

Annalisa Grossi

Curriculum Vitae

P.zza di Porta San Donato 5
40126 Bologna, Italia

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Personal informations

Date of birth 07.01.1992

Place of birth Rimini

Nationality Italian

Research interests Algebraic Geometry, Hyperkähler Geometry, Moduli Spaces, Hodge Theory, Singularities, Lattice Theory.

Employment

05.2024 – on going **Post-doc in PRIN22 from title "Symplectic varieties: their interplay with Fano manifolds and derived categories"**, Università degli studi di Bologna, Department of Mathematics, P.zza di Porta San Donato 5, 40126 Bologna (Italy).

Mentor: Prof. Giovanni Mongardi.

09.2024 – on going **Adjoint professor at Department of Engineering, University of Bologna.**

04.2023 – 04.2024 **Postdoctoral fellow, ERC Synergy Grant 854361 "HyperK"**, Université Paris-Saclay, Laboratoire de mathématiques d'Orsay, Rue Michel Magat, Bât. 307, 91405 Orsay, France.

Mentor: Prof. Emanuele Macrì.

10.2020 – 03.2023 **Post-doc position**, Technische Universität Chemnitz, Fakultät für Mathematik, Reichenhainer Straße 39, 09111 Chemnitz, Germany.

Mentor: Prof. Christian Lehn.

10.2019 – 9.2020 **Post-doc position**, Universität Augsburg, Fakultät für Mathematik, Universitätsstraße 2, 86159 Augsburg, Germany.

Mentor: Prof. Marc Nieper-Wißkirchen.

Education

10.2016 – 9.2019 **Ph.D. in Mathematics**, Università degli studi di Bologna, Department of Mathematics, P.zza di Porta San Donato 5, 40126 Bologna (Italy).

Thesis: Automorphisms of O'Grady's sixfolds.

Advisor: Prof. Giovanni Mongardi.

Final defence: 03.04.2020.

- 10.2014 – 9.2016 **Master degree in Mathematics**, Università degli studi di Bologna, Department of Mathematics, P.zza di Porta San Donato, 40126 Bologna (Italy).
Thesis: Varietà toriche e politopi convessi.
Advisor: Prof. Luca Migliorini.
Final defence: 23.09.2016.
Final mark: 110/110 cum laude.
- 9.2011 – 9.2014 **Bachelor degree in Mathematics**, Università degli studi di Bologna, Department of Mathematics, P.zza di Porta San Donato, 40126 Bologna (Italy).
Thesis: Un'applicazione della teoria di Morse alla topologia delle varietà di Stein.
Advisor: Prof. Luca Migliorini.
Final defence: 24.10.2014.
Final mark: 110/110 cum laude.
- 2011 **Diploma di maturità scientifica, (indirizzo PNI)**, Liceo scientifico Alessandro Serpieri, Rimini (Italy).
Final mark: 100/100 cum laude.

Publications

1. D. Al Tabbaa, A. Grossi, A. Sarti. *Symmetries of order eight on K3 surfaces without high genus curves in the fixed locus*. **Geometry at the Frontier, Contemporary Mathematics**, **766**, Amer. Math. Soc., Providence, RI, (2021), 17-30. doi.org/10.1090/conm/766/15370
2. A. Grossi. *Induced birational transformations on O'Grady's sixfolds*. **Journal of The London Mathematical Society**, **105** (2022), no. 1, 665-690. doi.org/10.1112/jlms.12538
3. A. Grossi, C. Onorati, D.C. Veniani. *Symplectic birational transformations of finite order on O'Grady's sixfolds*. **Kyoto Journal of Mathematics**, **63** (2023), no. 3, pp. 615–639, [doi 10.1215/21562261-10577928](https://doi.org/10.1215/21562261-10577928).
4. A. Grossi. *Nonsymplectic automorphisms of prime order on O'Grady's sixfolds*. **Revista Matemática Iberoamericana** **38** (2022), no. 4, pp. 1199–1218, doi.org/10.4171/RMI/1341 <https://arxiv.org/pdf/2004.12694.pdf>.
5. V. Bertini, A. Grossi. *Rational curves on primitive symplectic varieties of OG6 singular type*. **Math. Zeit.** **304** (2023), no. 36, <https://doi.org/10.1007/s00209-023-03296-5>
6. L. Giovenzana, A. Grossi, C. Onorati, D.C. Veniani. *Symplectic rigidity of O'Grady's tenfolds*. **Proc. Amer. Math. Soc.** **152** (2024), no. 7, 2813–2820. <https://doi.org/10.1090/proc/16810>

