



## Federico Fallucca

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## Work Experience

- **Research Fellow** - Istituto Nazionale di Alta Matematica INdAM-GNSAGA  
Research Unit at the University of Trento, Department of Mathematics  
Jun 1, 2025 - Present
- **Research Fellow** - University of Milano Bicocca, Department of Mathematics and Applications  
Mar 1, 2024 - Mar 1, 2026
- **Research collaboration** - University of Trento, Department of Mathematics  
Nov 9, 2023 - Dec 4, 2023  
Collaboration within the project "Classificazione di superfici prodotto-quotiente di genere basso".

## Education and Training

- **Ph.D. in Mathematics** (cotutelle de thèse)  
Nov 1, 2019 - Sep 26, 2023  
**Thesis:** On the degree of the canonical map of surfaces of general type.  
**Supervisors:** Prof. Dr. Ingrid Bauer and Prof. Dr. Roberto Pignatelli.  
**Dottorato di ricerca in Matematica** at the University of Trento, Italy.  
**Dr. rer. Nat.** at the University of Bayreuth, Germany.  
**Cotutelle de thèse** program in Mathematics between the University of Trento and the University of Bayreuth.  
**Final Grade:** Magna Cum Laude.
- **Master's Degree in Mathematics** - University of Trento, Italy  
Oct 24, 2017 - Oct 23, 2019  
**Thesis:** Classification of  $(\mathbb{Z}/2\mathbb{Z})^k$ -abelian coverings of  $\mathbb{P}^2$  with geometric genus equal to 3 and canonical linear system base point free.  
**Supervisor:** Prof. Dr. Roberto Pignatelli.  
**Final Grade:** Cum Laude.
- **Bachelor's Degree in Mathematics** - University of L'Aquila, Italy  
Aug 21, 2014 - Jul 22, 2017  
**Thesis:** Introduction to representations of groups of matrices: The case of  $SO(3, \mathbb{R})$ .  
**Supervisor:** Prof. Dr. Lucio Bedulli.  
**Final Grade:** Cum Laude.

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## Memberships of Research Groups

- **Surfaces of General Type and their Geometry**  
Mar 23, 2026 - Mar 24, 2027  
Research Project coordinated by Prof. Dr. Davide Frapporti, funded by GNSAGA-INdAM: 1800€.

- **Classification problems in Algebraic Geometry: Lefschetz Properties and Moduli Spaces**  
Mar 13, 2023 - Mar 14, 2024  
Research Project coordinated by Prof. Dr. Filippo Favale, funded by GNSAGA-INdAM: 3500€.
- **TensorDec Group**  
Feb 2026 - Present  
I am one of the members of the TensorDec Lab, the laboratory on Algebra, Geometry and applications of tensor decompositions.

## Memberships of Mathematical Societies

- **GNSAGA-INdAM**  
Feb 1, 2020 - Present  
I am a member of GNSAGA, the National Group for Algebraic and Geometric Structures and their Applications, a section of INdAM, the National Institute of High Mathematics in Rome.
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## Preprints

- **Some rational subvarieties of moduli spaces of stable vector bundles**, with S. Brivio, F.F. Favale, (2026), arXiv:2602.16510.

## Publications

- **On rigid varieties isogenous to a product of curves**, with C. Gleissner, N. Ruhland, J. Algebra, **688**, 393–419, (2025), doi:10.1016/j.jalgebra.2025.09.016.
  - **On the classification of product-quotient surfaces of general type with  $q = 0$ ,  $p_g = 3$  and their canonical map**, Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur., **35**, no. 4, 529–596, (2024), doi:10.4171/RLM/1051.
  - **Examples of surfaces with canonical map of degree 12, 13, 15, 16, and 18**, Ann. Mat. Pura Appl., **203**, 1015-1024, (2024), doi:10.1007/s10231-023-01363-6.
  - **Smooth  $k$ -double covers of the plane of geometric genus 3**, with R. Pignatelli, Rend. Mat. Appl., **45**, 153-180, (2024), <https://sites.google.com/uniroma1.it/rendiconti/volume-45-3-2024>.
  - **Some surfaces with canonical maps of degree 10, 11 and 14**, with C. Gleissner, Math. Nachr., **296** (11), 5063-5069, (2023), doi:10.1002/mana.202200450.
  - **Some surfaces with canonical map of degree 4**, with R. Pignatelli, Port. Math., **80**, 391-400, (2023), doi:10.4171/PM/2106.
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## Refereeing Activity

