Claudia Fevola

Curriculum Vitae

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Positions

01/2026 - current **Assistant Professor**, *(with tenure-track) Mathematics Department*, CUNEF University, Madrid.

11/2023 - 01/2026 **Marie Skłodowska-Curie fellow**, *MATHEXP team*, INRIA Saclay, Palaiseau.
Funded by the MathInGreaterParis Fellowship Programme.

06/2023 - 10/2023 **Postdoctoral Researcher in Mathematics**, *Nonlinear Algebra group*, Max Planck Institute for Mathematics in the Sciences, Leipzig.

Education and Degrees

04/2020 - 06/2023 **PhD student**, *Mathematics*, Max Planck Institute for Mathematics in the Sciences, Leipzig.
Thesis title: Computation and Physics in Algebraic Geometry
Advisors: Daniele Agostini and Bernd Sturmfels
Grade: Summa cum laude

04/2019 - 08/2019 **Erasmus+ Exchange Programme**, University of Augsburg, Germany.
Research for Master Thesis in Algebraic Geometry

09/2017 - 02/2020 **Master of Science**, *Mathematics*, Università degli Studi di Napoli "Federico II", Italy.
Thesis title: Even Sets of Eight Rational Curves on a K3-surface
Advisors: Davide Franco and Marco Ramponi
Grade: 110/110

02/2016 - 06/2016 **Erasmus+ Exchange Programme**, University of Lisbon, Portugal.

09/2013 - 07/2017 **Bachelor of Science**, *Mathematics*, Università degli Studi della Campania "Luigi Vanvitelli", Italy.

Grants

- **MathInGreaterParis Postdoctoral Fellowship** (2023-2025), cofunded by Marie Skłodowska-Curie Actions (MSCA) and Fondation Sciences mathématiques de Paris (FSMP).

Awards

- **Otto Hahn Medal** for the year 2024.
  Awarding Institution: Max Planck Society.

Publications

11. **Algebraic and Positive Geometry of the Universe: from Particles to Galaxies**, with Anna-Laura Sattelberger. *Notices of the American Mathematical Society*, Volume 72, Number 8, September 2025.

10. **Algebraic Approaches to Cosmological Integrals**, with Guilherme L. Pimentel, Anna-Laura Sattelberger, and Tom Westerdijk. *Le Matematiche* **80** No. 1 (2025) 303–324 .

9. **Principal Landau Determinants**, with S. Mizera and S. Telen. *Computer Physics Communications* **303** (2024), 109278.

8. **Vector Spaces of Generalized Euler Integrals**, with D. Agostini, A.–L. Sattelberger, and S. Telen. *Communications in Number Theory and Physics* **18** (2024) 2, 327-370.

7. **Landau singularities revisited: Computational algebraic geometry for Feynman integrals**, with S. Mizera and S. Telen. *Physical Review Letters* **132** (10), 101601 – Published 4 March 2024.

6. **Hirota Varieties and Rational Nodal Curves**, with Y. Mandelshtam. *Journal of Symbolic Computations* **120** (2024) 102239.

5. **The Enumerative Geometry of Cubic Hypersurfaces: Point and Line Conditions**, with M. Belotti, A. Danelon, and A. Kretschmer. *Collectanea Mathematica* (2023) **75**, 593–627.

4. **Likelihood Degenerations**, with D. Agostini, T. Brysiewicz, L. Kühne, B. Sturmfels, and S. Telen. *Advances in Mathematics* **414** (2023) 108863.

3. **KP Solitons from Tropical Limits**, with D. Agostini, Y. Mandelshtam, and B. Sturmfels. *Journal of Symbolic Computation* **114** (2023) 282–301.

2. **Tangent Quadrics in Real 3-Space**, with T. Brysiewicz and B. Sturmfels. *Le Matematiche* **76** (2021) 355–367.

1. **Pencils of Quadrics: Old and New**, with Y. Mandelshtam and B. Sturmfels. *Le Matematiche* **76** (2021) 319–335.

Preprints

1. **Euler Discriminant of Complements of Hyperplanes**, with Saiei-Jaeyeong Matsubara-Heo. ArXiv: 2411.19696 .

Expository Articles

1. **The Mathematical Research-Data Repository MathRepo**, with C. Görgen (2022). *Der Computeralgebra-Rundbrief Nr.* **70** *16–20*.

Research Visits

- University of Amsterdam, Netherlands. October 27–November 14, 2025
  Contact person: Daniel Baumann. Meeting for scientific discussion.
- Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany. March 24–28, 2025 and June 30–July 4, 2025
  Contact person: Türkü Ôzlüm Çelik. Meeting for scientific discussion.
- Laboratoire d'Annecy-le-Vieux de Physique Théorique (LAPTh), Annecy, France. February 17–21, 2025
  Contact person: Piotr Tourkine. Meeting for scientific discussion.
- University of Amsterdam, Netherlands. October 1–11, 2024
  Contact person: Daniel Baumann. Meeting for scientific discussion.
- Scuola Normale Superiore, Pisa, Italy. September 23-27, 2024
  Contact person: Guilherme L. Pimentel. Meeting for scientific discussion.

