

Curriculum Vitae

Thomas Brüstle

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and

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Université de Sherbrooke

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CURRICULUM VITAE

Introduction

Name : Thomas Brüstle

Place and date of birth : Munich, Germany, November 16th, 1964

Citizenship : German

Languages: German, English, French

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Qualifications

- June 1987 Bachelor's in Mathematics, Ludwig-Maximilians-Universität München
- Nov. 1990 Master's in Mathematics, University of Zürich
- May 1995 Ph.D. in Mathematics (Supervisor Prof. Dr. P. Gabriel), University of Zürich
- May 2002 Habilitation in Mathematics, University of Bielefeld

Academic Experience

1990-1995	Teaching Assistant	Universität Zürich
1996-2002	C1-position (wissenschaftlicher Assistent)	University of Bielefeld
2002-2005	C2-position (Hochschuldozent)	University of Bielefeld
2003-	Maurice Auslander Research Chair	UdeS and Bishop's
2003-2004	Assistant professor	Bishop's University
2003-2006	Assistant professor	U. de Sherbrooke
2004-2008	Associate professor	Bishop's University
2006- 2013	Associate professor	U. de Sherbrooke
2008-	Full professor	Bishop's University
2013 -	Full professor	U. de Sherbrooke

Research Contributions:

- [45] Th. Brüstle, D. Smith and H. Treffinger, *Stability Conditions and Maximal Green Sequences in Abelian Categories*, submitted to Revista de la Unión Matemática Argentina (arXiv: 1805.04382)
- [44] Th. Brüstle, G. Douville, K. Mousavand, H. Thomas, E. Yildirim, *On the combinatorics of gentle algebras*, accepted for publication in Canadian Journal of Mathematics. (arXiv:1707.07665)
- [43] Th. Brüstle, S. Hassoun, D. Langford and S. Roy, *Reduction of exact structures*, J. Pure Appl. Algebra 224 (2020), no. 4, 106212, 29 pp. (arXiv:1809.01282)
- [42] Th. Brüstle, D. Smith and H. Treffinger, *Wall and Chamber Structure for finite-dimensional Algebras*, Adv. Math. 354 (2019), 106746, 31 pp. (arXiv:1805.01880)
- [41] Th. Brüstle and J. Zhang, *Non-Leaving-Face property for marked surfaces*, Frontiers of Mathematics in China, 2019, 14(3): 521–534. (arXiv:1801.09501)
- [40] J. Alves, D. Castonguay, and Th. Brüstle, *A Polynomial Recognition of Unit Forms Using Graph-Based Strategies*, Discrete Applied Mathematics 253 (2019), 61–72.
- [39] Th. Brüstle, S. Hermes, K. Igusa, and G. Todorov, *Semi-invariant pictures and two conjectures on maximal green sequences*, Journal of Algebra, Volume 473, 1 March 2017, Pages 80–109.
- [38] J. Alves, D. Castonguay, and Th. Brüstle, *A Polynomial Recognition of Unit Forms*, Electronic Notes in Discrete Mathematics, Volume 55, November 2016, Pages 203–206, 14th Cologne-Twente Workshop on Graphs and Combinatorial Optimization (CTW16).
- [37] Th. Brüstle and S. Pan, *Transfer of derived equivalences from subrings to endomorphism algebras*, J. Algebra and its Applications, Vol. 15, No. 06 (2016).
- [36] Th. Brüstle and Q. Yu, *Tagged mapping class groups I: Auslander-Reiten translation*, Math. Zeitschrift, Volume 279, Issue 3 (2015), Page 1103–1120.

- [35] L. Beaudet, Th. Brüstle, and G. Todorov, *Projective dimension of modules over cluster-tilted algebras*, Algebras and Representation Theory: Volume 17, Issue 6 (2014), Page 1797–1807.
- [34] Th. Brüstle, D. Yang, *On Ordered Exchange Graphs*, EMS Series of Congress Reports: Advances in Representation Theory of Algebras (2014), 135–193. DOI: 10.4171/125-1/5
- [33] Th. Brüstle, G. Dupont and M. Pérotin, *On Maximal Green Sequences*, Int Math Res Notices (2014), 4547–4586.
- [32] Th. Brüstle and J.Zhang, *A module-theoretic interpretation of Schiffler’s expansion formula*, Communications in Algebra, Volume 41, Issue 1 (2013), 260–283.
- [31] Th. Brüstle and J.Zhang, *On the cluster category of a marked surface*, Algebra & Number Theory 5-4 (2011), 529–566.
- [30] Th. Brüstle, J.-A. de la Pena and A. Skowronski, *Tame algebras and Tits quadratic forms*, Advances in Mathematics 226 (2011), 887–951.
- [29] A. Beineke, Th. Brüstle and L. Hille, *Cluster-Cyclic Quivers with three Vertices and the Markov Equation*, Algebras and Representation Theory, Volume 14, Number 1 (2011), 97–112.
- [28] I. Assem, Th. Brüstle and R. Schiffler, *Cluster-tilted algebras without clusters*, Journal of Algebra 324 (2010), 2475–2502.
- [27] I. Assem, Th. Brüstle, G. Charbonneau-Jodoin and P.-G. Plamondon, *Gentle algebras arising from surface triangulations*, Algebra and Number Theory, Vol. 4, No. 2 (2010), 201–229.
- [26] I. Assem, Th. Brüstle and R. Schiffler, *On the Galois coverings of a cluster-tilted algebra*, Journal of Pure and Applied Algebra, Volume 213, Issue 7, (2009), 1450-1463.
- [25] I. Assem, M. Blais, Th. Brüstle, and A. Samson, *Mutation classes of skew-symmetric 3×3 -matrices*, Comm. Algebra 36 (2008), no. 4, 1209–1220.
- [24] I. Assem, Th. Brüstle and R. Schiffler, *Cluster-tilted algebras as trivial extensions*, Bull. London Math. Soc. 40 (2008), 151–162.

- [23] I. Assem, Th. Brüstle and R. Schiffler, *Cluster-tilted algebras and slices*, Journal of Algebra 319 (2008), 3464–3479.
- [22] I. Assem, Th. Brüstle, R. Schiffler and G. Todorov, *m-cluster categories and m-replicated algebras*, Journal of Pure and Applied Algebra **212/4** (2008), 884-901.
- [21] Th. Brüstle, *Classification of algebras and their representations*, in Handbook of tilting theory, London Math. Soc. Lecture Note Series No. 332 (2007), 15–30.
- [20] I. Assem, Th. Brüstle, R. Schiffler and G. Todorov, *Cluster categories and duplicated algebras*, J. Algebra, **305** (2006), 548–561.
- [19] Th. Brüstle, *Typical Examples of Tame Algebras*. Representations of finite dimensional algebras and related topics in Lie theory and geometry, 27–44, Fields Inst. Commun., 40, Amer. Math. Soc., Providence, RI, 2004
- [18] Th. Brüstle, *Tame Tree Algebras*, Journal für die reine und angewandte Mathematik (Crelle’s Journal) **567** (2004), 51–98.
- [17] Th. Brüstle and V.V.Sergeichuk, *Estimate of the number of one-parameter families of modules over a tame algebra*, Linear Algebra and its Applications **365** (2003), 115-133.
- [16] Th. Brüstle, *On positive roots of pg-critical algebras*, Linear Algebra and its Applications **365** (2003), 107–114.
- [15] Th. Brüstle, *On \mathbb{E}_6 -free tree algebras*, Representations of Algebras Vol II (Proceedings ICRA IX), BNU Press, Beijing (2002), 174–182.
- [14] Th. Brüstle and Y. Han, *Tame two-point algebras without loops*, Comm. Algebra **29** (2001), no.10, 4683–4692.
- [13] Th. Brüstle, S. König and V. Mazorchuk, *The coinvariant algebra and representation types of blocks of category \mathcal{O}* , Bull. London Math. Soc. **33** (2001), no. 6, 669–681.

