Gustavo Jasso
Doctor of Philosophy

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Biographical information

Full name	Gustavo Jasso Ahuja
Date of birth	March 18, 1987
Place of birth	Guadalajara, Mexico
Nationality	Mexican

Research interests

Primary	Representation theory of quivers and algebras
Secondary	Homological algebra, homotopical algebra, higher category theory
	Cluster algebras and the related combinatorics

Employment history

Since 2024 — **Universitätsprofessor für Algebra (W2, permanent position)**, *Faculty of Mathematics and Natural Sciences, University of Cologne*, Cologne, Germany, 15.08.2024
01.04.2025–31.03.2026: Head of Division (Abetelungsleiter), Division of Mathematics of the Department of Mathematics and Informatics.

2022–2024 — **Universitetslektor (Senior Lecturer, permanent position)**, *Centre for Mathematical Sciences, Faculty of Science, Lund University*, Lund, Sweden, 01.03.2022–14.08.2024

2017–2022 — **Akademischer Rat auf Zeit**, *Mathematisches Institut, Rheinische Friedrich-Wilhelms-Universität Bonn*, Bonn, Germany, 01.10.2017–31.03.2022
Contributor to Research Area A2 – Representations and symmetries in algebra and topology.
Parental leave: 13.10.2021–13.12.2021.
Unpaid leave: 01.03.2022–31.03.2022.

2014–2017 — **Hausdorff Postdoc**, *Hausdorff Center for Mathematics, Rheinische Friedrich-Wilhelms-Universität Bonn*, Bonn, Germany, 01.10.2014–30.09.2017
Mentor: Prof. Dr. Jan Schröer.

Education history

2011–2014 — **Doctor of Philosophy (Mathematical Science)**, *Nagoya University*, Nagoya, Japan, Graduation date: 29.09.2014
Thesis title: On τ-tilting theory and higher Auslander–Reiten theory.
Advisor: Prof. Dr. Osamu Iyama.

2009–2011 — **Master of Sciences degree in Mathematics (with honorific mention)**, *Universidad Nacional Autónoma de México (UNAM)*, Mexico City, Mexico, GPA: 9.67/10
Thesis title: El crecimiento de un álgebra de conglomerados de tipo tubular (The growth of a cluster algebra of tubular type).
Advisors: Prof. Dr. Michael Barot (official) and Prof. Dr. Christof Geiss (unofficial second advisor).

2005–2010 **Undergraduate degree in mathematics (with honorific mention)**, *Universidad Nacional Autónoma de México (UNAM)*, Mexico City, Mexico, GPA: 9.84/10
Thesis title: Álgebras de Lie de tipo afín extendido y formas cuadráticas (Extended affine Lie algebras and quadratic forms).
Advisor: Prof. Dr. Michael Barot.

Grants and academical distinctions

2024 **Grant to recruit a foreign researcher for a postdoctoral position in Sweden**, *Knut and Alice Wallenberg Foundation*, 2.000.000 SEK, Declined.

2023–2026 **Research project grant within natural and engineering sciences**, *Swedish Research Council (Vetenskapsrådet)*, 3.520.000 SEK
Project title: Higher structures in higher-dimensional homological algebra. Stopped in 2024 due to move to the University of Cologne.

2022 **11th Award for Encouragement of Alumni and Students (Hida Award)**, *Alumni Association of the Graduate School of Mathematics, Nagoya University*, Nagoya, Japan
Awarded to graduates of the Department of Mathematics, Faculty of Science, Nagoya University, or graduates of the Graduate School of Mathematics, Nagoya, University, who are recognised to have achieved outstanding results through their dissertations, articles published in academic journals, books, and other research achievements.

2018 **International Conference on Representations of Algebras (ICRA) 2018 Award**, *ICRA 2018 Scientific and Award Committees*, Prague, Czech Republic
Awarded at each session of ICRA for outstanding work by young mathematicians (not older than 35 years of age, except to allow for a broken career) in the field of Representations of Finite Dimensional Algebras. A second prize was awarded to Dr. Julian Külshammer (Uppsala).

2010 **Premio Sotero Prieto 2010**, *Sociedad Matemática Mexicana*, Tuxtla Gutiérrez, Mexico
Awarded to the best undergraduate thesis in mathematics presented at a Mexican institution between June 2009 and May 2010 (three theses were recognised).

