Short CV

Gabriel Araújo

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Id and contact information

Name:	Gabriel Cueva Candido Soares de Araújo
Born:	February 20th, 1987
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Education

2012 – 2016	**PhD in Applied Mathematics**, University of São Paulo (USP). Thesis: *Regularity and solvability of linear differential operators in spaces of ultradistributions**. Advisor: Paulo D. Cordaro.
2010 – 2012	**MSc in Applied Mathematics**, University of São Paulo (USP). Dissertation: *Periodic motion planning of trajectories for control-affine driftless systems in compact Lie groups**. Advisor: Pedro A. Tonelli.
2006 – 2009	**BSc in Applied Mathematics** (with honors), University of São Paulo (USP). Dissertation 1: *Propositional calculus, lattice theory and fuzzy logic**. Dissertation 2: *A geometric approach to optimal control theory**. Advisor: Pedro A. Tonelli.

Positions

2018 – today	**Post-doc**, University of São Paulo (USP). Supervisor: Paulo L. Dattori da Silva.
2017 – 2018	**Post-doc**, University of São Paulo (USP). Supervisor: Paulo D. Cordaro.
2016 – 2017	**Student mediator**, UNIVESP. Production, analysis and evaluation of several pedagogical materials (lecture notes, homework and tests) for students majoring in Engineering and Mathematics Education at UNIVESP.
2014 – 2015	**Visiting scholar**, Temple University. Supervisor: Shiferaw Berhanu.
2008 – 2016	**Teaching assistant**, University of São Paulo (USP).

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*Available in Portuguese only.

Research

Main interests

1. Geometric analysis

2. Geometric theory of linear PDEs

3. Complex analysis in several variables

4. Geometric Control Theory

Ongoing projects

- Abelian involutive structures on compact Lie groups (with Max R. Jahnke).

- Global Gevrey hypoellipticity of tube structures (with Bruno de Lessa Victor and Paulo L. Dattori da Silva).

- Algebraic properties of rings of germs of solutions of locally integrable structures (with Luis F. Ragognette, Antonio V. da Silva Jr. and Vinícius Novelli da Silva).

- Global solvability of tube structures (with Igor A. Ferra, Max R. Jahnke and Luis F. Ragognette).

Research papers

1. Periodic trajectory tracking for control-affine driftless systems on compact Lie groups. *J. Dyn. Control. Syst.*, (23):557–579, 2020.
Available at: https://doi.org/10.1007/s10883-019-09468-z.

2. Global regularity and solvability of left-invariant differential systems on compact Lie groups. *Ann. Glob. Anal. Geom.*, 56(4):631–665, 2019.
Available at: https://doi.org/10.1007/s10455-019-09682-9.

3. Real-analytic solvability for differential complexes associated to locally integrable structures (with P. D. Cordaro). *J. Funct. Anal.*, 276(2):380–409, 2019.
Available at: https://doi.org/10.1016/j.jfa.2018.11.003.

4. Regularity and solvability of linear differential operators in Gevrey spaces. *Math. Nachr.*, 291:729–758, 2018.
Available at: https://doi.org/10.1002/mana.201600522.

Accepted for publication

1. Gevrey semiglobal solvability for a class of elliptic vector fields with degeneracies (with A. P. Bergamasco and P. L. Dattori da Silva). *Math. Nachr.*, 2022.

2. Global solvability and propagation of regularity of sums of squares on compact manifolds (with I. A. Ferra and L. F. Ragognette). *J. Anal. Math.*, 2022.

3. Global analytic hypoellipticity and solvability of certain operators subject to group actions (with I. A. Ferra and L. F. Ragognette). *Proc. Amer. Math. Soc.*, 2022.

Submitted

1. Global analytic hypoellipticity of involutive systems on compact manifolds (with P. L. Dattori da Silva and B. de Lessa Victor).

2. Global hypoellipticity of sums of squares on compact manifolds (with I. A. Ferra and L. F. Ragognette).

Grants and scholarships

2022 – today	Grant/award from São Paulo Reseach Foundation (FAPESP) and The Czech Science Foundation (GACR) agreement for proposal *Analytic and smooth regularity in CR geometry*. Project leaders: Paulo D. Cordaro and Ilya Kossovskiy.
2018 – today	Post-doc fellowship from São Paulo Reseach Foundation (FAPESP).
2014 – 2015	Graduate scholarship from Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) for "sandwich PhD" program at Temple University.
2012 – 2016	Graduate scholarship from Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) for PhD degree.
2010 – 2012	Graduate scholarship from Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) for MSc degree.
2007 – 2008	Undergraduate research scholarship from University of São Paulo (Programa Ensinar com Pesquisa).

Other achievements

2019	Approved in examination for position of Assistant Professor (MS-3) at the Department of Mathematics of Instituto de Ciências Matemáticas e de Computação in the University of São Paulo (ICMC-USP) (see notice/announcement ATAc 051/2019).
2018	Approved in examination for position of Assistant Professor (MS-3) at the Department of Computer Science and Mathematics of Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto in the University of São Paulo (FFCLRP-USP) (see notice/announcement ATAc 014/2017).

Teaching

1. As teaching assistant at University of São Paulo:

2016	Real Analysis for Master's in Applied Mathematics.
2012	Calculus in Several Variables for Mathematics.
2011	Control Theory for Applied Mathematics.
2010	Metric Spaces (summer course).
2009	Linear Algebra (summer course).
2008	Numerical Analysis for Mathematics Education.
2008	Introduction to Programming (summer course).

Academic supervision

1. Undergraduate research:

2020	Isadora Vieira Coelho da Silva. *Regularity and solvability of PDEs in Gevrey classes*. University of São Paulo.

Participation in academic committees

2021	Member of the Master's committee of Eliakim Cleyton Machado. Federal University of Paraná.

Conferences and seminars organized

2020 – today	Organizer of the webinar 'Linear PDEs and related topics'. Joint University of São Paulo – Federal University of Paraná.
2020	Organizer of the session on Linear PDEs in the conference 'ICMC Summer Meeting on Differential Equations', held in São Carlos, Brazil.
2019	Member of the organizing committee of the conference 'X Workshop on Geometric Analysis of PDEs and Several Complex Variables', held in Serra Negra, Brazil.
2012 – 2013	Organizer of the 'ZFC Fan Club' student seminar. University of São Paulo.

Talks and presentations at conferences

2021	33o. Colóquio Brasileiro de Matemática (online).
2021	ICMC Summer Meeting on Differential Equations (online).
2019	II SPED – Simpósio Paranaense em Equações Diferenciais. