

Curriculum vitae

name	Davide Cesare Veniani
birth	February 21, 1988 – Como, Italy
nationality	Italian
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Research interests

Research field: integral quadratic forms in algebraic geometry.

- Algebraic surfaces, especially $K3$ surfaces and Enriques surfaces: enumerative problems, positive characteristic.
- Irreducible holomorphic symplectic manifolds (hyperkähler manifolds): automorphisms and birational transformations.

Positions

Oct. 2019 – Sep. 2022	<i>Research assistant (postdoc).</i> Institut für Geometrie und Topologie, University of Stuttgart (Germany).
Aug. 2016 – Sep. 2019	<i>Research assistant (postdoc)</i> , member of SFB/TRR 45 “Periods, moduli spaces and arithmetic of algebraic varieties”. Institut für Mathematik, Johannes Gutenberg University Mainz (Germany).
March 2013 – July 2016	<i>Ph.D. student</i> , member of GRK 1463 “Analysis, Geometry and String Theory”. Institut für Algebraische Geometrie, Leibniz University Hannover (Germany).

Education

July 12, 2016	Ph.D. in Pure Mathematics, Leibniz University Hannover (Germany), supervisor: MATTHIAS SCHÜTT, title of dissertation: <i>Lines on $K3$ quartic surfaces</i> .
Nov. 20, 2012	M.Sc. in Mathematics, University of Pavia (Italy), supervisors: ANDREAS LEOPOLD KNUTSEN and GIAN PIETRO PIROLA, grade: 110/110 <i>magna cum laude</i> .
2012	Erasmus student (4 months) at University of Bergen (Norway).

- July 13, 2010 B.Sc. in Mathematics, University of Pavia (Italy).
- 2007 Admission to [IUSS – Scuola Superiore Universitaria Pavia](#) (Italy).
- 2007 Admission to [Collegio Ghislieri](#), Pavia (Italy).
- 2007 Diploma in Scientific Studies, Liceo scientifico “Galileo Galilei”, Erba (Italy).

List of publications

PREPRINTS

- 2021 *Counting elliptic fibrations on K_3 surfaces*, with DINO FESTI. [arXiv:2102.09411](#).
- 2020 *Symplectic birational transformations of finite order on O’Grady’s sixfolds*, with ANALISA GROSSI and CLAUDIO ONORATI. [arXiv:2009.02120](#).
- 2020 *Idoneal genera and K_3 surfaces covering an Enriques surface*, with SIMON BRANDHORST and SERKAN SONEL. [arXiv:2003.08914](#).

PEER-REVIEWED PAPERS

- 2021 *Enriques involutions on pencils of K_3 surfaces*, with DINO FESTI, to appear on Mathematische Nachrichten. [arXiv:2103.07324](#).
- 2021 *Lines on K_3 quartic surfaces in characteristic 3*, manuscripta mathematica (2021). [doi:10.1007/s00229-021-01284-9](#).
- 2020 *Enriques involutions on singular K_3 surfaces of small discriminants*, with ICHIRO SHIMADA, Annali della Scuola Normale Superiore di Pisa, Classe di Scienze (5) **XXI** (2020), 1667–1701. [doi:10.2422/2036-2145.201902_004](#).
- 2020 *Symmetries and equations of smooth quartic surfaces with many lines*, Revista Matemática Iberoamericana **36**(1) (2020), 233–256. [doi:10.4171/rmi/1127](#).
- 2020 *Semi-Calabi–Yau orbifolds and mirror pairs*, with ALESSANDRO CHIODO and ELANA KALASHNIKOV, Advances in Mathematics, **363** (2020), 106998, 46 pp. [doi:10.1016/j.aim.2020.106998](#).
- 2017 *Lines on K_3 quartic surfaces in characteristic 2*, Quarterly Journal of Mathematics **68**(2) (2017), 551–581. [doi:10.1093/qmath/haw055](#).
- 2017 *On prime degree isogenies between K_3 surfaces*, with SAMUEL BOISSIÈRE and ALESSANDRA SARTI, Rendiconti del Circolo Matematico di Palermo Series 2 **66**(1) (2017), 3–18. [doi:10.1007/s12215-016-0270-x](#).
- 2017 *The maximum number of lines lying on a K_3 quartic surface*, Mathematische Zeitschrift **285**(3) (2017), 1141–1166. [doi:10.1007/s00209-016-1742-6](#).

