# Olivier Haution

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## Personal information

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|---|---|
| Address | Steinerweg 1a, 81241 Munich, Germany |
| Family status | Married, 2 children (born 2017, 2019) |
| Languages | French, English, German |

## Appointments

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|---|---|
| 04/2021— | Heisenberg position, LMU München |
| 04/2020—03/2021 | Interim professor (W2), LMU München |
| 10/2018—03/2020 | Heisenberg position, LMU München |
| 10/2012—09/2018 | Assistant (Akademischer Rat auf Zeit), LMU München |
| 09/2010—09/2012 | Research fellow, University of Nottingham |
| 09/2009—08/2010 | Temporary lecturer (ATER à temps complet), Université Paris 6 |
| 09/2006—08/2009 | Teaching assistant (Allocataire–Moniteur), Université Paris 6 |
| 09/2005—08/2006 | Tutor, École Polytechnique |

## Education

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|---|---|
| 2016 | Habilitation, Mathematics, LMU München (obtained Jan. 18, 2016), "Integrality properties of algebraic cycles" |
| 2006—2010 | Ph.D., Mathematics, Université Paris 6 (obtained Feb. 9, 2010), "Steenrod operations and quadratic forms" (advisor: Nikita Karpenko) |
| 2005—2006 | Master, Mathematics, École Polytechnique |
| 2002—2005 | Ingénieur Polytechnicien program, École Polytechnique |
| 2000—2002 | Classes préparatoires, Lycée la Martinière Montplaisir, Lyon |

## Awards, Grants

| | |
|---|---|
| 2020—2023 | DFG individual research grant "Intersection theory and cobordism with a quadratic twist", sole PI, supporting one postdoctoral position |
| 2018—2024 | DFG Heisenberg Programme, sole PI |
| 2016—2019 | DFG individual research grant "New perspectives for canonical dimension", sole PI |
| 2006—2009 | Ph.D. scholarship "AMX" funded by the French Ministry of Research |
| 2005 | "Prix d'option scientifique" awarded by the Ecole Polytechnique for an internship at the Tata Institute of Fundamental Research, Mumbai |

## Research interests

Motives, quadratic forms, algebraic cobordism, finite group actions on varieties

## Publications

- O. Haution, On the algebraic cobordism ring of involutions,
  **Annales Scientifiques de l'École Normale Supérieure**, to appear,
  arXiv:2008.11534
- J. Fasel and O. Haution, The stable Adams operations on Hermitian $K$-theory,
  arXiv:2005.08871
- O. Haution and A. S. Merkurjev, Connective $K$-theory and Adams operations,
  **EMS Surveys in Mathematical Sciences**, 8 (2021), no. 1-2, 135–162
- O. Haution, Involutions and Chern numbers of varieties,
  **Commentarii Mathematici Helvetici**, 95 (2020), no. 4, 811–843
- O. Haution, Diagonalisable $p$-groups cannot fix exactly one point on projective varieties,
  **Journal of Algebraic Geometry**, 29 (2020), 373–402
- O. Haution, Fixed point theorems involving numerical invariants,
  **Compositio Mathematica**, 155 (2019), no. 2, 260–288
- O. Haution, On rational fixed points of finite group actions on the affine space,
  **Transactions of the American Mathematical Society**, 369 (2017), 8277–8290
- O. Haution, Involutions of varieties and Rost's degree formula,
  **Journal für die reine und angewandte Mathematik (Crelle)**, 745 (2018), 231–252
- O. Haution, Detection by regular schemes in degree two,
  **Algebraic Geometry**, 2 (2015), no. 1, 44–61
- O. Haution, Invariants of upper motives,
  **Documenta Mathematica**, 18 (2013), 1555–1572
- O. Haution, Duality and the topological filtration,
  **Mathematische Annalen**, 357 (2013), no. 4, 1425–1454
- O. Haution, Integrality of the Chern character in small codimension,
  **Advances in Mathematics**, 231 (2012), no. 2, 855–878
- O. Haution, Degree formula for the Euler characteristic,
  **Proceedings of the American Mathematical Society**, 141 (2013), no. 6, 1863-1869
- O. Haution, Reduced Steenrod operations and resolution of singularities,
  **Journal of $K$-theory**, 9 (2012), no. 2, 269–290
- O. Haution, On the first Steenrod square for Chow groups,
  **American Journal of Mathematics**, 135 (2013), no. 1, 53–63
- O. Haution, Lifting of coefficients for Chow motives of quadrics,
  in Quadratic forms, linear algebraic groups, and cohomology,
  volume 18 of **Developments in Mathematics**, 239-247, Springer, New York (2010)

