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 Project: Mori Dream surfaces of general type with $p_g = q = 0$.

- **Research Fellow** - University of Milano Bicocca, Department of Mathematics and Applications
  Mar 1, 2024 - Mar 1, 2026
  Research Project: On the classification of regular product-quotient surfaces of low genus and applications to the degree of the canonical map of surfaces of general type.

- **Research collaboration** - University of Trento, Department of Mathematics
  Nov 9, 2023 - Dec 4, 2023
  Collaboration within the project "Classificazione di superfici prodotto-quoziente 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.

Memberships of Research Groups

- **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€.

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.

Publications

- **On rigid varieties isogenous to a product of curves**, with C. Gleissner, N. Ruhland, J. Algebra, online first, (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://www1.mat.uniroma1.it/ricerca/rendiconti/45_3_(2024).html`.

- **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.

Organized Conferences and Seminar Cycles

- **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.

Research visits

- 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

- **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.

Teaching Experience

- **Teaching Assistant** of the course "Analisi 2" - University of Milano Bicocca - Department of Physics
  Oct 2024 - Jan 2025
  The commitment involves delivering 24 hours of lectures and participating in five exam sessions.

- **Teaching Assistant** of the course "Geometry " - Politecnico di Milano - Department of Mathematics
  Sep 2024 - Jan 2025
  The lectures are conducted in English, involving the delivery of 24 hours of lectures and participation in five exam sessions.

- **Teaching Assistant** of the course "Analisi 2" - University of Trento - Department of Engineering
  Oct 2, 2023 - Feb 22, 2024
  The commitment involves delivering 30 hours of lectures, conducting weekly student office hours, and participating in five exam sessions.

- **Teaching Assistant** of the course "Geometria" - University of Trento - Department of Engineering
  Sep 27, 2023 - Feb 21, 2024
  The commitment involves delivering 22 hours of lectures, conducting weekly student office hours, and participating in five exam sessions.

- **Teaching Assistant** of the course "Geometria 1" - University of Trento - Department of Physics
  Sep 12, 2022 - Feb 22, 2023
  The commitment involves delivering 28 hours of lectures, conducting weekly student office hours, and participating in five exam sessions.

- **Teaching Assistant** of the course "Geometria 1" - University of Trento - Department of Physics
  Sep 14, 2020 - Feb 22, 2021
  The commitment involves delivering 28 hours of lectures, conducting weekly student office hours, and participating in five exam sessions.

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.

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.