

Enrico Fatighenti

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Academic Positions

- 05/2021 - **RTD-A**, *Sapienza Università di Roma*, 5/5/21-.
art. 24 comma 3, lett. a) della Legge n. 240/2010
- 2020 - 2021 **Postdoctoral Fellow**, *IMT Toulouse*, Sponsored by CIMI Toulouse, 1/10/20-2/5/21.
analoghi assegni in atenei stranieri
- 2018 - 2020 **Postdoctoral Fellow**, *Loughborough University*, EPSRC Doctoral Prize Fellow, 1/10/18-30/9/20.
analoghi assegni in atenei stranieri
- 2017 - 2018 **Postdoctoral Fellow**, *Università Roma Tre*, Sponsored by MIUR-project FIRB 2012 "Moduli spaces and their applications", 1/9/17-31/8/18.
assegno di ricerca ai sensi dell'art. 22 della Legge 240/2010

(Long) Research stays

- 02/2020 **Research In Paris**, *Institut Henri Poincaré*, Paris, 3 weeks.
- 08/2016 **Visiting Researcher**, *University of Nairobi*, Nairobi, 2 weeks.
- 09/2015 **Visiting Researcher**, *KIAS (Korea Institute for Advanced Studies)*, Seoul, 1 Month.

Education

- 2017 **PhD in Mathematics**, *University of Warwick*, 4-12-17, Supervisor: Professor Miles Reid, FRS.
Thesis title: "Hodge Theory in Grassmannians"
- 2013 **MSc in Pure Mathematics**, *Sapienza Università di Roma*, 23-7-2013.
Final mark: 110/110 cum laude

Publications

Published Articles

Fano 3-folds from homogeneous vector bundles over Grassmannians, with Lorenzo De Biase and Fabio Tanturri, *Revista Matemática Complutense*, to appear.

A note on a Griffiths-type ring for complete intersections in Grassmannians, with Giovanni Mongardi, *Mathematische Zeitschrift*, in press.
doi.org/10.1007/s00209-021-02733-7

Nested varieties of K3 type, with Marcello Bernardara and Laurent Manivel, *Journal de l'École polytechnique-Mathématiques (JEP)*, Tome 8 (2021), pp. 733-778.
doi.org/10.5802/jep.156

Fano varieties of K3 type and IHS manifolds, with Giovanni Mongardi, *Int.Math.Res.Not. (IMRN)*, Volume 2021, Issue 4, February 2021, Pages 3097-3142.
doi.org/10.1093/imrn/rnaa368

Hodge numbers and deformations of Fano threefolds, with Gavin Brown, *Doc. Math.* 25, 267-307 (2020).
DOI: [10.25537/dm.2020v25.267-307](https://doi.org/10.25537/dm.2020v25.267-307)

Surfaces of general type with $p_g = 1$, $q = 0$, $K^2 = 6$ and Grassmannians, *Math. Nachr.* 293 (2020), no. 1 (January), Pages 88-100.
doi.org/10.1002/mana.201800153

Weighted Fano varieties and infinitesimal Torelli problem, with Francesco Zucconi and Luca Rizzi, *Journal of Geometry and Physics*, Volume 139, May 2019, Pages 1-16.
doi.org/10.1016/j.geomphys.2018.09.020

Hodge Theory and deformations of affine cones of subcanonical projective varieties, with Domenico Fiorenza and Carmelo di Natale, *J. Lond. Math. Soc.* (2) 96 (2017), no. 3, 524-544.
doi.org/10.1112/jlms.12073

Hodge theory in Grassmannians, PhD Thesis, Warwick, 2017.

Preprints

Polyvector fields for Fano 3-folds, *arXiv:2104.07626*, with Pieter Belmans and Fabio Tanturri, submitted.

A journey from the octonionic \mathbb{P}^2 to a fake \mathbb{P}^2 , *arXiv:2008.09731*, with Lev Borisov and Anders Buch, submitted.

