

# ALEXANDRE MINETS

NATIONALITY: Belarusian, French  
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## RESEARCH INTERESTS:

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Representation theory, moduli spaces of sheaves, cohomological Hall algebras, KLR algebras, quiver varieties, topological field theory.

## EMPLOYMENT:

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2021-present Postdoctoral research associate at the *University of Edinburgh*, UK  
2018-2021 Postdoctoral researcher at HAUSEL GROUP, *IST Austria*, Klosterneuburg, Austria

## EDUCATION:

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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:

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- 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](https://doi.org/10.1007/s00029-020-00553-x)
- KLR and Schur algebras of curves and semi-cuspidal representations, joint with Ruslan Maksimau, *prepublication* (51 pages), *submitted*, [arXiv:2010.01419](https://arxiv.org/abs/2010.01419)

## INVITED TALKS:

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2021 MFO, workshop “Enveloping Algebras and Geometric Representation Theory”  
*Semicuspidal categories of affine KLR algebras*  
University of Edinburgh, Hodge Seminar  
*KLR algebras in positive characteristic and their stratifications*

2020 RepNet Virtual Seminar  
*KLR and Schur algebras for curves and semi-cuspidal representations*  
Institut Henri Poincaré, Colloque Tournant  
*Schur algebras of curves and semi-cuspidal categories*

2019 University of Stuttgart, Algebra Seminar  
*Cohomological Hall algebras and sheaves on surfaces*  
USTC Hefei, Séminaire MathJeunes  
*Hall algebras and sheaves on surfaces*  
Academia Sinica, Postdoc Seminar  
*Hall algebras and sheaves on surfaces*

- University of Edinburgh, Geometric Representation Theory and Low-dimensional Topology Conference  
*A primer on cohomological Hall algebras*
- Universität Bonn, Representation Theory Seminar  
*Shuffle presentation of cohomological Hall algebras for curves*
- University of Edinburgh, ARTIN 2019  
*Cohomological Hall algebras and sheaves on surfaces*
- Université de Montpellier, AGATA Seminar  
*K-theoretic Hall algebras of surfaces and quantum toroidal  $\mathfrak{gl}_n$*
- 2018 IST Austria, Algebraic Geometry Seminar  
*Cohomological Hall algebras and their representations*
- IST Austria, Working Seminar  
*Hall algebras and moduli of sheaves (mini-course)*
- 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  
*Cohomological Hall algebras for Higgs torsion sheaves on curves (poster)*
- 2015 University of Wuppertal, School on Kac Conjectures and Quiver Varieties  
*Proof of second Kac conjecture (expository, with Hans Franzen)*
- École Normale Supérieure, Séminaire MathJeunes  
*Hall algebras and quantum groups (expository)*

## TEACHING EXPERIENCE:

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- 2020 Co-taught graduate course “ $\mathcal{D}$ -modules” (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 Co-taught special course in algebraic topology (with Sasha Patotski)  
*Belarusian State University, Minsk, Belarus*

## OTHER ACTIVITIES:

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- Refereed articles for Publications mathématiques de l’IHÉS, Compositio Mathematica, Communications in Mathematical Physics
- Supervised student project “Atiyah’s classification of vector bundles on an elliptic curve”, IST Austria
- Organized reading group “Number fields with given ramifications and automorphic forms”, Université Paris-Sud
- Member of jury at [TFJM](#)<sup>2</sup> (2017, 2018) and [ITYM](#) (2018)
- Member of selection committee and teaching assistant at [MoMISSS](#) summer school, Bremen, Germany (2013, 2017) and Lyon, France (2014)