

Stefano Filipazzi

Curriculum Vitae

École polytechnique fédérale de Lausanne
EPFL SB MATH CAG
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Research interests

Algebraic geometry, with main focus on: Minimal Model Program and its applications, birational geometry of Calabi–Yau and Fano varieties, boundedness questions in algebraic geometry, moduli spaces, topology of singularities, positive characteristic methods.

Employment

- 07/2021– Present **Collaborateur Scientifique (postdoc)**, EPFL, Lausanne, CH
Mentor: Zsolt PATAKALVI
- 07/2019– 06/2021 **Hedrick Assistant Adjunct Professor**, UCLA, Los Angeles, USA
Mentor: Burt TOTARO

Education

- 2014–2019 **PhD in Mathematics**, University of Utah, Salt Lake City, USA
Thesis: *Generalized pairs in birational geometry*. Advisor: Prof. Christopher D. HACON.
- 2009–2014 **Diploma**, IUSS - Institute for Advanced Studies, Pavia, ITA, Excellent
Thesis: *An introduction to derived categories: the Bondal–Orlov reconstruction theorem*.
Advisor: Prof. Alberto CANONACO
- 2012–2014 **Master’s Degree in Mathematics**, Università degli studi di Pavia, Pavia, ITA,
110/110 *cum laude*
Thesis: *The tautological ring of a jacobian*. Advisors: Prof. Gavril FARKAS, Prof. Gian
Pietro PIROLA
- 10/2013– 05/2014 **Erasmus exchange program**, Humboldt Universität zu Berlin, Berlin, GER
- 2009–2013 **Bachelor’s Degree in Mathematics**, Università degli studi di Pavia, Pavia, ITA,
110/110 *cum laude*
Thesis: *Dal problema di Hermite al concetto di dimensione essenziale*. Advisor: Prof. Gian
Pietro PIROLA

Awards and Fellowships

- 2020–2022 **AMS Simons travel grant**, American Mathematical Society, \$5000
Two-years travel grant for early career mathematician (2021–2022 withdrawn due to move to Europe).

- 2018–2019 **University of Utah Graduate research Fellowship**, University of Utah, \$18500
Fellowship awarded by the University of Utah; 12 to 15 awards given annually across all graduate programs.
- 2009–2014 **IUSS - Institute for Advanced Studies**, Pavia
Merit alumn at IUSS. Fellowship accorded by the Institute of Advanced Studies through national competition.
- 2009–2014 **Almo Collegio Borromeo**, Pavia
Fellow of Almo Collegio Borromeo, Pavia. The fellowship is assigned through a national competition.
- 2009–2012 **INdAM scholarship**, Istituto Nazionale di Alta Matematica
Scholarship to pursue a bachelor's degree in mathematics. Withdrawn due to incompatibility with other scholarships awarded.
- 2013–2014 **Università degli studi di Pavia**, Pavia
Erasmus scholarship to write the master thesis in mathematics at Humboldt Universität zu Berlin.

Visiting positions

- 12/2018 **Visitor**, University of Cambridge, Cambridge, UK, Host: R. Svaldi.
07/2017 **Visitor**, SISSA, Trieste, ITA, Host: R. Svaldi.

Publications

Preprints

- *Boundedness of elliptic Calabi–Yau threefolds*, with C. D. Hacon and R. Svaldi, arXiv: 2112.01352 [math.AG], submitted.
- *Moduli of \mathbb{Q} -Gorenstein pairs and applications*, with G. Inchiostro, arXiv: 2108.07988 [math.AG], submitted.
- *Connectedness principle in characteristic $p > 5$* , with J. Waldron, arXiv: 2010.08414 [math.AG], submitted.
- *On the connectedness principle and dual complexes for generalized pairs*, with R. Svaldi, arXiv: 2010.08018 [math.AG], submitted.
- *On the boundedness of n -folds with $\kappa(X) = n - 1$* , preprint, arXiv: 2005.05508 [math.AG], submitted.
- *Log canonical 3-fold complements*, with J. Moraga and Y. Xu, preprint, arXiv: 1909.10098 [math.AG], submitted.

Articles

- *The Jordan property for local fundamental groups*, with L. Braun, J. Moraga and R. Svaldi, preprint, arXiv: 2006.01253 [math.AG], to appear in *Geometry & Topology*.
- *Invariance of plurigenera and boundedness for generalized pairs*, with R. Svaldi, *Matemática Contemporânea*, Vol. 47 (2020), 114–150, DOI 10.21711/231766362020/rmc476.
- *Strong (δ, n) -complements for semistable morphisms*, with J. Moraga, *Doc. Math.* 25 (2020), 1953–1996, DOI 10.25537/dm.2020v25.1953-1996.

- *On a generalized canonical bundle formula and generalized adjunction*, Ann. Sc. Norm. Super. Pisa Cl. Sci. (5) 21 (2020), 1187-1221, DOI 10.2422/2036-2145.201810_001.
- *Some remarks on the volume of log varieties*, Proc. Edinb. Math. Soc. (2) 63 (2020), no. 2, 314-322, DOI 10.1017/S0013091519000397.
- *Boundedness of log canonical surface generalized polarized pairs*, Taiwanese J. Math. 22 (2018), no. 4, 813-850, DOI 10.11650/tjm/171204.
- *An example of Berglund–Hübsch mirror symmetry for a Calabi–Yau complete intersection*, with F. Rota, Matematiche (Catania) 73 (2018), no. 1, 191-209, DOI 10.4418/2018.73.1.14.
- *Generic vanishing fails for surfaces in positive characteristic*, Boll. Unione Mat. Ital. 11 (2018), no. 2, 179-189, DOI 10.1007/s40574-017-0120-6.

Invited Talks (* denotes online talks)

Invited conference talks

- 08/2021 Generalised Pairs and Applications at Morningside Center of Mathematics, Chinese Academy of Sciences, *On the connectedness principle and dual complexes for generalized pairs*.*
- 02/2021 Fano varieties and birational geometry at the University of Nottingham, *On the connectedness principle and dual complexes for generalized pairs*.*
- 11/2019 AMS Sectional Meeting at UC Riverside, *On the connectedness principle and dual complexes for generalized pairs*.
- 10/2019 SoCalAGS, *On the connectedness principle and dual complexes for generalized pairs*.
- 12/2018 London–Tokyo Workshop in Birational Geometry II at Imperial College, *On a generalized canonical bundle formula and generalized adjunction*.
- 05/2018 Midwest Algebraic Geometry Graduate Conference at UIC, *Some facts about generalized pairs*.
- 04/2018 AMS Sectional Meeting at Portland State University, *Generic vanishing fails for surfaces in positive characteristic*.

Invited seminar talks

- 11/2021 Universität des Saarlandes, *On the boundedness of elliptic Calabi–Yau threefolds*.*
- 11/2021 Universität Basel, *On the boundedness of elliptic Calabi–Yau threefolds*.
- 09/2021 ZAG (Zoom Algebraic Geometry Seminar), *On the boundedness of elliptically fibered varieties*.*
- 05/2021 UCLA, *On the boundedness of elliptically fibered varieties*.*
- 03/2021 Università degli Studi di Pavia, *On the boundedness of elliptically fibered varieties*.*
- 02/2021 Washington University in St. Louis, *On the boundedness of elliptically fibered varieties*.*
- 02/2021 EPFL, *On the boundedness of elliptically fibered varieties*.*
- 09/2020 Rutgers University, *On the boundedness of n -folds of Kodaira dimension $n - 1$* .*

- 07/2020 Leibniz Universität Hannover, *On the boundedness of n -folds of Kodaira dimension $n - 1$.**
- 06/2020 Online AG Seminar (run by Y. Liu at Yale and C. Xu at Princeton via Zoom), *On the boundedness of n -folds of Kodaira dimension $n - 1$.**
- 11/2018 Johns Hopkins University, *On a generalized canonical bundle formula and generalized adjunction.*
- 10/2018 Princeton University, *On a generalized canonical bundle formula and generalized adjunction.*
- 10/2018 University of Utah, *On a generalized canonical bundle formula and generalized adjunction.*
- 10/2018 UC San Diego, *On a generalized canonical bundle formula and generalized adjunction.*
- 05/2017 SISSA Trieste, *Some facts about generalized polarized pairs.*
- 05/2017 Università degli Studi di Pavia, *Generic vanishing fails for surfaces in positive characteristic.*