- [12] Th. Brüstle, L. Hille and G. Röhrle, *Finiteness for Parabolic Group Actions in Classical Groups*, Archiv der Mathematik **76** (2), (2001), 81–87.
- [11] Th. Brüstle, *Derived-tame tree algebras*, Compositio Mathematica **129** (2001), 301–323.
- [10] Th. Brüstle, *Kit algebras*, Journal of Algebra **240** (2001), no. 1, 1–24.
- [9] Th. Brüstle and L. Hille, *Actions of Parabolic Subgroups in GL_n on Unipotent Normal Subgroups and Quasi-hereditary Algebras*, Colloquium Mathematicum **83** (2000), no. 2, 281–294.
- [8] Th. Brüstle and L. Hille, *Matrices over Upper Triangular Bimodules and Δ -filtered Modules over Quasi-hereditary Algebras*, Colloquium Mathematicum **83** (2000), no. 2, 295–303.
- [7] M. Barot, Th. Brüstle and J.A. de la Peña, *Derived-tame tree algebras of type \mathbb{E}* , Forum Mathematicum **12**(6) (2000), 713–721.
- [6] Th. Brüstle and L. Hille, *Finite, Tame and Wild Actions of Parabolic Subgroups in $GL(V)$ on Certain Unipotent Subgroups*, Journal of Algebra **226** (2000), no. 1, 347–360.
- [5] Th. Brüstle, L. Hille, C.M. Ringel and G. Röhrle, *The Delta-filtered modules without self-extensions for the Auslander algebra of $k[T]/\langle T^n \rangle$* , Algebras and Representation Theory **2** (1999), 295–312.
- [4] Th. Brüstle, L. Hille, G. Röhrle and G. Zwara, *The Bruhat-Chevalley order of Parabolic Group Actions in General Linear Groups and Degeneration for Delta-filtered Modules*, Advances in Mathematics **148** (2) (1999), 203–242.
- [3] Th. Brüstle, *On the growth function of tame algebras*, C.R. Acad. Sci Paris, **322** (1996), 211–215.

- [2] Th. Brüstle, *Matrix-finite Bimodules: An Algorithm*, C.R. Acad. Sci Paris, **319** (1994), 1141-1145.
- [1] Th. Brüstle, *On commutative tame algebras*, C.R. Acad. Sci Paris, **318** (1994), 13-18.

Recent research support

- NSERC discovery grant 2019-2024 (\$130,000), Exact Structures in Representation Theory.
- NSERC discovery grant 2014-2019 (\$140,000)
- FQRNT group grant, Quebec, 2013-2016 (\$126,000 for the research group formed by I. Assem, Th. Brüstle, V. Charette, S. Liu and V.Shramchenko)
- Subvention d'équipe PIFIR, Université de Sherbrooke, 2011-2019, \$20,000 per year, for the research group formed by I. Assem, M. Beaudry, J.-M.Belley, Th. Brüstle, V. Charette, T.Kaczynski, S. Liu and V.Shramchenko.
- NSERC discovery grant 2009-2014 (\$140,000)
- PIFIE-grant Université de Sherbrooke, 2009-2011 (\$64,626 for the research group formed by I. Assem, M. Beaudry, J.-M.Belley, Th. Brüstle, V. Charette, T.Kaczynski, S. Liu and V.Shramchenko)
- SRC grant Bishop's University, 2019 (\$9,000), Ribbon graphs in representation theory.
- SRC grant Bishop's University, 2014 (\$6,026)
- SRC grant Bishop's University, 2013 (\$6,500)
- SRC grant Bishop's University, 2012 (\$6,299)

Recent talks at meetings and conferences

- Workshop Representations of Algebras, Oberwolfach, Germany, January 2020: Derived equivalences between skew-gentle algebras using orbifolds