7. C. Felisetti, F. Giovenzana, A. Grossi. *O'Grady tenfolds as moduli spaces of sheaves*. **Forum of Mathematics, Sigma**, **12** e:60 (2024) pp. 1–21 <https://doi.org/10.1017/fms.2024.46>
8. S. Billi, A. Grossi. *Non-symplectic automorphisms of prime order of O'Grady's tenfolds and cubic fourfolds*. **Int. Math. Res. Not.**, 2025, 2025(12), 1–34, ISSN (ppub) 1073-7928, ISSN (epub) 1687-0247 <https://doi.org/10.1093/imrn/rnaf159>
9. V. Bertini, A. Grossi, M. Mauri, E. Mazzon. *Terminalizations of quotients of compact hyperkähler manifolds by induced symplectic automorphisms*. **Épijournal de Géométrie Algébrique (EpiGa)** Vol. 9 (2025), no. 14, pp. 1–53. <https://doi.org/10.46298/epiga.2025.13054> (2025) <https://arxiv.org/pdf/2401.13632.pdf>
10. S. Billi, A. Grossi, L. Marquand. *Cubic fourfolds with a symplectic automorphisms of prime order*. To appear in **Canadian Mathematical Bulletin**. (2025) <https://arxiv.org/pdf/2501.03869.pdf>

Preprints

1. E. Brakkee, C. Camere, A. Grossi, G. Saccà, L. Pertusi and A. Viktorova. *Irreducible symplectic varieties via relative Prym varieties*. Submitted (2024) <https://arxiv.org/pdf/2404.03157.pdf>
2. S. Billi, F. Giovenzana, L. Giovenzana, A. Grossi. *On the non-existence of Enriques manifolds from OG10 type manifolds*. Submitted (2025) <https://arxiv.org/pdf/2501.06893>
3. V. Bertini, F. Denisi, E. Fatighenti, A. Grossi. *Weighted four-dimensional Fano hypersurfaces of K3 type*. Submitted (2025) <https://arxiv.org/pdf/2506.18014>
4. S. Billi, L. Fu, A. Grossi, V. Kharlamov. *In search of maximal branes on hyper-Kähler manifolds*. Submitted (2025) <https://arxiv.org/pdf/2509.17939>

Thesis

Ph.D. thesis – 2020 Automorphisms of O'Grady's sixfolds, <http://amsdottorato.unibo.it/9441/>.

M.D. thesis – 2016 Varietà toriche e politopi convessi. *Available upon request*.

Papers in preparation

1. Fixed divisors on Calabi-Yau manifolds. *With A. Höring*.

2. A birational symplectic involution of a double EPW sextic. *With G. Mongardi.*
3. Maximal Branes on Kummer-type hyper-Kähler manifolds. *With S. Billi and L. Fu.*
4. Uniruled divisors on OG6. *With V. Bertini, G. Nanni.*
5. Automorphisms of relative Prym varieties. *With B. Piroddi, S. Viktorova.*
6. Weak abelian fibrations and K3 varieties. *With C. Felisetti and C. Fontanari.*
7. An irreducible symplectic variety with big second Betti number. *With V. Bertini.*

Visiting Periods

- 11.2025 (1 week) Visiting researcher at Université Côte d'Azur, Nice, France, for a collaboration with Professor A. Höring.
- 03.2025 (1 week) Visiting researcher at Université de Strasbourg IRMA, for a collaboration with Professor Lie Fu.
- 11.2023 (2 weeks) Visiting researcher at the HIM Bonn - Trimester program 'Algebraic geometry: derived categories, Hodge theory, and Chow groups'.
- 04.2022 (1 week) Visiting researcher the Faculty of Mathematics of Università degli Studi di Milano.
- 02.2022 Guest of the Faculty of Mathematics of Université de Lille.
- 11.2019 Guest of the Faculty of Mathematics of TU Chemnitz (Germany), supervised by Prof. Christian Lehn.
- 5.2019 Guest of the Université de Poitiers (France), supervised by Prof. Alessandra Sarti.
- 4.2018 – 5.2018 Guest of the Massachusetts Institute of Technology (M.I.T.) in Boston, MA, supervised by Prof. Giulia Saccà.

