



Federico Fallucca

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WORK EXPERIENCE

Research Fellow - University of Milano Bicocca - Department of Mathematics and Applications

[1 Mar 2024 – Current]

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"

Supervisor: Prof. Sonia Brivio

Research collaboration - University of Trento, Italy

[9 Nov 2023 – 4 Dec 2023]

Collaboration within the project "Classificazione di superfici prodotto-quotiente di genere basso".

EDUCATION AND TRAINING

Ph.D in Mathematics (cotutelle de thèse)

[1 Nov 2019 – 26 Sep 2023]

Thesis: On the degree of the canonical map of surfaces of general type

Link: <https://fefe9696.github.io/FedericoFallucca/pubbl.html#PhDTh>

Dottorato di ricerca in Matematica at the University of Trento, Italy.

Final Grade: Cum Laude

Dr. rer. Nat. at the University of Bayreuth, Germany.

Final Grade: Magna Cum Laude

Cotutelle de thèse program in Mathematics between the University of Trento, Italy, and the University of Bayreuth, Germany.

Supervisors: Prof. Dr. Ingrid Bauer and Prof. Dr. Roberto Pignatelli.

Master's Degree in Mathematics - Curriculum Advanced Mathematics

University of Trento [24 Oct 2017 – 23 Oct 2019]

City: Trento | **Country:** Italy | **Field(s) of study:** Mathematics | **Final grade:** full marks with honours (cum laude) | **Level in EQF:** EQF level 7 | **Thesis:** Classification of $(\mathbb{Z}/2\mathbb{Z})^k$ -abelian coverings of P^2 with geometric genus equal to 3 and canonical linear system base point free.

Bachelor's Degree in Mathematics

University of L'Aquila [21 Aug 2014 – 22 Jul 2017]

City: L'Aquila | **Country:** Italy | **Field(s) of study:** Mathematics | **Final grade:** full marks with honours (cum laude) | **Level in EQF:** EQF level 6 | **Thesis:** Introduzione alle rappresentazioni di gruppi di matrici: Il caso di $SO(3, \mathbb{R})$ - Introduction to representations of groups of matrices: The case of $SO(3, \mathbb{R})$

PUBLICATIONS

[2024]

[On the classification of product-quotient surfaces with \$q=0\$, \$pg=3\$ and their canonical map](#) ArXiv version

[2023]

[Smooth \$k\$ -double covers of the plane of geometric genus 3](#) with R. Pignatelli, Rend. Mat. Appl., 45, 153-180

[2023]

[Examples of surfaces with canonical map of degree 12, 13, 15, 16, and 18](#) Ann. Mat. Pura Appl. (online first)

[2023]

[Some surfaces with canonical map of degree 4](#) with R. Pignatelli, Port. Math., 80, 391-400

[2023]

[Some surfaces with canonical maps of degree 10, 11 and 14](#) with C. Gleissner, Math. Nachr., 296 (11), 5063-5069

HONOURS AND AWARDS

[6 Jul 2022]

Kovalevskaya grant ICM 2022 Grant to participate to the International Congress of Mathematics (ICM) in Saint Petersburg (Russia), 6 -14 July 2022 (canceled due to the war between Russia and Ukraine), awarded by ICM and Italian Mathematical Union.

[1 Nov 2019]

Ph.D. scholarship at the University of Trento Three-year scholarship to support doctoral research studies in Mathematics at the University of Trento.

[22 Jul 2015]

Scholarship for undergraduate students in Mathematics at the University of L'Aquila €3000 scholarship for deserving students enrolled in the first year of the Bachelor's degree program in Mathematics at the University of L'Aquila.

CONFERENCES AND SEMINARS

[26 Feb 2024 – 28 Feb 2024] Pavia, Italy

Winter Workshop on Algebraic Geometry

Talk: Explicit description of coverings of the projective line from spherical systems of generators.

Link: <https://sites.google.com/unipv.it/winter-workshop-on-ag-2024/titles-and-abstracts>

[18 Sep 2023 – 22 Sep 2023] Cetraro, Calabria

Aspects of Algebraic Geometry

Talk: New examples of surfaces of general type with a high degree of the canonical map.

Link: <https://sites.google.com/unitn.it/aspects-of-algebraic-geometry/abstracts>

[14 Jul 2022 – 17 Jul 2022] Rome, Italy

Algebraic Geometry in Roma Tre. A conference on the occasion of Sandro Verra's 70(+2)th birthday

Poster presentation: Surfaces with canonical map of degree 10, 11, 14.