Organized events

- Sep. 2018 [International summer school on arithmetic geometry](#),
University of Salerno (Italy), with DINO FESTI and ARIYAN JAVANPEYKAR.
- Spring 2018 [Unter- und Oberseminar](#),
JGU Mainz (Germany).
- Oct. 2017 [Autumn school: topics in arithmetic and algebraic geometry](#),
JGU Mainz (Germany), with DINO FESTI and ARIYAN JAVANPEYKAR.

Research talks

- June 9, 2021 *Some enumerative problems on K_3 surfaces: an overview*,
[K₃ surfaces and hyperkähler manifolds – a one-day workshop on Zoom](#), University of Milan (Italy).
- May 26, 2021 *Some enumerative problems on K_3 surfaces: an overview*,
[Seminari di algebra e geometria algebrica](#), University of Turin (Italy).
- Mar. 12, 2020 *Free involutions on ih s manifolds*,
METU-Bilkent Algebraic Geometry Seminar, Bilkent University, Ankara (Turkey).
- Dec. 9, 2019 *Free involutions on ih s manifolds*,
[December Workshop](#), University of Padua (Italy).
- Dec. 3, 2019 *Free involutions on ih s manifolds*,
[Oberseminar zur Algebra und Zahlentheorie](#), University of Augsburg (Germany).
- May 9, 2019 *The two most algebraic Enriques surfaces*,
[Oberseminar Algebra und Theoretische Mathematik](#), University of Chemnitz (Germany).
- April 17, 2019 *K_3 - und Enriques-Flächen: Geschichte eines Zusammenhangs*,
University of Saarbrücken (Germany).
- April 11, 2019 *Les deux surfaces d'Enriques les plus algébriques et les surfaces K_3 sans involutions d'Enriques*,
Seminaire du groupe de travail, University of Poitiers (France).
- April 4, 2019 *Surfaces K_3 et surfaces d'Enriques : histoire d'une relation*,
University of Poitiers (France).
- Mar. 21, 2019 *K_3 - und Enriques-Flächen: Geschichte eines Zusammenhangs*,
University of Stuttgart (Germany).
- Feb. 27, 2019 *The number of Enriques surfaces covered by a K_3 surface*,
[Algebra Seminar](#), University of Groningen (Netherlands).
- Sep. 18, 2018 *The number of Enriques quotients of a singular K_3 surface*,
[Joint meeting UMI-SIMAI-PTM](#), Wrocław (Poland).
- May 17, 2018 *Recent advances about lines on quartic surfaces*,

[EDinburgh GEometry seminar](#), University of Edinburgh (UK).

- Jan. 22, 2018 *Recent advances about lines on quartic surfaces*,
Heinrich Heine University Düsseldorf (Germany).
- Dec. 19, 2017 *Recent advances about lines on quartic surfaces*,
Humboldt University of Berlin (Germany).
- Aug. 18, 2016 *Lines on K_3 quartic surfaces*,
[Advanced School and Workshop on Moduli Spaces, Mirror Symmetry and Enumerative Geometry](#), ICTP, Trieste (Italy).
- May 26, 2016 *Rette su superfici quartiche K_3 in caratteristica positiva*,
[Giornate di geometria algebrica & argomenti correlati XIII](#), Catania (Italy).
- May 6, 2016 *Lines on quartic surfaces*,
[Junior Geometry Seminar](#), Imperial College London (UK).
- Dec. 21, 2015 *Mirror symmetry of Borcea–Voisin varieties*,
Seminario di Natale, University of Milan (Italy).
- Oct. 27, 2015 *Counting lines on quartic surfaces: new techniques and results*,
Humboldt University of Berlin (Germany).
- Sep. 10, 2015 *Sobre el número de rectas en una superficie cuártica K_3* ,
[Congreso de jóvenes investigadores de la RSME](#), Universidad de Murcia (Spain).
- June 10, 2015 *Compter les droites sur les “quartiques K_3 ”*,
Séminaire du groupe de travail, University of Poitiers (France).
- Mar. 23, 2015 *Techniques for counting lines on K_3 quartic surfaces*,
METU-Bilkent Algebraic Geometry Seminar, Middle East Technical University, Ankara (Turkey).
- Feb. 13, 2015 *Lines on K_3 quartic surfaces*,
METU-Bilkent Algebraic Geometry Seminar, Bilkent University, Ankara (Turkey).
- Nov. 6, 2014 *Sur le nombre maximal de droites sur une surface quartique*,
Séminaire des thésards, Pierre and Marie Curie University (Paris, France).
- June 24, 2014 *Lines on quartics*,
[GAeL XXII – Géométrie Algébrique en Liberté](#), SISSA, Trieste (Italy).
- June 19, 2014 *Lines on mildly singular quartics*,
Seminario di algebra e geometria, University of Pavia (Italy).