Funding and Awards

- 2025 Awarded a competitive funding from INdAM - GNSAGA Project, codice CUP E53C24001950001 with title: Varietà di Fano e hyperkahler: costruzioni, classificazioni e collegamenti
- 2019 Awarded a competitive funding from LYSM, for a visiting period at Université de Poitiers (France).
- 2016 – 2019 Obtained additional funding for research activities from INDAM during the course of Phd study activity in Italy.

2018 Awarded a competitive funding from G.H.A.I.A. Project, a European project for research activity in U.S., for a visiting period at Massachusetts Institute of Technology (M.I.T.) in Boston, MA.

Membership of national and international research groups

- 05.2024 – on going **PRIN22 from title "Symplectic varieties: their interplay with Fano manifolds and derived categories" 2022PEKYBJ – CUP J53D23003840006**, P.I. Giovanni Mongardi. Unità di ricerca dell' Università degli studi di Bologna, Department of Mathematics, P.zza di Porta San Donato 5, 40126 Bologna (Italy).
- 04.2023 – 04.2024 **Postdoctoral fellow, ERC Synergy Grant 854361 "HyperK" European Union's Horizon 2020 research and innovation programme (ERC-2020-SyG854361-HyperK)** , P.I. Emanuele Macrì. Université Paris-Saclay, Laboratoire de mathématiques d'Orsay, Rue Michel Magat, Bât. 307, 91405 Orsay, France.

Teaching activity

- 09.2024 - 12.2024 **Lecturer of the course: Matematica e Geometria P (60 hours)**
Università degli studi di Bologna, Laurea in Tecniche per l'edilizia e per il territorio, Dipartimento di Ingegneria, Italia.
- 05.2024 - 06.2024 **Lecturer of the Ph.D. course: Automorphisms of Hyperkähler manifolds (12 hours)**
Università degli studi di Bologna, Dipartimento di Matematica, Italy.
- 10.2021 - 02.2022 **Teaching assistant for the course Perverse Sheaves (30 hours)**
Technische Universität Chemnitz, Fakultät für Mathematik, Germany.
- 04.2021 - 07.2021 **Teaching assistant for the course Complex Geometry (30 hours)**
Technische Universität Chemnitz, Fakultät für Mathematik, Germany.
- 10.2020 - 02.2021 **Teaching assistant for the course Representation Theory (30 hours)**
Technische Universität Chemnitz, Fakultät für Mathematik, Germany.
- 10.2020 - 02.2021 **Lecturer for the course Commutative Algebra (30 hours)**
Technische Universität Chemnitz, Fakultät für Mathematik, Germany.
- 04.2020 - 07.2020 **Teaching assistant for the course Computer Algebra (30 hours)**
Universität Augsburg, Fakultät für Mathematik, Germany.
- 10.2019 - 02.2020 **Teaching assistant for the course Algebra (20 hours)**
Universität Augsburg, Fakultät für Mathematik, Germany.
- 2018 - 2019 **Teaching assistant for the course Matematica con esercitazioni (30 hours)**
2017 - 2018 Università degli studi di Bologna (sede di Rimini), Dipartimento di Chimica
2016 - 2017 e Tecnologie per l'ambiente e per i materiali, Italy.

2018 - 2019 **Teaching assistant for the course Algebra e Geometria (30 hours)**

2017 - 2018 Università degli studi di Bologna, Department of Physics, Italy.

2016 - 2017

2015 - 2016 **Teaching assistant for the course Geometria 1 (30 hours)**

Università degli studi di Bologna, Department of Mathematics, Italy.

Invited talks

October, 2026 Invited speaker at semester program workshop "Cubic Fourfolds, Gushel-Mukai Fourfolds, and Hyperkahler Manifolds" at ICERM Brown University, Providence, Rhode Island, US.

November, 2025 Invited talk at Goethe Universität Frankfurt.

November, 2025 Invited talk at Université Côte d'Azur, Nice.