Joint presentation with Christian Gleissner.

Link: <http://ricerca.matfis.uniroma3.it/users/moduli/verra70/poster.html>

[26 May 2022 – 27 May 2022] Padua, Italy

First UMI meeting of Ph.D. students

Talk: Surfaces with canonical map of high degree.

The meeting was part of the celebrations for the 100 years of the Italian Mathematical Union and the 800 years of the University of Padua, held in Padua in the week 23-27 May 2022.

Link: https://www.100umi800unipd.it/?page_id=362#parallel-sessions

INVITED TALKS

[13 May 2024]

University of Milano-Bicocca, Italy

Title: On the classification of product-quotient surfaces with $q=0$, $p_g=3$, and their canonical map

[5 Mar 2024]

University of Turin, Italy

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.

[5 Oct 2023]

Politecnico di Milano - Department of Mathematics, Italy

Title: From a database of G -coverings of the projective line to a database of families of product-quotient surfaces.

[3 Oct 2023 – 4 Oct 2023]

University of Pavia, Italy

Title: Counting families of product-quotient surfaces arising from a pair of topological types of G -coverings of the projective line.

[21 Jul 2022]

University of Bayreuth, Germany

Title: Examples of surfaces with canonical map of degree 4

I presented the paper *Examples of surfaces with canonical map of degree 4*, by Carlos Rito.

The talk was given within the seminars series of Algebraic Geometry Group at the University of Bayreuth.

[26 Oct 2021]

University of Bayreuth, Germany

Title: On the degree of the canonical map of a Product-Quotient surface

I presented my research activity. The talk was given within the seminars series of Algebraic Geometry Group at the University of Bayreuth.

TEACHING EXPERIENCE

[2 Oct 2023 – 22 Feb 2024]

Teaching Assistant of the course "Analisi 2"

Teaching assistant for the course of Analysis 2 for students in Engineering at the University of Trento. The commitment includes delivering 30 hours of lectures, conducting weekly student office hours, and participating in five exam sessions.

[27 Sep 2023 – 21 Feb 2024]

Teaching Assistant of the course "Geometria"

Teaching assistant for the course of Geometry for students in Engineering at the University of Trento. The commitment includes delivering 22 hours of lectures, conducting weekly student office hours, and participating in five exam sessions.

[12 Sep 2022 – 22 Feb 2023]

Teaching Assistant of the course "Geometria 1"

Teaching assistant for the course of Geometry and Linear Algebra for undergraduate students in Physics at the University of Trento. The commitment included delivering 28 hours of lectures, conducting weekly student office hours, and participating in five exam sessions.

[14 Sep 2020 – 22 Feb 2021]

Teaching Assistant of the course "Geometria 1"

Teaching assistant for the course of Geometry and Linear Algebra for undergraduate students in Physics at the University of Trento. The commitment included delivering 28 hours of lectures, conducting weekly student office hours, and participating in five exam sessions. Due to the pandemic, the lessons were held both in person and remotely.

[29 Jun 2020 – 9 Nov 2020]

Supervisor of online university exams

Due to the pandemic, the University of Trento had to conduct many written exams online that were originally planned to be in person. Paid proctoring positions were offered for overseeing these exams. I was granted 16 hours of paid proctoring for the Linear Algebra course in the Civil, Environmental, and Mechanical Engineering Bachelor's degree program.

ORGANIZATIONS

[Sep 2020 – Jan 2023]

Doc in Progress, University of Trento, Department in Mathematics

I have been one of the organizers of the cycle "Doc in Progress", which 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.

Link: <https://docinprogressunitn.wordpress.com/>

NETWORKS AND MEMBERSHIPS

[13 Mar 2023 – 13 Mar 2024] Research Project GNSAGA-INdAM

Classification Problems in Algebraic Geometry: Lefschetz Properties and Moduli Spaces I was one of the members of the Research Project CUP_E53C22001930001 coordinated by Filippo Favale funded by GNSAGA-INdAM: the National Group for Algebraic and Geometric Structures and their Applications, a section of the National Institute of High Mathematics in Rome.

[1 Feb 2020 – Current]

GNSAGA - INdAM 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

Link: <https://www.altamatematica.it/gnsaga/attivit/>

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

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

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

LaTeX / MAGMA / MATLAB / Java / HTML / CSS