

Curriculum Vitae

Geoffrey JANSSENS

PERSONAL DATA

CITIZENSHIP: Belgian
EMAIL: geoffrey.janssens@uclouvain.be
MOTHER TONGUE: French, Dutch
FLUENT: English, German

EMPLOYMENT AND EDUCATION

CURRENTLY	Assistant Research Professor (0.1), VUB Member of the Algebra and Analysis research group
CURRENTLY & 10/2021-9/2022	Senior Postdoctoral Research Fellow, VUB Fellowship: Fonds voor Wetenschappelijk Onderzoek (FWO) Member of the research team of Prof. Dr. Kenny De Commer
10/2022 - (on leave)	Postdoctoral Researcher, Université Catholique de Louvain-La-Neuve Fellowship: Chargé de Recherche du Fond de la Recherche Scientifique (FNRS) Member of the research team of Prof. Dr. Pedro Vaz
3/2020 - 9/2020 & 3/2022 - 7-2022	Postdoctoral visiting researcher, Université de Paris Member of the research team 'Groupes, Représentations et Géométrie' working with Prof. Dr. Bernhard Keller.
6/2017-9/2021	Junior Postdoctoral Research Fellow, VUB Fellowship: Fonds voor Wetenschappelijk Onderzoek (FWO)
10/2014 - 5/2017	Ph.D. in Mathematics, Vrije Universiteit Brussel Supervisor: Prof. Dr. Eric Jespers and Dr. Alexey Gordinenko Grant: Fonds voor Wetenschappelijk Onderzoek (FWO)
10/2012 - 9/2014	Teaching assistant, Mathematics Department VUB
9/2010 - 6/2012	Master in Fundamental Mathematics, Vrije Universiteit Brussel Grade: Grootste Onderscheiding

SCIENTIFIC AWARDS

2016-3	KWG prize <i>The prize is yearly awarded at the Dutch National Mathematical Congress for mathematical merits during the PhD and ability to make subject accessible to non-specialists.</i>
2018-11	Reinhold Baer prize <i>The prize is annually granted jointly by the association AGTA and publisher Aracne for outstanding PhD thesis in group theory and its applications. Received a special mention.</i>

PUBLICATIONS AND PREPRINTS

Publications

- (1) G. Janssens, *Primitive Central Idempotents of Rational Group Algebras*, J. Algebra Appl. 12 (2013), no. 1, 125–130
- (2) A. Gordienko, G. Janssens, *$\mathbb{Z}S_n$ -modules and polynomial identities with integer coefficients*, Int. J. Algebra Comput. 23 (2013), no. 8, 1925–1943
- (3) E. Aljadeff, G. Janssens, Y. Karasik, *The Polynomial Part of the Codimension Growth of Affine PI algebras*, Adv. Math. 309 (2017), 487–511.
- (4) A. Gordienko, G. Janssens, E. Jespers, *Semigroup graded algebras and graded PI-exponent*, Israel J. Math. 220 (2017), no.1, 387–452
- (5) G. Janssens, E. Jespers, D. Temmerman, *Free products in the unit group of the integral group ring of a finite group*, Proc. Amer. Math. Soc. 145 (2017), no. 7, 2771–2783
- (6) G. Janssens, *A Glimpse into the Asymptotics of Polynomial identities*, Nieuw Arch. Wiskd. (5) 18 (2017), no.1, 60–64
- (7) F. Eisele, G. Janssens, T. Raedschelders, *A reduction theorem for τ -rigid modules*, Math. Z. 290 (2018), 3–4, 1377–1413
- (8) G. Janssens, *Codimension Growth of Lie algebras with a generalized action*, Proc. Amer. Math. Soc. 150 (2022), no. 7, 2741–2754
- (9) A. Bächle, G. Janssens, E. Jespers, A. Kiefer, D. Temmerman, *Higher modular groups as amalgamated products and a dichotomy for integral group rings*, J. Algebra 604 (2022), 185–223
- (10) A. Bächle, G. Janssens, E. Jespers, A. Kiefer, D. Temmerman, *Abelianization and fixed point properties of linear groups and units in integral group rings*, Math. Nachr. 296 (2023), no. 1, 8–56
- (11) G. Janssens, *Cluster Ensembles and the Fock-Goncharov duality conjectures*, Oberwolfach Reports (2023), no. 45, 36–39, doi: 10.4171/OWR/2023/45
- (12) G. Janssens, F. Jespers, O. Schnabel, *Units of twisted group rings and their correlations to classical group rings*, Adv. Math. 458 (2024), 81 pp