- **Experimental Mathematics**, Taylor & Francis
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## Organized Conferences and Seminar Cycles

- **Geosem 2025 - 2026** - University of Trento  
Nov 1, 2025 - Present  
I am an organizer of 'Geosem', a seminar series in Algebraic Geometry.

- **Geometria in Bicocca 2025** - University of Milano Bicocca  
Sep 11, 2025 - Sep 12, 2025
- **Geometria in Bicocca 2024** - University of Milano Bicocca  
Sep 9, 2024 - Sep 10, 2024
- **Doc in Progress** - University of Trento, Department of Mathematics  
Sep 2020 - Jan 2023  
'Doc in Progress' consists of a series of meeting with dissemination purposes. Speakers are chosen from among currently Ph.D. students as the name suggests, in Mathematics or related fields.

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## Research visits

- IMPAN, Warsaw, Oct 22, 2025 - Oct 25, 2025
- University of Bayreuth, Germany, Jan 13, 2025 - Jan 19, 2025

## Participation at conferences as invited speaker

- **GAeL XXXII** - IMT Toulouse, France.  
Jun 16, 2025 - Jun 20, 2025  
**Title:** Classification of  $(k, p)$ -covers of the plane with geometric genus three.
- **School on Deformation Theory IV** - Sapienza, University of Rome, Italy.  
Sep 16, 2024 - Sep 20, 2024  
**Title:** New results on the degree of the canonical map of surfaces of general type.  
This talk was part of a series of mini-talks given during the lectures of the school.
- **Winter Workshop on Algebraic Geometry** - University of Pavia, Italy.  
Feb 26, 2024 - Feb 28, 2024  
**Title:** Explicit description of coverings of the projective line from spherical systems of generators.
- **Aspects of Algebraic Geometry** - Cetraro, Italy  
Sep 18, 2023 - Sep 22, 2023  
**Title:** New examples of surfaces of general type with a high degree of the canonical map.
- **Algebraic Geometry in Roma Tre. A conference on the occasion of Sandro Verra's 70(+2)th birthday** - University of Roma Tre, Italy  
Jul 14, 2022 - Jul 17, 2022  
**Poster presentation:** Surfaces with canonical map of degree 10, 11, 14.  
In collaboration with Prof. Dr. Christian Gleissner.
- **First UMI meeting of Ph.D. students** - University of Padova, Italy  
May 26, 2022 - May 27, 2022  
**Title:** Surfaces with canonical map of high degree.  
The meeting was part of the celebrations for the 100 years of the Italian Mathematical Society and the 800 years of the University of Padova, held in Padova in the week 23-27 May 2022.

## Invited Talks

- **University of Trento, Italy**  
Dec 11, 2025  
**Title:** Product-quotient surfaces of general type with  $p_g = q = 0$  that are Mori Dream.
- **IMPAN, Warsaw**  
Oct 24, 2025  
**Title:** Product-quotient surfaces of general type with  $p_g = q = 0$  that are Mori Dream.