May, 2025 Invited speaker at the conference "Women in Mathematics Stockholm 2025", KTH Royal Institute of Technology, Stockholm, Sweden.

May, 2025 Invited speaker at "Seminario di geometria" University of Trento.

April, 2025 Invited speaker at "Seminario di geometria" University of Milano (Bicocca).

September, 2024 Invited speaker at the workshop: "Ricercatori in Algebra e Geometria 2024", University of Milan, Italy.

September, 2024 Invited speaker at the conference: "Japanese-European symposium on symplectic varieties and moduli spaces", University of Kyoto, Japan.

May, 2024 Invited speaker at "mini-workshop on generalized Kummer varieties": University of Kraków , Poland.

May, 2024 Invited talk at Toulouse University.

May, 2024 Invited talk at Università di Genova.

February 29, 2024 Invited talk at Unimore.

March, 2024 Invited talk at Politecnico di Milano.

February 29, 2024 Invited talk at Strasbourg University.

January 10-11, 2024 Invited talk at Dijon University.

January 22-26, 2024 Invited speaker at the conference "Fano and Hyperkähler varieties in Genova".

December 12-14, 2023 Invited talk at Saarbrücken University.

- December 6-7, 2023 Invited speaker at the conference "New perspectives on Enriques surfaces" at University of Turin.
- September 11-15, 2023 Conference "Giornate di Geometria Algebrica ed Argomenti Correlati", Hotel San Michele Cetraro, Italy.
- September 1-8, 2023 Conference "Geometry of Hyperkähler varieties", Institute for Advanced Study in Mathematics (IASM-Hangzhou), China.
- July 13, 2023 "*Irreducible symplectic varieties via Prym fibrations*", Groupe de Travail en Géométrie Algébrique at the University of Poitiers, France.
- May 22-26, 2023 Conference: "Japanese-European symposium on symplectic varieties and moduli spaces", Università degli studi di Milano, Italy.
- May 12, 2023 Algebraic geometry seminar at Università degli Studi di Bologna.
- April 9-14, 2023 Komplexe Analysis — Differential and Algebraic methods in Kähler spaces. Oberwolfach, Germany.
- January 29-February 3, 2023 Workshop: "Hyperkahler quotients, singularities, and quivers", Simons Center, Stony Brook, US.
- June 13-17, 2022 Conference "New Perspectives on Hyperkähler Manifolds - A Celebration of Dimitri Markushevich's (60+2)nd Birthday", Bellavista Relax Hotel, Levico Terme, Italy.
- April 27-28, 2022 Workshop "Grothendieck ring and Derived category: a gathering", Università degli studi di Torino, Italy.
- April 4-8, 2022 Conference "Symplectic Singularities in geometry and representation theory", CIRM, Marseille-Luminy, France.
- March 14-18, 2022 Conference "Japanese - European symposium on symplectic varieties and moduli spaces", Bologna, Italy.
- February 1, 2022 Algebraic geometry seminar, University of Lille, France.
- December 13-17, 2021 "*Ihs varieties as symplectic quotients of ihs manifolds*", Conference "Geometry and Arithmetic of varieties with trivial canonical bundle", Oslo, Norway.
- November 11-12, 2021 "*Ihs varieties as symplectic quotients of ihs manifolds*", Mini-workshop about Singular Irreducible Symplectic Varieties, Università di Milano, Italy.
- October 7, 2021 "*Induced nonsymplectic automorphisms on manifolds of OG_6 type*", Iskovskikh Seminar, HSE-Moscow, Russia.
- July 5-9, 2021 "*Automorphisms of irreducible holomorphic symplectic manifolds of OG_6 type*", Conference GAeL XXVIII, Loughborough, UK.