New explicit constructions of surfaces of general type, *arXiv:2004.02637*, with Lev Borisov, submitted.

Research Interests

Fano manifolds of K3 and Calabi–Yau type and link with hyperkähler geometry. Explicit constructions of varieties in homogenous varieties and their Hodge theory.

Explicit construction of surfaces of general type with small p_g , K^2 and Calabi-Yau quotients in low dimension.

Fano and Calabi-Yau varieties in Weighted Projective Spaces. Explicit birational classification, especially of \mathbb{Q} -Fano threefolds.

Teaching experience

Undergraduate Teaching

- 2018/19 Lecturer for 18MAB241 - Complex Variables, Loughborough University, School of Mathematics. 18 hours (6 weeks).
- 2015/16 Teaching Assistant for the module "Algebraic Geometry" at University of Warwick - Mathematics Institute. 12 hours (12 weeks)
- 2014/15 Teaching Assistant for the module "Riemann Surfaces" at University of Warwick - Mathematics Institute. 12 hours (12 weeks)
- 2013/14 Teaching Assistant for the module "Manifolds" at University of Warwick - Mathematics Institute. 12 hours (12 weeks)

Graduate Teaching

- 2017/18 PhD Course "Topics on Fano varieties", Università Roma Tre - Dipartimento di Matematica. 14 hours (7 weeks).
- 2016 Master course on "Topology of hypersurfaces", University of Nairobi. 8 hours (2 weeks).

Students supervised

- 2018-19 Xiaoshan Huang: BSc Final project, *Hilbert's Nullstellensatz and Bézout Theorem*. Served as committe member for Thesis defense.

Fundings obtained

- 2020 Research In Paris grant, supported by Institut Henri Poincaré, €3000. Grant for the research project: *The hunt for fano varieties of K3 type*, in collaboration with Fabio Tanturri.
- 2018 Travel grant from INDAM (Italian national institute of higher mathematics) to visit Japan, €750.
- 2018 LMS Scheme 8 Grant (£2430) to organise the conference "2CinC: COW and Calf in Cardiff".

- 2017 Secured funding for GAeL XXV in Bath (£22149) from several funding bodies, including Compositio Mathematica, GMJT, Heilbronn, IMA, IMI, LMS, University of Bath.

Honours, Awards and Studentships

- 2017 EPSRC Doctoral Prize (18-Months postdoc at Loughborough University, starting October 2018)
- 2013 3.5-years Warwick University full studentship +EPSRC studentship covering fees
- 2013 Percorso D'Eccellenza per Laurea Magistrale (award of excellence for outstanding students during the MSc)
- 2008 MIUR (Ministry of Public Instruction and Research) Award of Excellence for Scientific High School degree

Talks and Courses given

Conferences

- 2021 ANR FanoHK-kickoff conference, Versailles (2021), online
- 2021 BMC-BAMC Glasgow 2021, online
- 2020 Simons conference on K -stability, online
- 2020 Japanese-European Symposium on Symplectic Varieties and Moduli spaces V, online
- 2020 Workshop EXARCHOS, Ravenna
- 2019 Winter school on Bridgeland stability, Warwick University
- 2019 Integrable systems and automorphic forms, Lille University
- 2019 Workshop on Fano varieties and IHS manifolds, Rimini
- 2018 Fano varieties and their automorphisms, Loughborough
- 2018 GAeL XXVI, Strasbourg
- 2018 Giornate di Geometria Algebrica e argomenti correlati XIV, Genova
- 2018 Motives of Calabi-Yau manifolds, IMPAN Kraków
- 2017 Higher Dimensional Birational Geometry-in honour of Professor Mori, University of Warwick
- 2015 Algebraic Geometry and Representation Theory in Rome, La Sapienza