Preprints and work in final phase

- (13) F. Caenepeel, G. Janssens, *Glider Representation Rings with a view on distinguishing groups*, submitted (2020), 41 pp, arXiv:1911.11733
- (14) G. Janssens, L. Margolis, *On integral decomposition of unipotent elements in integral group rings*, submitted (2023), 44 pp, arXiv:2307.14820
- (15) G. Janssens, D. Temmerman, F. Thilmany, *Simultaneous ping-pong of finite subgroups of reductive groups*, available upon request (2024), 46 pp
- (16) G. Janssens, U. Jezernik, *Rigidity of groups and associated quotient varieties related via cohomology ring*, available upon request (2024), 39 pp
- (17) R. Corveleyn, G. Janssens, D. Temmerman, *The Virtual Structure problem for Higher modular groups*, available upon request (2024), 32 pp

GAP-code

- (i) F. Eisele, G. Janssens, T. Raedschelders, GAP for tau-tilting modules : code written for our paper, <https://github.com/feisele/tau-tilting-article-code/blob/master/tautilting.g>

SUPERVISION

Supervision of Ph.D. students

- 2015 - 2019 Doryan Temmerman, *Fixed point properties for low rank linear groups over orders and applications to integral group rings*, co-supervisor: Eric Jespers
Defended on 24th of May 2019
- 2024 - 2028 Wannes Malfait, *Quantum cluster C^* -algebras and positive representations*
co-supervisor: Kenny De Commer

Supervision of Master thesis

- 2024 - 2025 Luca Descheemaeker, *Soergel bimodules and its uses*
co-supervisor: Kenny De Commer
- 2023 - 2024 Wannes Malfait, *On quantum cluster algebras following Goodearl-Yakimov*
co-supervisor: Kenny De Commer

Supervision of Bachelor thesis

- 2015 - 2016 Charlotte Verwimp, *Free groups and the Growth of Groups*
- 2015 - 2016 Maurits van Roozendaal, *The McKay Correspondence*
- 2019 - 2020 Maxime Wybouw, *S_n through the looking glass en GL_d als de Mad Hatter - Shur-Weyl dualiteit*
- 2019 - 2020 Julie Symons, *How abelian can a finite group be? : The Joseph Conjectures*
- 2020 - 2021 Robynn Corveleyn, *Lie methods in Group Theory : On Wilson and Zelmanov's GI-PI theorem*
- 2021 - 2022 Wannes Malfait, *Taking commuting probabilities to infinity and beyond*
- 2021 - 2022 Marthe Ballon, *Buchbergers algorithm and optimization with Machine Learning*
- 2021 - 2022 Andreas Lorrain, *Van topologie naar combinatoriek : een introductie tot simplicale verzamelingen*
- 2021 - 2022 Charlotte Roelants, *A trip to the tropics: solving Hilbert's 16th problem using Tropical geometry*

Supervision of pedagogical projects

- 2013 - 2014 Ilse Spruyt, Onderwijsstage Analyse I
- 2016 - 2017 Estelle Osman, Onderwijsstage Groepentheorie

FELLOWSHIPS

- 2014-10 Aspirant Fellowship, Research Foundation Flanders (FWO)
Personal four year PhD research grant from the national science foundation (ranked 2nd)
- 2015-10 FWO Aspirant Fellowship for Doryan Temmerman (joint with Eric Jespers)
PhD research grant for my doctoral student D. Temmerman.
- 2018-10 Post-doctoral Fellowship, Research Foundation Flanders (FWO)
Personal three year post-doctoral grant (ranked 1st)
- 2020-02 Grant of the FWO for a long research stay abroad
6732 euro for my long visit to Prof. B. Keller at Université de Paris
- 2021-10 Senior Post-doctoral Fellowship, Research Foundation Flanders (FWO)
Personal three year post-doctoral grant
- 2021-10 Chargé de Recherches, Fund for Scientific Research (F.R.S.-FNRS)
Personal three year post-doctoral grant
- 2022-02 Grant of the FWO for a long research stay abroad
5148 euro for a long visit to Prof. B. Keller at Université Paris cité

INVITED TALKS

Invited talks at conferences and workshops

- *X International Workshop Non-associative algebras*, Bucarest, 22-25 September 2024
- "Cluster ensembles and the Fock-Goncharov conjectures", *Arbeitsgemeinschaft Cluster Algebras*, Oberwolfach, 13 October 2023
- "The representation theory bridge from the Bogomolov multiplier to class preservers", *Groups, Rings and the Yang-Baxter equation*, Blankenberghe, 20 June 2023
- "Filtrations of Group representations : a glider perspective", *Second Antipode Workshop*, ULB, Brussels, 13 September 2022
- "The Subgroup Congruence Problem and its role in group rings", *GTA: Gran Bilbao, conference*, Bilbao, Spain, 28 February 2019
- "The integral isomorphism problem, a helping hand from (geometric) group theory", *AGTA Workshop - Reinhold Baer Prize*, Napoli, Italy, 5 November 2018
- "A Glimpse into the asymptotics of Polynomial identities", *Conference Groups, Rings and the Yang-Baxter equation*, Spa, Belgium, 20 June 2017
- "Abstracte groepen, meer dan gewoon abstracte objecten", *Nationale Wiskunde Dagen*, Noordwijkerhout, Netherlands, 4 February 2017
- "Identities of Algebras and Groups and their Asymptotic behaviour", *BeNeLux Mathematical Congress*, University of Amsterdam, Netherlands, 23 March 2016