List of publications

Preprints

[3] G. Jasso and F. Muro, *Obstruction theory for A-infinity bimodules*, 2025, arXiv: `2507.17568`.

[2] G. Jasso, *Q-shaped derived categories as derived categories of differential graded bimodules*, 2025, arXiv: `2501.08255`.

[1] G. Jasso and F. Muro, *The Derived Auslander–Iyama Correspondence, with an appendix by B. Keller*, 2022, arXiv: `2208.14413`.

Book (in progress)

[1] G. Jasso, *Differential graded categories in the representation theory of finite-dimensional algebras*, in progress (251 pages, approx. 50% progress). The book aims to introduce graduate students to the theory differential graded algebras and their derived categories, with a specific focus on its applications in representation theory of finite-dimensional algebras. The book tries to keep prerequisites to a minimum and therefore does not assume knowledge of the theory of triangulated categories (the relevant parts of which are introduced in the book).

Research articles

[15] G. Jasso, *On a theorem of B. Keller on Yoneda algebras of simple modules*, C. R. Math. Acad. Sci. Paris 362 (2024), 1449–1454.

[14] G. Jasso, *Derived equivalences of upper-triangular ring spectra via lax limits*, C. R. Math. Acad. Sci. Paris 362 (2024), 279–285.

[13] T. Dyckerhoff, G. Jasso, and Y. Lekili, *The symplectic geometry of higher Auslander algebras: symmetric products of disks*, Forum Math. Sigma 9 (2021), Paper No. e10, 49, `doi:10.1017/fms.2021.2`.

[12] T. Dyckerhoff, G. Jasso, and T. Walde, *Generalised BGP reflection functors via the Grothendieck construction*, Int. Math. Res. Not. IMRN (2021), 20, 15733–15745, `doi:10.1093/imrn/rnz194`.

[11] T. Dyckerhoff, G. Jasso, and T. Walde, *Simplicial structures in higher Auslander–Reiten theory*, Adv. Math. 355 (2019), 106762, `doi:10.1016/j.aim.2019.106762`.

[10] G. Jasso and J. Külshammer, *Higher Nakayama algebras I: Construction, with an appendix by J. Külshammer and Ch. Psaroudakis and an appendix by S. Kvamme*, Adv. Math. 351 (2019), 1139–1200, `doi:10.1016/j.aim.2019.05.026`.

[9] G. Jasso and S. Kvamme, *An introduction to higher Auslander-Reiten theory*, Bull. Lond. Math. Soc. 51 (2019), 1, 1–24, `doi:10.1112/blms.12204`.

[8] L. Demonet, O. Iyama, and G. Jasso, *τ-tilting finite algebras, bricks, and g-vectors*, Int. Math. Res. Not. IMRN (2019), 3, 852–892, `doi:10.1093/imrn/rnx135`.

[7] O. Iyama and G. Jasso, *Higher Auslander correspondence for dualizing R-varieties*, Algebr. Represent. Theory 20 (2017), 2, 335–354, `doi:10.1007/s10468-016-9645-0`.

[6] G. Jasso, *n-abelian and n-exact categories*, Math. Z. 283 (2016), 3-4, 703–759, `doi:10.1007/s00209-016-1619-8`.

[5] P. A. Bergh, G. Jasso, and M. Thaule, *Higher n-angulations from local rings*, J. Lond. Math. Soc. (2) 93 (2016), 1, 123–142, `doi:10.1112/jlms/jdv064`.

[4] G. Jasso, *τ^2-stable tilting complexes over weighted projective lines*, Adv. Math. 273 (2015), 1–31, `doi:10.1016/j.aim.2014.12.018`.

[3] G. Jasso, *Reduction of τ-tilting modules and torsion pairs*, Int. Math. Res. Not. IMRN (2015), 16, 7190–7237, `doi:10.1093/imrn/rnu163`.

[2] G. Jasso, *The extended affine Lie algebra associated with a connected non-negative unit form*, J. Algebra 409 (2014), 148–161, `doi:10.1016/j.jalgebra.2014.03.029`.

[1] M. Barot, C. Geiss, and G. Jasso, *Tubular cluster algebras II: Exponential growth*, J. Pure Appl. Algebra 217 (2013), 10, 1825–1837, `doi:10.1016/j.jpaa.2012.12.012`.