- **Saarland University, Germany**  
Jan 21, 2025  
**Title:** Classification of  $(k, p)$ -covers of the plane with geometric genus three.
- **University of Bayreuth, Germany**  
Jan 16, 2025  
**Title:** Beauville manifolds and groups with a Beauville structure.
- **University of Genova, Italy**  
Nov 5, 2024  
**Title:** Classification of  $(k, p)$ -covers of the plane with geometric genus three.
- **University of Milano Bicocca, Italy**  
May 13, 2024  
**Title:** On the classification of product-quotient surfaces with  $q = 0$ ,  $p_g = 3$ , and their canonical map.
- **University of Turin, Italy**  
Mar 5, 2024  
**Title:** How to construct all families of product-quotient surfaces of general type from a pair of topological types of  $G$  - coverings of the projective line: theory and applications.
- **Politecnico di Milano - Department of Mathematics, Italy**  
Oct 5, 2023  
**Title:** From a database of  $G$  - coverings of the projective line to a database of families of product-quotient surfaces.
- **University of Pavia, Italy**  
Oct 3, 2023  
**Title:** Counting families of product-quotient surfaces arising from a pair of topological types of  $G$  - coverings of the projective line.
- **University of Bayreuth, Germany**  
Jul 21, 2022  
**Title:** Examples of surfaces with canonical map of degree 4.
- **University of Bayreuth, Germany**  
Oct 26, 2021  
**Title:** On the degree of the canonical map of a product-quotient surface.

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## Teaching Experience

### PhD Courses

- *Abelian coverings of algebraic varieties* - University of Trento - Department of Mathematics  
Nov 2025 - Feb 2026  
30 hours of lectures with exam sessions for Ph.D. students.

### Teaching

- *Geometry and Topology in Data Analysis* - University of Trento - Department of Math.  
Feb 2026 - Sep 2026  
42 lecture hours and 3 examination sessions, taught in English.

### Teaching Assistant

- *Analisi 2* - University of Milano Bicocca - Department of Physics  
Oct 2024 - Jan 2025  
24 lecture hours and 5 examination sessions.
- *Geometry* - Politecnico di Milano - Department of Mathematics  
Sep 2024 - Jan 2025  
24 lecture hours and 5 examination sessions, taught in English.

- **Analisi 2** - University of Trento - Department of Engineering  
Oct 2023 - Feb 2024  
30 lecture hours and 5 examination sessions.
  - **Geometria** - University of Trento - Department of Engineering  
Sep 2023 - Feb 2024  
22 lecture hours and 5 examination sessions.
  - **Geometria 1** - University of Trento - Department of Physics  
Sep 2022 - Feb 2023  
28 lecture hours and 5 examination sessions.
  - **Geometria 1** - University of Trento - Department of Physics  
Sep 2020 - Feb 2021  
28 lecture hours and 5 examination sessions.
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## Honours and Awards

- **Nominee for the Con.Scienze 2025 National PhD Prize in Mathematics** Winner of the internal selection at the Department of Mathematics of the University of Trento among PhD theses defended between August 1, 2023 and July 30, 2025, for admission to the Con.Scienze 2025 – National PhD Award in Mathematics, organized by the National Conference of Presidents and Directors of University Departments of Science and Technology.
  - **Kovalevskaya grant ICM 2022** - Saint Petersburg, Russia  
Jul 6, 2022  
Grant to participate at ICM, the International Congress of Mathematics, awarded by ICM and UMI, the Italian Mathematical Society. The event was canceled due to the war between Russia and Ukraine.
  - **Ph.D. scholarship at the University of Trento**  
Nov 1, 2019  
Three-year scholarship to support doctoral research studies in Mathematics at the University of Trento.
  - **Scholarship for undergraduate students at the University of L'Aquila**  
Jul 22, 2015  
3000€ scholarship for deserving students enrolled in the first year of the Bachelor's degree program in Mathematics at the University of L'Aquila.
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## Q&A Math Stack Exchange

**Account:** <https://math.stackexchange.com/users/531470/federico-fallucca>

I am a user of Q&A Math Stack Exchange website, where I enjoy answering and asking questions from every branch of Mathematics.

## Language Skills

- **Mother Language:** Italian.
- **Other Language(s):** English (level B2).

## Digital Skills

LaTeX, MAGMA, MATLAB, Java, HTML, CSS.

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