants  
Brauer Groups

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## Publications and preprints

"Cohomological invariants of root stacks and admissible double coverings", *joint with Roberto Pirisi*, *arXiv:2009.07671*, 2020.

"Integral Chow ring of the stack of smooth non-hyperelliptic curves of genus three", *joint with Damiano Fulghesu and Angelo Vistoli*, *arXiv:2004.00052*, (submitted), 2020.

"Brauer groups of moduli of hyperelliptic curves via cohomological invariants", *joint with Roberto Pirisi*, *arXiv:2002.11065*, (submitted), 2020.

"A complete description of cohomological invariants of even genus hyperelliptic curves", *joint with Roberto Pirisi*, *arXiv:1911.04005*, (submitted), 2019.

"Integral Picard group of the stack of quasi-polarized K3 surfaces of low degree", *arXiv:1910.08758*, (submitted), 2019.

"Picard group of moduli of curves of low genus in positive characteristic", *Manuscripta Mathematica*, <https://doi.org/10.1007/s00229-020-01212-3>, 2020.

"Cohomological invariants of the stack of hyperelliptic curves of odd genus", *Transformation Groups*, <https://doi.org/10.1007/s00031-020-09598-w>, 2020.

"The Chow ring of the stack of hyperelliptic curves of odd genus", *International Mathematics Research Notices*, *rnz101*, <https://doi.org/10.1093/imrn/rnz101>, 2020.

"On quantum and relativistic analogues in Mean-Field Spin models", *Proc. Royal Soc. A*, **470**:20140589, with A. Barra, F. Guerra, A. Moro, 2015.

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## Long term visits

- Dec. 2019 **Research guest** (invited by A. Kresch), *University of Zürich*, Zürich.
- Spring 2017 **Ph.D. visiting student** (invited by A.J. de Jong), *Columbia University*, New York.

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## Short term visits

- Feb 2019 *Scuola Normale Superiore*, Pisa.
- Nov 2019 *KTH*, Stockholm.
- Aug 2019 *Scuola Normale Superiore*, Pisa.

## Conference talks

**"Intersection theory on moduli stacks"**, *"Giornate di Geometria Algebrica e Argomenti Correlati XV"*, Gargnano, June 2021 (upcoming).

**"The integral Chow ring of the stack of hyperelliptic curves of odd genus"**, *"GAeL XXVI"*, Strasbourg, June 2018.

## Seminar talks

**"Mixed Tate motives and Brown's theorem"**, *STAGOSAUR online seminar*, 7 August 2020.

**"The Chow ring of the stack of stable curves of genus 2"**, *KTH, Stockholm*, 30 October 2019.

**"Picard group of moduli of curves and K3 surfaces"**, *Aarhus University, Aarhus*, 9 October 2019.

**"Picard group of moduli of curves and K3 surfaces"**, *University of Ferrara, Ferrara*, 4 October 2019.

**"The integral Chow ring of stacks of hyperelliptic curves"**, *MSRI, Berkeley*, 28 February 2019.

**"The integral Chow ring of moduli stacks of curves"**, *MAGIC seminar, Imperial College, London*, 28 January 2019.

## Conferences and workshops attended

- May 2019 **Recent Progress in Moduli Theory**, *M.S.R.I., Berkeley, CA.*
- Mar. 2019 **Derived algebraic geometry and its applications**, *M.S.R.I., Berkeley, CA.*
- Sept. 2018 **CATS5**, *University of Lisbon, Lisbon.*
- July 2018 **The arithmetic of derived categories**, *University of Trento, Trento, (presented the poster "The Chow ring and cohomological invariants of moduli stack of hyperelliptic curves of odd genus").*
- June 2018 **GAeL XXVI**, *University of Strasbourg, Strasbourg.*
- June 2018 **A tale of Algebra and Geometry-a conference to celebrate Angelo Vistoli's 60th birthday**, *University of Pisa, Pisa.*
- March 2018 **School on birational geometry of hypersurfaces**, *Palazzo Feltrinelli, Gargnano sul Garda, (presented the poster "The Chow ring and cohomological invariants of moduli stack of hyperelliptic curves of odd genus").*
- Sept. 2017 **Modern Moduli Theory 2017**, *University of Oxford, Oxford.*
- Sept. 2017 **Vector Bundles on Algebraic Curves 2017**, *University of Duisburg-Essen, Essen.*
- July 2017 **School on Deformation Theory**, *Università di Torino, Torino.*

- June 2017 **GAeL XXV**, *University of Bath*, Bath.
- June 2017 **Derived algebraic geometry and interactions**, *Université Toulouse III-Paul Sabatier*, Toulouse.
- Sept. 2016 **School on Higgs bundles and fundamental groups of algebraic varieties**, *University of Duisburg-Essen*, Essen.
- Jan. 2016 **Torsors in algebraic and arithmetic geometry**, *University of Nice-Sophia Antipolis*, Nice.

## Services

Referee for Algebraic Geometry, *Annali della Scuola Normale Superiore di Pisa*, International Mathematics Research Notices.

## Teaching

- Fall 2020 **Topology of algebraic varieties**, Aarhus University.
- Fall 2019 **Cohomological field theories**, Aarhus University.

## Other activities

Co-organizer of the lecture course on "Derived algebraic geometry" at Scuola Normale Superiore, Pisa (8 lectures given), *Oct 2017-Jun 2018*.

Co-organizer of the lecture course on "Derived categories, Fourier-Mukai transform and Bridgeland stability" at Scuola Normale Superiore, Pisa (8 lectures given), *Oct 2016-Jun 2017*.

## Outreach activities

"University orientation courses" for high school students, organized by Scuola Normale Superiore, *San Gimignano (2016)*, *Roma (2017)*, *Napoli (2018)*.

Tutor for scientific subjects

## Awards and scholarships

- 2014-2015 Excellence program in Mathematics, MA, *Sapienza University of Rome*.
- 2012-2013 Excellence program in Mathematics, BA, *Sapienza University of Rome*.
- 2010-2013 Merit-based exemption from tuition fees payment

## Computer skills

- Operating systems Unix, Windows
- Programming languages Mathematica, SageMath

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## Languages

Italian	Mothertongue
English	Fluent
French	Beginner

Aarhus, September 28, 2020