Posters

- 10/2018 WAGS at University of Oregon, *On a generalized canonical bundle formula.*
- 06/2018 GAeL XXVI, Strasbourg, France, *Boundedness of log canonical surface generalized pairs.*
- 10/2017 WAGS at UCLA, *Generic vanishing fails for surfaces in positive characteristic.*
- 06/2017 Linear Systems on Irregular Varieties in Como, Italy, *Generic vanishing fails for surfaces in positive characteristic.*

Teaching

EPFL

Fall 2021 **Head Assistant**, *Analyse I (Anglais)/Analysis I (English)*

UCLA

- Spring 2021 **Instructor**, *Analysis*, MATH 131A
- Winter 2021 **Instructor**, *Analysis*, MATH 131A
- Fall 2020 **Instructor**, *Calculus of Several Variables*, MATH 32A, 2 sections
- Summer 2020 **Instructor**, *Linear Algebra and Applications*, MATH 33A
- Spring 2020 **Instructor**, *Analysis*, MATH 131A
- Winter 2020 **Instructor**, *Analysis*, MATH 131A, 2 sections
- Fall 2019 **Instructor**, *Linear Algebra and Applications*, MATH 33A

University of Utah

- Fall 2017 **Instructor**, *Calculus 2*, MATH 1220
- Fall 2016 **Instructor**, *Calculus 1*, MATH 1210
- Spring 2016 **Instructor**, *College Algebra for Business and Social Sciences*, MATH 1090
- Fall 2015 **Instructor**, *College Algebra for Business and Social Sciences*, MATH 1090
- Spring 2015 **Teaching Assistant**, *Engineering Calculus 1*, MATH 1310, 2 sections

- Fall 2014 **Teaching Assistant**, *Engineering Calculus 1*, MATH 1310, 2 sections
[Università degli studi di Pavia](#)
- Spring 2013 **Teaching Assistant**, *Geometry 1*, mathematics bachelor's program
- Fall 2012 **Teaching Assistant**, *Linear Algebra*, mathematics and physics bachelor's program
- Spring 2012 **Teaching Assistant**, *Geometry 1*, mathematics bachelor's program
- Fall 2011 **Teaching Assistant**, *Linear Algebra*, mathematics and physics bachelor's program

Student supervision

Thesis supervision

- 2021–2022 **Gianni Petrella**, MA thesis, *Topics on elliptic surfaces*, EPFL.

Study project supervision

- Fall 2021 **Gianni Petrella**, MA project (one semester project), *Kodaira's classification of algebraic surfaces*, EPFL.

Service and Outreach

Reviewed papers or provided short opinions for: International Mathematics Research Notices, Annales de l'institut Fourier, Journal of the London Mathematical Society, Duke Mathematical Journal, Journal of Differential Geometry, Electronic Research Archive, International Journal of Mathematics, Crelle's Journal, American Journal of Mathematics.

- Spring 2021 Course coordinator for Analysis 1 (MATH 131A) (UCLA).
- 2020–2021 Member of the Teaching Committee of the math department (UCLA).
- Fall 2020 Course coordinator for Calculus of Several Variables (MATH 32A) (UCLA).
- 2019–2020 Co-organizer of the Algebra Seminar at UCLA.
- 2018–2019 Co-founder and co-organizer of the mentorship program for incoming math graduate students (U of Utah).
- 2017–2018 Co-organizer of the recruitment weekend (U of Utah).
- 2016–2018 Organizer of the Algebraic Geometry Student Seminar (U of Utah).
- 2015–2018 Contact for prospective and incoming international students (U of Utah).
- 2014–2016 T. Benny Rushing Math Tutoring Center, University of Utah, tutor.

Languages

- Italian Native
- English Fluent
- German Intermediate
- French Beginner