Proceedings, extended abstracts & other writings

[12] G. Jasso and F. Muro, *Minimal A_∞-algebras of endomorphisms: The case of $d\mathbb{Z}$-cluster tilting objects*, to appear in the proceedings of the XXI International Conference on Representations of Algebras (ICRA 21)., 2025, arXiv: `2508.18852`.

[11] G. Jasso, *Universal Massey Products in Representation Theory of Algebras*, in: Hochschild (co)homology and applications, ed. by w, vol. 21, 2, Abstracts from the workshop held April 14–19, 2024, Organized by Bernhard Keller, Henning Krause, Wendy Lowen and Andrea Solotar, 2024, 1148–1150, `doi:10.4171/owr/2020/3`.

[10] G. Jasso, *Derived Endomorphism Algebras in Higher Auslander–Reiten Theory*, in: Representation theory of quivers and finite-dimensional algebras, vol. 20, 1, Abstracts from the workshop held February 12–18, 2023, Organized by Claire Amiot, William Crawley-Boevey, Osamu Iyama and Jan Schröer, 2023, 409–412, `doi:10.4171/owr/2023/7`.

[9] G. Jasso, B. Keller, and F. Muro, *The Donovan–Wemyss Conjecture via the Derived Auslander–Iyama Correspondence*, in: Triangulated Categories in Representation Theory and Beyond, 17, Abel Symp. Springer, Cham, 2024, 105–140, `doi:10.1007/978-3-031-57789-5\_4`.

[8] G. Jasso, *The symplectic geometry of higher Auslander algebras, an overview*, in: Representation theory of quivers and finite dimensional algebras, ed. by w, vol. 17, 1, Abstracts from the workshop held January 19–25, 2020, Organized by Claire Amiot, William Crawley-Boevey, Osamu Iyama and Henning Krause, 2020, 190–192, `doi:10.4171/owr/2020/3`.

[7] G. Jasso, *Higher Auslander algebras of type A and the higher Waldhausen S-constructions*, in: Representation theory and beyond, ed. by J. Šťovíček and J. Trlifaj, 758, Contemp. Math. Amer. Math. Soc., Providence, RI, 2020, 249–265, `doi:10.1090/conm/758/15238`.

[6] G. Jasso and J. Külshammer, *Nakayama-type phenomena in higher Auslander-Reiten theory*, in: Representations of algebras, ed. by G. J. Leuschke, F. Frauke Bleher, R. Schiffler, and D. Zacharia, 705, Contemp. Math. Amer. Math. Soc., Providence, RI, 2018, 79–98, `doi:10.1090/conm/705/14191`.

[5] G. Jasso, *Spherical objects in higher Auslander–Reiten theory (joint work with J. Külshammer)*, in: Representation Theory of Quivers and Finite Dimensional Algebras., ed. by W. Crawley-Boevey, O. Iyama, and H. Krause, vol. 14, Oberwolfach Rep. 1, European Mathematical Society Publishing House, 2017, 621–622, `doi:10.4171/OWR/2017/12`.

[4] G. Jasso and J. Külshammer, *The naive approach for constructing the derived category of a d-abelian category fails*, not intended for publication., 2016, arXiv: `1604.03473`.

[3] G. Jasso, *Reduction of τ-tilting modules and torsion classes*, in: Proceedings of the 16th Workshop on Representation Theory of Algebraic Groups and Quantum Groups, 2013, 157–160.

[2] G. Jasso, *Cluster-tilted algebras of canonical type and quivers with potential*, in: Proceedings of the 45th Symposium on Ring Theory and Representation Theory, 2012, 61–68.

[1] G. Jasso, *Cluster-tilted algebras of canonical type and graded quivers with potential*, in: Proceedings of the 15th Workshop on Representation Theory of Algebraic Groups and Quantum Groups, 2012, 13–18.

Theses and dissertations

[3] G. Jasso, *On τ-tilting theory and higher Auslander–Reiten theory*, Doctoral dissertation, Nagoya University, 2014, comprises publications [3], [4] and [6].

[2] G. Jasso, *El crecimiento de un álgebra de conglomerados de tipo tubular*, Master's thesis, Universidad Nacional Autónoma de México, 2011, comprises part of publication [1].

[1] G. Jasso, *Álgebras de Lie de tipo extendido y formas cuadráticas*, Bachelor's thesis, Universidad Nacional Autónoma de México, 2010, comprises publication [2].