## Conference talks

- Workshop on birational geometry, Nov. 2020, Higher School of Economics Moscow (online)
- Workshop "Affine Algebraic Groups, Motives and Cohomological Invariants", Sept. 2018, Banff International Research Station
- Workshop on motivic and equivariant homotopy theory, Oct. 2017, Osnabrück
- International Conference in $K$-theory, Aug. 2016, Sydney
- Workshop "Algebraic Cobordism and Projective Homogeneous Varieties", Feb. 2016, Mathematisches Forschungsinstitut Oberwolfach
- Workshop "The Use of Linear Algebraic Groups in Geometry and Number Theory", Sept. 2015, Banff International Research Station
- Conference "(A)round forms, cycles and motives", Sept. 2014, Mainz
- Workshop "Projective modules and A1-homotopy theory", May 2014, American Institute of Mathematics, Palo Alto
- Workshop "Étale and motivic homotopy theory", Mar. 2014, Heidelberg
- Spring school and workshop on Torsors, Motives and Cohomological Invariants, May 2013, Field Institute, Toronto
- Workshop "Lie Algebras, Torsors and Cohomological Invariants", Oct. 2012, Banff International Research Station
- Joint Mathematics Meetings AMS Special Session "Linear Algebraic Groups: Their Arithmetic, Geometry, and Representations", Jan. 2012, Boston
- Conference "Ramification in Algebra and Geometry at Emory", May 2011, Atlanta
- Mini-course "Torsors and Geometry of Quadrics", June 2009, Lens

## Supervision

- One postdoctoral researcher : Fabio Tanania (3 years, since Mar. 2020)
- One Bachelor's thesis "Nonsolvability of degree 5 equations" (2016)

## Teaching

### Lectures

| | |
|---|---|
| 2020—2021 | Brauer groups of fields |
| 2019—2020 | Galois cohomology |
| 2017—2018 | Intersection theory |
| 2016—2017 | Homological methods in commutative algebra |
| 2014—2015 | Intersection theory |
| 2013—2014 | Local algebra |

## Student seminars

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|---|---|
| 2020—2021 | Reading course on étale cohomology |
| 2019—2020 | Number theory for future teachers (×2) (service course) |
| 2018—2019 | Topological data analysis |
| 2015—2016 | Quadratic forms and arithmetic |
| 2014—2015 | Brauer groups and Galois cohomology |
| 2013—2014 | Quadratic forms |
| 2012—2013 | Introduction to motivic cohomology and motives |
| | Arithmetic |

## Exercises

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|---|---|
| 2020–2021 | Brauer groups of fields |
| 2019–2020 | Galois cohomology |
| 2017—2018 | Intersection theory |
| | Linear algebra I |
| 2016—2017 | Homological methods in commutative algebra |
| | Algebraic geometry I |
| | Algebraic geometry II |
| 2015—2016 | Algebra |
| | Linear algebra II |
| 2014—2015 | Intersection theory |
| | Algebraic geometry I |
| | Algebraic geometry II |
| 2013—2014 | Local algebra |
| | Linear algebra II |
| 2012—2013 | Linear algebra I |
| | Linear algebra II |
| 2009—2010 | Linear algebra II (×3) |
| | Arithmetic (×3) |
| 2008—2009 | Arithmetic |
| 2007—2008 | Arithmetic |
| 2006—2007 | Quadratic forms and geometry |
| | Matrices (service course) |
| 2005—2006 | Individual tutoring, 60 hours (distributions, dynamical systems) |

Date: February 10, 2022