- June 9, 2021 *"Symplectic actions on irreducible holomorphic symplectic manifolds of OG_6 type"*, "A one-day workshop on K3 surfaces and hyperkähler manifolds", University of Milan, Italy.
- February 5, 2021 *"Symplectic actions on irreducible holomorphic symplectic manifolds of OG_6 type"*, Algebraic geometry seminar, University of Trento, Italy.
- July 2, 2020 *"Automorphisms of irreducible holomorphic symplectic manifolds of OG_6 type"*, ZOOMerFEST: Young Algebraic Geometers seminars, HSE-Moscow, Russia.
- January 22-24, 2020 *"Induced automorphisms on O'Grady's sixfolds"*, "Workshop Exarchos on IHS manifolds", University of Bologna, Ravenna, Italy.
- January 10, 2020 "Automorphisms on O'Grady's sixfolds", Oberseminar "Algebra und Zahlentheorie" at Universität Augsburg, Germany.
- November 25, 2019 *"Induced automorphisms on O'Grady's sixfolds"*, Oberseminar "Algebra und Theoretische Mathematik" at TU-Chemnitz, Germany.
- May 14, 2019 *"Automorphisms on O'Grady's sixfolds"*, "Groupe de Travail en Géométrie Algébrique" at the University of Poitiers, France.
- June 2018 *"First results about automorphisms of O'Grady six-dimensional manifold"*, JAWS at University of Warwick, UK.
- November 2017 *"Morse theory"*, "B.a.d. seminar", University of Bologna, Italy.

Workshop and seminars organized

- January 2025 Member of the organizing committee of the 3 days workshop in Ravenna "Varietà italiane simplettiche olomorfe", UniBo, Italia.
- February 2023 Member of the organizing committee of the workshop "Young perspectives on IHS manifolds" University of Stuttgart, Germany.
- January 29-31 2019 Member of the organizing committee of "Workshop on Fano and IHS manifolds", held at Università degli studi di Bologna, Italy.
- November 23-24 2017 Member of the organizing committee of "Workshop on IHS manifolds and stability conditions" held at Università degli Studi di Bologna, Italy.

Working seminars

- 05.2022-07.2022 Joint working seminar at Chemnitz University about "Logarithmic deformation theory of normal crossing varieties and smoothability".
- 10.2021-01.2022 Member of the organizing committee of the joint working seminar among University of Bologna, Chemnitz and Nancy about "Bridgeland stability conditions".

03.2021-05.2021 Joint working seminar at Chemnitz University about "Berkovich skeleta and birational geometry".

Referee

Referee for Algebra & Number Theory, Mathematische Zeitschrift, Forum of Mathematics - Sigma, Revista Matemática Iberoamericana, Math. Nachrichten.

Reviewer for Zentralblatt-math, Mathematical Reviews.

Conferences, workshop and school attended (selection)

September 29 - POK0: Positivity on K-trivial varieties, workshop, Cetraro, Cetraro, Italia.
October 3, 2025

September 12-15, 2023 Giornate di Geometria Algebrica ed Argomenti Correlati 2023, Cetraro, Italia.

September 4-8, 2023 Workshop: Geometry of Hyperkähler varieties, Hangzhou, China.

June 14-15, 2023 Meeting Erc Hyperkähler in Paris, Paris.

May 31, June 02, 2023 Moduli in Nantes, Nantes, France.

May 22-26, 2023 Conference: "Japanese-European symposium on symplectic varieties and moduli spaces", Università degli studi di Milano, Italy.

April 2023 Komplexe Analysis — Differential and Algebraic methods in Kähler spaces. Oberwolfach, Germany.

February 27–March 3, 2023 Banff Workshop "Around symmetries of K3 surfaces", Canada. Online.

January, 2023 Workshop: "Hyperkahler quotients, singularities, and quivers", Simons Center, Stony Brook, US.

September 19–23, 2022 Summer school "Recent perspectives on Hodge Theory", Centro De Giorgi, Pisa.

September 12–16, 2022 Conference, "Hyperkähler varieties and related topics", Sapienza Università Roma.

August 28– September 3, 2022 Conference: "Hyperkähler manifolds and related geometries", Cetraro, Italy.

June 30, July 1st, 2022 Workshop "Derived categories and birational geometry", University of Milan, Italy.