- 50 years representation theory in Bielefeld: Past and Future, Bielefeld, September 2019: Matrix reductions, past and future
- Summer School on Stability Conditions, Hausdorff Center, Bonn, September 2019: Rudakov stability
- CRM workshop on quiver varieties, Montreal, August 2019: On c-vectors
- Homological methods, Iowa City, August 2019: On c-vectors
- Workshop on Cluster Algebras and Applications, Kyoto, Japan, June 2019: Skew-gentle algebras and Fukaya Categories of orbifolds
- Conference on Representation Theory and Homological Mirror Symmetry, Leicester, UK, May 2019: Skew-gentle algebras and Fukaya Categories of orbifolds
- AMS sectional meeting, Hartford, CT, April 2019: Skew-gentle algebras.
- ARTA 7, Mexico, September 2018, invited presentation: Matrix reduction and exact structures.
- ICRA, Prague, August 2018, presentation: Wall and chamber structure and maximal green sequences.
- CMS, section Representation Theory of Algebras and Related Topics, Fredericton, June 2018, presentation: Matrix reductions and exact structures.
- AMS meeting, Boston, April 2018, presentation: Wall and chamber structure and maximal green sequences.
- ARTA VI, Luminy, France, September 2017, presentation: On Ext-groups for gentle algebras.
- International Conference on Representations of Algebras and Related Topics, Cape Cod, May 2017, presentation: On the combinatorics of gentle algebras.

- Representation theory of finite-dimensional algebras, Oberwolfach workshop, Germany, February 2017. Plenary lecture: On stability conditions and torsion classes
- Second International Workshop and Conference on Commutative Algebra, Tribhuvan University Kathmandu, Nepal, October 2016. Invited lecture: On cluster algebras.
- Algebraic Combinatorics and Group Actions Conference at Herstmonceux, UK, June 2016. Invited lecture: On Maximal Green Sequences.
- Workshop on Silting Theory and Related Topics, July 2015, Verona, Italy, invited lecture: On the non-leaving face property.
- ARTA conference on algebra and representation theory, Guanajuato, Mexico, June 2015: invited lecture: The boundary algebra.
- International Conference on Representations of Algebras and Related Topics, Cape Cod, May 2015, lecture: On the non-leaving face property for associahedra.
- invited presentation "Tilting and Cluster tilting Theory" at school on Cluster Algebras and Dynamical Systems, Münster, Germany, February 2015.
- presentation "on the non-leaving face property" at conference CAAC2015, Queens University, Kingston, January 23-25, 2015.

(Co-)organizer of recent and upcoming meetings

- (with S.Hassoun, A.Shah, S-A.Wegner) Additive categories between algebra and functional analysis, March 2021, fully online.
- (with J.A. de la Pena, D.Pauksztello, D.Ploog) BIRS CMO workshop, Oaxaca, Mexico, October 2018, Stability conditions in representation theory
- (with I.Assem and V.Charette) Summer School Université de Sherbrooke, June 2015.

- (with I. Assem, J.A. de la Pena, A. Skowronski) Third Conference on Algebra and Representation Theory, UQAM, Montreal, June 2014.
- (with I.Assem, A. Berenstein, V.Chari, H.Thomas) CRM workshop on Hall and Cluster Algebras, CRM Montreal, May 2014
- (with the members of the representation theory group in Sherbrooke) Annual meeting on representation theory of algebras, Sherbrooke.

Other evidence of impact

- Simons Visiting Professorship (SVP), joint program with MFO, two weeks visit at University of Grenoble, January 2020.
- External examiner of the Ph.D. defense for Emine Yildirim, UQAM, May 2018.
- Member of the FRQNT Evaluation Group for the program "Établissement de nouveaux chercheurs universitaires", Quebec, 2013.
- Member of the CRM-ISM Postdoctoral Fellowship Selection Committee, Montreal, 2013.
Security Agency (NSA) Mathematical Sciences Grant Program, USA, March 2012.
- Member of the NSERC Evaluation Group on Mathematics and Statistics, Ottawa, 2009-2012.
- Member of the Laboratoire de combinatoire et d'informatique mathématique at the Centre de recherches mathématiques, Montreal.

