José Pedro Alves Quintanilha

Personal information

Date of birth	17 June 1990
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Publications

- **The complex of hypersurfaces in a homology class**, joint with Gerrit Herrmann. To appear in Michigan Mathematical Journal. Pre-print: arXiv:2007.00522 [math.GT].

- **An algorithm to calculate generalized Seifert matrices**, joint with Stefan Friedl and Chinmaya Kausik. Published in Journal of Knot Theory and its Ramifications (2022), DOI: 10.1142/S0218216522500687. Pre-print: arXiv:2204.10004 [math.GT].

- **Stable integral simplicial volume of 3-manifolds**, joint with Daniel Fauser, Clara Löh and Marco Moraschini. Published in Journal of Topology (2021), DOI: 10.1112/topo.12193. Pre-print: arXiv:1910.06120 [math.GT].

Pre-prints

- **Canonical decompositions and algorithmic recognition of spatial graphs**, joint with Stefan Friedl, Lars Munser and Yuri Santos Rego. arXiv:2105.06905 [math.GT].

Organized events

- **GoTH Workshop: Groups of Thompson and their relatives**, OvGU-Magdeburg, 18 − 22 Sep 2023. Co-organized with Kai-Uwe Bux, Ilaria Castellano and Yuri Santos Rego.

Invited talks

- **An observation about 3-regular spatial graphs**, LKS Seminar, Universität Regensburg (25 Jul 2023).

- **Canonical decompositions and algorithmic recognition of spatial graphs**, Oberwolfach Workshop 2303: Low-dimensional Topology, Mathematisches Forschungsinstitut Oberwolfach (19 Jan 2023).

  An extended abstract is published in the Oberwolfach Report, DOI: 10.14760/OWR-2023-3 (p. 37).

- **Computing generalized Seifert matrices for closures of colored braids**, Geometry Seminar, Universidade de Coimbra (5 Jan 2023).

- **An overview of Sigma-invariants**, LKS Seminar, Universität Regensburg (2 Dec 2022).

- **An overview of Sigma-invariants**, Tea Seminar, Universität Münster (14 Nov 2022).

- **Studying 3-manifolds through the finite quotients of their fundamental groups**, Geometry Graduate Colloquium, ETH Zürich (22 Oct 2020).

- **Hypersurfaces representing a codimension-1 homology class**, AG Seminar, Karlsruher Institut für Technologie (23 Jan 2020).

- **Uma introdução à topologia e à teoria de nós**, Encontro Nacional de Estudantes de Matemática, Universidade do Porto (15 Apr 2019).

Employment history

Feb 2022 – *present*   Postdoctoral researcher at the University of Bielefeld
Member of the working group of Kai-Uwe Bux.

Education

May 2018 – Jan 2022   **PhD in Mathematics**
Universität Regensburg, Germany
Grade: *magna cum laude*
Supervised by Stefan Friedl and Clara Löh.

Doctoral dissertation: *Three slices of 3-manifold topology: spatial graphs, surface complexes and simplicial volumes*

Oct 2015 – Oct 2017   **MSc in Mathematics** (Area: Geometry and Topology)
Rheinische Friedrich-Wilhelms-Universität Bonn, Germany
Overall grade[1]: 1.4

I was awarded a scholarship by the German Academic Exchange Service (DAAD) for the school year 2015/16.

Master's thesis: *Curves on the boundary of handlebodies*, supervised by Sebastian Hensel.

Sep 2012 – Jul 2015   **BSc in Mathematics** (Minor in Mathematics)
University of Porto, Portugal
Grade average: 19 / 20

Sep 2007 – Jul 2012   **MSc in Bioengineering** (Biotechnology branch)
University of Porto, Portugal
Grade average: 16 / 20

Master's thesis: *The role of Lipocalin-2 on in vitro thymocyte differentiation*, supervised by Jorge Pinto.

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[1]Where $1 =$ Very Good, $2 =$ Good, $3 =$ Satisfactory, $4 =$ Sufficient, $5 =$ Non-sufficient.

Sep 2004 – Jul 2007	**Highschool diploma** (Biotechnology – Scientific path)
	Colégio Internato dos Carvalhos, Portugal
	Grade average: 18 / 20

Teaching

- Teaching assistant for Operations Research, taught by Werner Hoffmann (Winter sem. 2023/24).

- Teaching assistant for Geometry and Topology, taught by Stefan Bauer (Summer sem. 2023).

- Co-organizer of a student seminar on L^2-invariants, jointly with Lars Munser (Winter sem. 2020/21).

- Teaching assistant for Group Cohomology, taught by Clara Löh (Summer sem. 2019).

- Monitor for a summer school in Mathematics for highschool students at the University of Porto (Sep 2015).

Additional training in Mathematics

Nov 2014 – Sep 2015	**Fellow of the program Novos Talentos em Matemática**[2]
	Supervised by Peter Gothen.
	I wrote a report entitled *Hyperbolic Structures and the Teichmüller Space*.
Feb 2015 – May 2015	**CS188.1x: Artificial Intelligence** (BerkeleyX)
	Completed an online course offered by The University of California, Berkeley, through the edX e-learning platform.
Nov 2013 – Sep 2014	**Fellow of the program Novos Talentos em Matemática**
	Supervised by Samuel Lopes.
	I wrote a report entitled *Constructing a Basis for the W-Harmonic Polynomials*.

Additional information

- **Experience in Bioengineering**
  Internships at research centers: IPATIMUP (Porto, 2010), Université Paris V (2011), IBMC (Porto, 2012),
  Member of the organising committee for the II Symposium on Bioengineering (FEUP, 2009).

- **Classical music training**
  Completed the Complementary Piano Course at the Vilar do Paraíso Music Academy (2011).

- **Laguages:** Portuguese (native), English (fluent), German (intermediate), French (intermediate)

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[2]Translates to "New Talents in Mathematics". A program held by the Gulbenkian Foundation that awards outstanding undergraduate students with a scholarship and assigns them a mentor with whom to study advanced topics in mathematics or begin mathematical research.