- Università di Bologna, Italy. August 19-23, 2024
  Contact person: Simonetta Abenda. Meeting for scientific discussion.
- College of Sciences of Koç University, Istanbul, Turkey. December 12-19, 2023
  Contact person: Türkü Ôzlüm Çelik. Meeting for scientific discussion and seminar talk.
- Institute for Advanced Studies, Princeton, US. February 15-23, 2023
  Contact person: Dr. Sebastian Mizera. Meeting for scientific discussion and seminar talk.
- Inria Saclay (MATHEXP team), Paris, France. November 21-25, 2022
  Contact person: Prof. Pierre Lairez. Meeting for scientific discussion and seminar talk.
- Max Planck Institute for Physics, Munich, German, September 27 - October 1, 2021
  Contact person: Prof. Johannes Henn. Meeting for scientific discussion.

Conference Talks

- **Euler Discriminant of Complements of Hyperplanes**
  Singularities, D-modules, and Connections to Physics, Banff International Research Station, Banff, Canada - September 14 – 19, 2025
- **KP solitons: tropical curves meet Grassmannians**
  Computations in Algebraic Geometry: Complex, Real, and Tropical, ETH, Zürich - September 25–29, 2025
- **KP solitons: tropical curves meet Grassmannians**
  Recent Advances in Classical and Quantum Integrability, University of Leeds - June 2–6, 2025
- **Euler Discriminant of Complements of Hyperplanes**
  Combinatorics of Fundamental Physics Workshop, Institute for Advanced Studies, Princeton - November 18 – 22, 2024
- **Euler Discriminant of Complements of Hyperplanes**
  Holonomic Techniques for Feynman Integrals, Max Planck Institute for Physics, Munich - October 14–18, 2024
- **Landau Singularities**
  Positive Geometry in Particle Physics and Cosmology, MPI MiS, Leipzig - February 12–16, 2024.
- **Principal Landau Determinants: Part I**
  Tropical Geometry and Infrared Divergences: Heated Discussions on Cool Topics, Institute for Advanced Studies, Princeton - October 2–6, 2023.
- **Principal Landau Determinants: Part I**
  MathemAmplitudes 2023: QFT at the Computational Frontier, Centro Universitario Padovano - September 25–27, 2023.
- **Principal Landau Determinants**
  SIAM Conference on Applied Algebraic Geometry (AG23), Eindhoven University of Technology - July 10–14, 2023.
- **Generalized Euler integrals**
  A Hypergeometric Day, MPI MiS, Leipzig - May 5, 2023.
- **KP solutions from nodal curves, and the Schottky problem**
  Regional Workshop in Algebraic Geometry, University of Jena - March 29–31, 2023.
- **KP solutions from nodal curves, and the Schottky problem**
  Joint Mathematics Meetings (JMM 2023), Boston - January 4–7, 2023.
- **Generalized Euler integrals: differential operators and convex polytopes**
  Tropical and Convex Geometry and Feynman integrals, Institute for Theoretical Studies, ETH Zürich - September 5–9, 2022.

- **Rational Nodal Curves, KP Solutions, and the Schottky Problem**
  MEGA 2022, Kraków - June 20–24, 2022.
- **Nonlinear Algebra meets Feynman Integrals**
  Workshop on Nonlinear Algebra and Combinatorics from Physics, CMSA Harvard University
  - April 27–29, 2022.
- **KP Solitons from Tropical Limits**
  Leipzig Lectures on Theta - Replacement, MPI MiS Leipzig - March 15–17, 2022.
- **Master Integrals and twisted de Rham Cohomology**
  Feynman integrals and nonlinear algebra, MPI MiS Leipzig - March 10–11, 2022.
- **Likelihood Degenerations**
  Mini-Workshop: Scattering Amplitudes, Cluster Algebras, and Positive Geometries (hybrid
  meeting), Oberwolfach - December 5-11, 2021.
- **KP Solitons from Tropical Limits**
  Workshop Non-Archimedean and Tropical Geometry. Goethe University, Frankfurt. Online
  - December 10, 2021
- **Likelihood Degenerations**
  Women in Algebra and Symbolic Computations II, Bad Dürkheim - November 29-December
  1, 2021.
- **M-Curves**
  Mini-Workshop on Curves and Riemann Surfaces, MPI MiS Leipzig - November 25, 2021.
- **Pencils of Quadrics: Old and New**
  SIAM Conference on Applied Algebraic Geometry, Texas A&M University - August 2021.
- **KP Solitons from Tropical Limits**
  MEGA 2021, Tromsø, June 2021.