Recent supervision of graduate students

Co-supervisor of Marco Armenta, postdoctoral student, Fall 2019-

Supervisor of Benjamin Blanchette, doctoral student, Fall 2019-

Supervisor of Sunny Roy, Master's student, summer 2019-

Supervisor of Ndongo Diouf, postdoctoral student, winter 2019-2020.

Supervisor of Zhi Cheng, postdoctoral student, summer 2017.

Supervisor of Min Huang, postdoctoral student (with Shiping Liu), summer 2017 – summer 2019

Supervisor of Denis Langford, Ph.D. student, Winter 2019 –

Supervisor of Denis Langford, Master’s student, Fall 2017 – Fall 2018

Supervisor of Souheila Hassoun, Ph.D. student, Fall 2016 –

Supervisor of Alexander Garver, postdoctoral student, August 2016 – August 2018. Joint supervision with Hugh Thomas, UQAM.

Co-supervisor of Jessmer Alves (with Diane Castonguay) Ph.D. student, January 2016 – August 2016

Co-supervisor of Hector Jose Blandin Noguera (with Ibrahim Assem and Shiping Liu) Post-doctoral student, September 2015 – August 2016

Co-supervisor of Yichao Yu (with Shiping Liu) Post-doctoral student, January 2015 – December 2016.

Co-supervisor of Jinde Xu (with Ibrahim Assem and Shiping Liu) Post-doctoral student, January 2015 – December 2016.

Co-supervisor of Jorge Chavez Martinez (with Ibrahim Assem) Master’s student, September 2014 – Winter 2017.

Supervisor of Erwan Biland, postdoctoral student, January 2014 – June 2014. Now professeur in classe préparatoire au lycée Chateaubriand, Rennes. Invited professor at NYU Abu Dhabi.

Supervisor of Shengyong Pan, postdoctoral student and recipient of a MELS V2 scholarship, November 2012 – October 2013. Now professor at Beijing Jiatong University.

Supervisor of Jean-François Marceau, Master’s student, Fall 2013 – Fall 2016. Now studying MBA with concentration in finance at Université de Sherbrooke.

Supervisor of Yu Qiu, postdoctoral student, August 2012 – February 2013. He is presently research assistant professor in Chinese University of Hong Kong. Recipient of the ICRA award 2016.

Recent (co-)supervision of undergraduate students

- * Samuel Lalumière-Lavoie, Winter 2020, research initiation. Project: extriangulated categories.
- * Rose-Line Baillargeon, Fall 2019, NSERC USRA. project: Isomorphism of lattices between exact structures and subbifunctors of Ext^1 .
- * Louis-Simon Létourneau, Fall 2019, research initiation. Project: 2d-persistence theory
- * Gabriel Dupuis, Fall 2019, research initiation. Project: 2d-persistence theory
- * Séré Beauguesne Lévesque, Fall 2018, NSERC USRA, works on extriangulated categories.
- * Rose-Line Baillargeon, summer 2018, SAG bursary. Work on gentle algebras, surface triangulations, Fukaya category.
- * Sunny Roy, UdeS, USRA, summer 2017. Work on matrix reduction techniques.
- * Denis Langford, Université de Sherbrooke, summer 2017. SAG bursary. Work on matrix reduction techniques.
- * Frédéric Langlois, winter 2017. Work on cluster algebra structure for Grassmannians.
- * Jenna Downey, Bishop's, summer 2016 (USRA). Graduate student at UBC.
- * Philippe Laporte, Bishop's, summer 2016 (not funded, free research project to support his participation at a conference)
- * Denis Langford, Université de Sherbrooke, winter 2016, NSERC USRA, cluster algebras.
- * Emma Merel-Léorat, Université de Sherbrooke, winter 2016, undergraduate memoire following French system, on cluster algebras.
- * Jean-Philippe Morissette, Université de Sherbrooke, winter 2015, math finance project, PIFIR support.
- * Jean-Philippe Morissette, Université de Sherbrooke, summer 2014, exchange graph project
- * Catherine Masson (co-supervision with I. Assem), Université de Sherbrooke, summer 2014