- June 12-17, 2022 "New Perspectives on Hyperkähler Manifolds. A Celebration of Dimitri Markushevich's 60th Birthday", Bellavista Relax Hotel, Levico Terme, Italy.
- June 5-10, 2022 School "Moduli spaces and stability conditions", Bellavista Relax Hotel, Levico Terme, Italy.
- April 27-28, 2022 "Grothendieck ring and derived category: a gathering", Università di Torino, Italy.
- April 4-8, 2022 "Symplectic Singularities in geometry and representation theory", CIRM, Marseille-Luminy, France.
- March 14-18, 2022 "Japanese - European symposium on symplectic varieties and moduli spaces", Università degli Studi di Bologna, Italy.
- December 14-16 2021 *"Arithmetic and geometry of varieties with trivial canonical bundle"*, Oslo, Norway.
- November 11-12 2021 *Mini-workshop "Singular irreducible symplectic varieties"*, University of Milan, Italy.
- September 13-14 2021 *Workshop "Moduli spaces and hyperkähler varieties in Rome"*, Università La Sapienza, Rome, Italy.
- September 6-10 2021 *Workshop "Hyperkähler geometry"*, University of Bonn, Germany.
- June 9 2021 *A one day workshop: "K3 surfaces and hyperkähler manifolds"*, University of Milan, Italy.
- March 19 2021 *Online Workshop Birational Geometry and Thereabouts*, University of Palermo, Italy.
- July 27-31 2020 *Online Workshop WiAG (Women in Algebraic Geometry)*, ICERM (Brown University), Providence, Rhode Island.
- January 22-24 2020 *"Workshop Exarchos"*, Università degli Studi di Bologna, Italy.
- December 19-20 2019 *"Geometry in Pairs"*, Università degli studi Roma Tre, Roma, Italy.
- June 24-28 2019 *"Workshop on derived categories, moduli spaces and deformation theory"*, Cetraro, Italy.
- June 3-7 2019 *"Japanese-European symposium on symplectic varieties and moduli spaces"*, ETH Institute, Zürich, Switzerland.
- February 18-22 2019 *"Entire curves, rational curves and foliations"*, CIRM, Luminy, Marseille, France.

- December 20-21 2018 *"Aeneas Conference: Migrating Algebraic Geometry"* Università degli studi Roma Tre.
- November 4-7 2018 *"Chow Lectures: by Peter Scholze"*, at Max-Planck-Institut für Mathematik", Leipzig, Germany.
- August 27-31 2018 *"Japanese - European symposium on symplectic varieties and moduli spaces"*, Kagurazaka (Tokyo), Japan.
- June 18-22 2018 *"GAeL " (Geometrie Algebrique en Liberte)*, University of Strasbourg, France.
- March 19-23 2018 *"School on birational geometry of hypersurfaces"*, Palazzo Feltrinelli, Gargnano del Garda, Italy.
- February 19-23 2018 *"Winter school in Geometry, Algebra and Combinatorics of Moduli Spaces"*, Dobbiaco, Italy.
- September 18-22 2017 *"Japanese-European symposium on symplectic varieties and moduli spaces"*, Levico, Italy.
- July 5-8 2017 *"School on deformation theory"*, Università di Torino, Italy.
- June 26-30 2017 *"GAeL " (Geometrie Algebrique en Liberte)*, University of Bath, UK.
- June 5-9 2017 *"Linear systems on irregular varieties"*, Como, Italy.
- February 19-25 2017 *"Winter school in Geometry, Algebra and Combinatorics of Moduli spaces"*, Dobbiaco, Italy.
- July 22-25 2015 *"Summer School on computational topology"*, ACAT (Applied and Computational Algebraic Topology), Lubiana, Slovenia.

Hiring committee

- February 2021 Member of the Hiring Committee of PhD students in Algebraic Geometry at TU-Chemnitz.

Media Activities

- 03.2025 Letter to the Ministry of University and Research "Quale futuro per i giovani ricercatori?", [link](#).

Other personal skills

- July 2021 Habilitation to the teaching class of competition A/026 (Mathematics at High School) in July 2021.

Programming language

Python, Sage.

Language

Mother tongue Italian.
Other language(s) English, fluent, C1.
German, early intermediate, A2.

References

Christian Lehn Ruhr-Universität Bochum, christian.lehn@rub.de
Emanuele Macrì Université Paris-Saclay, emanuele.macri@universite-paris-saclay.fr
Giovanni Mongardi Università degli Studi di Bologna, giovanni.mongardi2@unibo.it
Alessandra Sarti Université de Poitiers, Alessandra.Sarti@math.univ-poitiers.fr

Bologna, November 19, 2025.