

ALEXANDRE MINETS

NATIONALITY: Belarusian, French

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RESEARCH INTERESTS

Geometric representation theory, moduli spaces of sheaves, cohomological Hall algebras, KLR algebras, Higgs bundles, quiver varieties.

EMPLOYMENT

- 2023-present Postdoctoral fellow at *Max Planck Institute*, Bonn, Germany
- 2021-2023 Postdoctoral research associate at the *University of Edinburgh*, UK
- 2018-2021 Postdoctoral researcher at HAUSEL GROUP, *IST Austria*, Klosterneuburg, Austria

EDUCATION

- 2015-2018 PhD student in MATHEMATICS, *Université Paris-Sud*, Orsay, France
Topic: “Nakajima varieties associated to curves” | Advisor: OLIVIER SCHIFFMANN
defended on *September 3, 2018*,
- 2012-2015 Élève at *École Normale Supérieure*, Paris, France
 - 2014 Master 2 in MATHEMATICS, mention “très bien” (GPA 18/20), *Paris 7*
 - 2013 Master 1 in MATHEMATICS, mention “très bien” (GPA 17,8/20), *Paris 6*
- 2009-2012 Student in APPLIED MATHEMATICS, *Belarusian State University*, Minsk, Belarus

PAPERS

- On the cohomological Hall algebra of zero-dimensional sheaves on a smooth surface (joint with A. Mellit, O. Schiffmann, E. Vasserot), *in preparation*
- $P = W$ via \mathcal{H}_2 (joint with T. Hausel, A. Mellit, O. Schiffmann), *preprint*, [arXiv:2209.05429](https://arxiv.org/abs/2209.05429)
- KLR and Schur algebras of curves and semi-cuspidal representations (joint with R. Maksimau), *International Mathematics Research Notices, Volume 2023, Issue 8, April 2023, Pages 6976-7052*, DOI: [10.1093/imrn/rnac055](https://doi.org/10.1093/imrn/rnac055)
- Cohomological Hall algebras for Higgs torsion sheaves, moduli of triples and sheaves on surfaces, *Selecta Mathematica (N.S.)* 26, No. 2, Paper No. 30, 67 p. (2020), DOI: [10.1007/s00029-020-00553-x](https://doi.org/10.1007/s00029-020-00553-x)

INVITED TALKS

- 2023 University of Bonn, Oberseminar Representation Theory
OIST, workshop “Representation Theory of Hecke Algebras and Categorification”
HU Berlin, Arithmetic Geometry Seminar
CUHK, Representation and Number Theory Seminar
HKUST, Algebra and Geometry Seminar
ANU, MSI Colloquium
University of Melbourne, Representation Theory Seminar
IPMU, Mathematics and String Theory Seminar
University of Liverpool, Algebraic Geometry Seminar

- 2022 EPFL, Algebraic Geometry Seminar
University of Edinburgh, Hodge Seminar
- 2021 University of Edinburgh, EGRET Seminar
MFO, workshop “Enveloping Algebras and Geometric Representation Theory”
University of Edinburgh, Hodge Seminar
- 2020 RepNet Virtual Seminar
Institut Henri Poincaré, Colloque Tournant
- 2019 University of Stuttgart, Algebra Seminar
USTC Hefei, Séminaire MathJeunes
Academia Sinica, Postdoc Seminar
University of Edinburgh, Geometric Representation Theory and Low-dimensional Topology Conference
Universität Bonn, Representation Theory Seminar
University of Edinburgh, ARTIN 2019
Université de Montpellier, AGATA Seminar
- 2018 IST Austria, Algebraic Geometry Seminar
IST Austria, Working Seminar
- 2017 Institut Henri Poincaré, Séminaire RéGA
GIT for algebraic stacks (expository)
Isle of Wight, British Isles Graduate Workshop
 $P = W$ conjecture (expository)
RIMS, Algebraic Analysis and Representation Theory Conference (poster)
- 2015 University of Wuppertal, School on Kac conjectures and quiver varieties
Proof of second Kac conjecture (expository)
École Normale Supérieure, Séminaire MathJeunes
Hall algebras and quantum groups (expository)

FUNDING

- LMS Research in Pairs (2023): £900

TEACHING EXPERIENCE

- 2023 Graduate course “Homological algebra” (co-lecturer)
Graduate course “Manifolds” (lecturer)
University of Edinburgh, UK
- 2020 Graduate course “ D -modules” (designed, co-lecturer with Quoc P. Ho)
IST Austria, Klosterneuburg, Austria
- 2015-2017 Teaching assistant, *Université Paris-Sud, Orsay, France*:
 - Calculus and probability theory (3 times)
 - Linear algebra and differential equations (2 times)
 - Multivariate calculus and optimization
- 2011 Special course in algebraic topology (co-lecturer with S. Patotski)
Belarusian State University, Minsk, Belarus

OTHER ACTIVITIES

- Organized Algebra seminar, University of Edinburgh (2023)
- Organized a reading group on stable envelopes, University of Edinburgh (2022)
- Refereed articles for Publications mathématiques de l'IHÉS, Compositio Mathematica, Communications in Mathematical Physics
- Participated in pre-screening of PhD student applications, IST Austria (2020, 2021)
- Supervised student project “Atiyah’s classification of vector bundles on an elliptic curve”, IST Austria (2020)
- Organized a reading group “Number fields with given ramifications and automorphic forms”, Université Paris-Sud (2017)
- Member of jury at [TFJM²](#) (2017, 2018) and [ITYM](#) (2018)
- Member of selection committee and teaching assistant at [MoMISSS](#) summer school, Bremen, Germany (2013, 2017) and Lyon, France (2014)