Seminars

- 2021 ZAG seminar, Online
- 2021 Algebraic Geometry Seminar, Università di Trieste
- 2021 Oberseminar "Algebra und Theoretische Mathematik", TU Chemnitz
- 2021 Algebraic Geometry Seminar, Università di Trento
- 2020 COW seminar, Online COW
- 2020 Nottingham Algebraic Geometry Seminar, online
- 2020 Algebraic Geometry Seminar, Toulouse University
- 2020 Seminaire de geometrie algebrigue, IMJ-PRG Paris
- 2019 Algebraic Geometry Seminar, Torino University
- 2019 Algebraic Geometry Seminar, Liverpool University
- 2019 Geometry and Mathematical Physics Seminar, University of Birmingham
- 2019 Algebraic Geometry Seminar, Oslo University
- 2019 Algebraic Geometry Seminar, Alma Mater Studiorum - Università di Bologna
- 2019 MAGIC Seminar, Imperial College London
- 2019 GAPT Seminar, Cardiff University
- 2019 Algebraic Geometry Seminar, Lille University
- 2018 Algebraic Geometry Seminar, Toulouse University
- 2018 Algebraic Geometry Seminar, HSE Moscow

- 2017 *Algebraic Geometry Seminar*, Università Roma Tre
- 2017 *Algebraic Geometry Seminar*, Loughborough University
- 2017 *Algebraic Geometry Seminar*, Alma Mater Studiorum - Università di Bologna
- 2017 *Algebraic Geometry Seminar*, Toulouse University
- 2016 *COW seminar*, University of Bath
- 2016 *Algebraic Geometry OberSeminar*, IAG Leibniz Universität Hannover
- 2016 *Algebraic Geometry Seminar*, Cardiff University
- 2015 *CALF Seminar*, University of Oxford
- 2015 *Algebraic Geometry Seminar*, KIAS

Academic activities

Referee for *Compositio Mathematica*, *Proceedings of the London Mathematical Society* and *Revista Matemática Complutense*

Reviewer for *zbMATH* and *Math Reviews*

Seminar and Conferences Organized

- 2/2017 **Organizer of the conference "2CinC: Cow and Calf in Cardiff"**, *Secured funding from London Mathematical Society, Cardiff University.*
- 2015-2017 **Main Organizer of the GAeL Conference (editions XXIV-XXV)**, *Secured funding from London Mathematical Society, Compositio Mathematica, Glasgow Mathematical Journal Trust, Heilbronn Foundation, Bath University, EPSRC via 3CinG Grant.*
- 2014-2017 **Main Organizer of the CALF Seminar**, *together with Claudio Onorati (Bath).*

Membership in Research groups, Grants and Projects

- 2021 Member of the Sapienza Unit for PRIN 2017YRA3LK "Moduli spaces and Lie Theory", PI: Kieran O'Grady
- 2020 Collaborator for EPSRC EP/T001968/1: "The Abram Gannibal Project: Collaborative research in applied algebra and geometry in Africa"
- 2018/2020 Member of the Centre for Geometry and Applications, Loughborough University
- 2017/18 Member of the Roma Tre unit for FIRB 2012 "Moduli Spaces and Their Applications"
- 2017- External collaborator for EPSRC EP/N03189X/1 "3CinG"

Languages

Italian Native

English Fluent

IELTS Certification (2013)

Computer skills

Advanced Computer algebra softwares as Macaulay2, Magma and Singular

UNIVERSITÀ DEGLI STUDI DI MILANO

selezione pubblica per n. 1 posto/i di Ricercatore a tempo determinato ai sensi dell'art. 24, comma 3, lettera b) della Legge 240/2010 per il settore concorsuale 01/A2 - Geometria e Algebra, settore scientifico-disciplinare MAT/03 - Geometria presso il Dipartimento di MATEMATICA "FEDERIGO ENRIQUES",
(avviso bando pubblicato sulla G.U. n. G.U. 46 del 11/06/2021) Codice concorso 4773

Roma, 9/7/2021