Seminar Talks

- **KP Solitons: Tropical Curves meet Grassmannians**
  Dublin Mathematics Colloquium, Geometry Seminar, School of Mathematics, Trinity College Dublin - November 26, 2025.
- **Exploring Singularities of Integrals from Physics via Computational Algebraic Geometry**
  Laboratoire d'Annecy-le-Vieux de Physique Théorique (LAPTh), Annecy, France- February 20, 2025.
- **Euler Discriminant of Complements of Hyperplanes**
  Seminari di Algebra, Geometria Algebrica e Applicazioni - Department of Mathematical Sciences "G. L. Lagrange" of Politecnico di Torino - December 10, 2024.
- **Euler Discriminant of Complements of Hyperplanes**
  Differential Seminar - Laboratoire de Mathématiques de Versailles - November 12, 2024.
- **Computational Algebraic Geometry for Feynman Integrals and their Singularities**
  Group Seminar - Center for Theoretical Physics (CPHT), Ecole Polytechnique, France - June 17, 2024.
- **Computational Algebraic Geometry for Feynman Integrals and their Singularities**
  Seed Seminar of Mathematics and Physics, Intitut Henri Poincaré, Paris - March 27, 2024.
- **Computational Algebraic Geometry for Feynman Integrals and their Singularities**
  IJCLab Seminar, Orsay - March 1, 2024.
- **KP solutions from nodal curves, and the Schottky problem**
  The Bielefeld Algebraic and Arithmetic Geometry Seminar 2023, University of Bielefeld - January 31, 2024.

- **Nonlinear Algebra in Particle Physics**
  Koç University Math Seminar, Koç University - December 14, 2023.
- **Vector Spaces of Generalized Euler Integrals**
  Seminar Number Theory and Algebraic Geometry, KU Leuven - May 11, 2023.
- **Vector Spaces of Generalized Euler Integrals**
  Applied Combinatorics, Algebra, Topology & Statistics, KTH Stockholm - April 18, 2023.
- **KP Solutions from Tropical Limits**
  Latin American Geometria Algebraica Real y TrOpical Seminar, Online - March 24, 2023.
- **KP Solitons from Tropical Limits**
  Oberseminar Kombinatorische Algebraische Geometrie Tübingen, University of Tübingen - February 1, 2023.
- **KP Solitons from Tropical Limits**
  Seminar Algebra and Combinatorics, University of Leipzig - December 8, 2022.
- **Vector Spaces of Generalized Euler Integrals**
  The Joint MATHEXP-POLSYS Seminar, Paris, Jussieu - November 25, 2022.
- **Vector Spaces of Generalized Euler Integrals**
  Kolchin Seminar in Differential Algebra, Online - September 30, 2022.
- **Pencils of Quadrics: Old and New**
  Brown Combinatorics Seminar: Combinatorics and Nonlinear Algebra Day at Brown, Brown University - April 26, 2022.
- **The Enumerative Geometry of Cubic Hypersurfaces: Point and Line Conditions**
  Seminar on Nonlinear Algebra, MPI MiS Leipzig - October 2021.
- **Pencils of Quadrics: Old and New**
  Ghent Junior Algebra and Geometry Seminar. June 21, 2021.
- **KP Solitons from Tropical Limits**
  Graduate Inter-university Math Seminar. Online - May, 2021.
- **KP Solitons from Tropical Limits**
  SFU Number Theory and Algebraic Geometry Seminar. Online - March 2021.

Teaching

- Second semester 2023/2024: 28 hours as teaching assistant for "Machine Learning" (Bachelor of Science - École Polytechnique).
- Domoschool 2024: Intersecting Feynman Integrals. Minicourse on "Topology and Geometry of Euler-Mellin-Feynman integrals" - Domodossola, Italy. July 15-19, 2024.

Advising

- Internship Advisor: March – August 2025. Supervisor for Jaali Mazzaggio, a Master's student from the Université de Versailles Saint-Quentin-en-Yvelines (UVSQ), enrolled in the "Algèbre Appliquée - Cryptographie" program.

Organization

- "*MathemAmplitudes 2025: Co-homology and Combinatorics of GKZ systems, Euler-Mellin-Feynman Integrals, and Scattering Amplitudes*" - MITP, Mainz - September 22-26, 2025. Organizer together with Federico Gasparotto, Manoj Kumar Mandal, Pierpaolo Mastrolia, and Sebastian Mizera.
- Minisymposium "*Algebraic Curves, Integrable Systems, and Computer Algebra*" - SIAM Conference on Applied Algebraic Geometry (AG23), Eindhoven University of Technology - July 10-14, 2023. Organizer together with Türkü Özlüm Çelik.

- Reading Group on "*KP Solitons and the Grassmannian*" - Online, Fall 2020.
- Maintainer for the online repository MathRepo.

Languages

- Italian (Native speaker), English (C1/C2), Spanish (A2), French (A2)

Signature: _____

Date: January 25, 2026