Invited talks at seminars and summerschools

- "TBA", *European Non-Associative Algebra Seminar*, online, 5 May 2025
- "Bridging Representation theories through Cluster algebras", *Algebra seminar Leeds*, Université de Strasbourg, 10 December 2024
- "Bridging Representation theories through Cluster algebras", *séminaire ART*, Strasbourg, 3 December 2024
- "A geometrical introduction to Markov traces (following Webster-Williamson)", Clermont-Ferrand, 28 May 2024
- "Group Invariants Observed with a representation theoretical lens", Paris Algebra seminar, 12 February 2024
- "An abundance of free products in $GL_n(D)$ ", *algebra seminar*, University of Ljubljana, 23 May 2023
- "The virtual structure problem for group rings: a helping hand by geometric group theory"
MSU-IIT Algebra Lecture Series, Philippines, online, 15 March 2023
- "Comparing additive and monoidal categorification via Quantum Affine Algebras"
Seminar on quantum groups, Université de Louvain-La-Neuve, 19 October 2022
- "A polynomial identity perspective on the classification of finite dimensional algebras", *Séminaire Algèbre et Topologie*, Université de Strasbourg, 11 October 2022
- "Des matrices qui communiquaient dans 2 langues étonnamment différentes (une histoire selon J. Tits)"
BSSM - Brussels Summer School Of Mathematics, ULB, Brussels, 2 September 2022
- "On the Virtual Structure Problem for group rings", *Group Theory Seminar*, ICMAT, Madrid, 24 February 2022

- “Amalgamated Decompositions of Higher Modular Groups and their Elementary Part ”, *Seminário de Álgebra*, University of Brasília, online, 9 April 2021
- “A reduction theorem for τ -rigid modules: string algebras ringing”, *Séminaire d’algèbre*, Institut Henri Poincaré (IHP), Paris, 16 March 2020
- “From Laws to Polynomial Identities: rewrapping Lehmer conjecture ”, *The Junior Seminar in Pure Mathematics*, KU Leuven, 11 December 2019
- “The integral isomorphism problem, a helping hand from (geometric) group theory”, *Algebra seminar UPV/EHU*, Bilbao, Spain, 17 April 2018
- “Polynomial identities through the eye of Kemer”, *Algebra seminar Haifa university*, Israel, 23 November 2017
- “(integral) Isomorphism Problem, a (geometric) group theory point of view”, *Algebra seminar Technion*, Haifa, Israel, 9 November 2017
- “A glimpse into the asymptotics of polynomial identities”, *Antwerp algebra seminar*, University of Antwerp, Belgium, 28 April 2017
- “A glimpse into the asymptotics of polynomial identities”, *Oberseminar Gruppen und Geometrie*, Bielefeld, Germany, 19 October 2016
- “Growth of Algebras and Groups”, *Junior Seminar in Analytic, Geometric and Topological Group Theory*, Louvain-La-Neuve, Belgium, 29 January 2015

(SELECTION OF) COMMISSIONS

2021-2023	Academische raad VUB <i>Representant of all OAP (=phd and post-docs) of the university inside the academic counsel</i>
2021-2023	Universiteitsraad VUB <i>Representant of the OAP of Faculty of Sciences inside the university counsel</i>
2023-2024	Assemblée de la Transition UCLouvain <i>group of 60 members from all structures of UCL selected to analyse the transition plan</i>
2023-2024	Tuchtcommissie <i>representant of all OAP of VUB inside the disciplinary committee</i>
2013-2017	Departementsraad <i>Representant of the teaching assistants inside VUB Math department counsel</i>
2015-2017	Faculteitsraad <i>Mathematics representant inside VUB Science and Bio-engineering faculty counsel</i>

SOME RESEARCH VISITS AND STAYS SINCE 2017

2024-3/5	SLMath (former MSRI), U.S.A, participation to program (2,5 months)
2023-5	CIRM, France, Research in Pairs with Ilaria Colazzo (one week)
2021-8	Oberwolfach, Germany, Research in Pairs with Doryan Temmerman (two weeks)
2021-11 & 2022-2 & 2023-1	ICMAT (Madrid), Spain, hosted by Leo Margolis (six weeks)
2021-6/7	Université de Paris (Diderot), France, hosted by Bernhard Keller (one month)
2020-9/11	Hausdorff Research Institute for Mathematics (HIM), Germany, participation to trimester program (2,5 months)
2018-4 & 2018-12 & 2019-3	University of the Basque Country, Spain, hosted by Urban Jezernik (seven weeks)
2018-3	University of Glasgow, hosted by Theo Raedschelders (one week)
2017-10/11	Techion- Israel institute of Technology, hosted by Eli Aljadeff (two months)
2017-6	City Univeristy London, hosted by Florian Eisele (one week)