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

2021-present	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

- KLR and Schur algebras of curves and semi-cuspidal representations (joint with R. Maksimau),
  International Mathematics Research Notices (2022), doi: 10.1093/imrn/rnac055

- Cohomological Hall algebras for Higgs torsion sheaves, moduli of triples and sheaves on surfaces, *Selecta Mathematica (2020) 26:30 (67 pages)*, doi: 10.1007/s00029-020-00553-x

Invited talks

2023	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, Seminaire 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, Seminaire MathJeunes
	Hall algebras and quantum groups (expository)

Teaching experience

2023	Graduate course "Homological algebra" (co-lecturer)
	Graduate course "Manifolds" (lecturer)
	University of Edinburgh, UK
2020	Graduate course "$\mathcal{D}$-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 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)