Posters

- June 2016 *Lines on K_3 quartic surfaces*,
GAeL XXIV – Géométrie Algébrique en Liberté, Nesin Mathematical Village (Turkey).
- July 2015 *Lines on quartic surfaces*,
[AMS Summer Institute in Algebraic Geometry](#), University of Utah, Salt Lake City.

Other attended events

Aug. 2018	Japanese-European Symposium on Symplectic Varieties and Moduli Spaces (3rd edition) , Kagurazaka, Tokyo (Japan).
March 2018	School on Birational Geometry of Hypersurfaces , Gargnano (Italy).
Aug. 2017	Japanese-European Symposium on Symplectic Varieties and Moduli Spaces (2nd edition), Levico Terme (Italy).
June 2017	Deformations in Turin, University of Turin (Italy).
March 2017	New Trends in Arithmetic and Geometry of Algebraic Surfaces , BIRS, Banff (Canada).
July 2016	ECM 2016 Satellite Conference, Leibniz University Hannover (Germany).
June 2016	Retrospective Workshop for the 2013 Fall Thematic Program on Calabi-Yau Varieties: Arithmetic, Geometry and Physics , Herstmonceux Castle (UK).
June 2015	PRAGMATIC 2015 , University of Catania (Italy).
Oct. 2013	Arithmetic, Geometric and Dynamical aspects, Master class: Around Torelli's theorem for K_3 surfaces, University of Strasbourg (France).
June 2013	GAeL XXI – Géométrie Algébrique en Liberté, Stockholm (Sweden).
May 2013	Syzygies in Berlin, Free University of Berlin (Germany).
Mar. 2013	Nouvelles directions en arithmétique et géométrie des surfaces algébriques, CIRM, Marseille Luminy (France).

Teaching

Spring 2020	Lecture course on <i>School mathematics from a higher standpoint</i> , with JENS WIRTH, Stuttgart.
Fall 2020	Lecture course on <i>Groups, algorithms, geometries and applications (GAGA) B</i> , Stuttgart.
Spring 2020	Teaching assistant for <i>Higher Mathematics for Engineers 1 and 2</i> , Stuttgart.
Fall 2019	Teaching assistant for <i>Higher Mathematics for Engineers 3</i> , Stuttgart.
Fall 2018	Teaching assistant for <i>Number Theory</i> , JGU Mainz.
Aug. 2018	Lecture course (6 lectures) on <i>Plane Curves</i> , Nesin Mathematical Village , Şirince (Turkey).
Spring 2018	Reading course in Algebraic Geometry , with DINO FESTI, JGU Mainz.
Fall 2017	Reading course in Algebraic Geometry , with DINO FESTI, JGU Mainz.
Spring 2017	Reading course in Algebraic Geometry , with DINO FESTI, JGU Mainz.
Fall 2016	Reading course in Algebraic Geometry , with DINO FESTI, JGU Mainz.
Fall 2016	Teaching assistant for <i>Galois Theory</i> , JGU Mainz.
Spring 2016	Teaching assistant for <i>Mathematics for Engineers II</i> , LU Hannover.
March 2015	Lecture course (2 lectures) on <i>Elliptic Fibrations</i> , Bilkent University and METU,

Ankara.

Fall 2014 Teaching assistant for *Algebraic Geometry I*, LU Hannover.

Fall 2013 Teaching assistant for *Modular Forms*, LU Hannover.

Supervised theses

2021 Master thesis on *Derived Categories of Abelian and K3 Surfaces*, Stuttgart.

2021 Bachelor thesis on *Mathieu Groups*, Stuttgart.

Visiting positions

2019 Visiting scholar (2 weeks) at University of Poitiers (France).

2016 Visiting scholar (1 week) at University of Poitiers (France).

2015 Visiting scholar (6 weeks) at University of Poitiers (France).

2015 Visiting scholar (9 weeks) at Bilkent University, Ankara (Turkey).

Languages

ITALIAN: mothertongue.

ENGLISH, FRENCH, GERMAN, SPANISH: proficient.

RUSSIAN: intermediate.

References

PROF. SAMUEL BOISSIÈRE

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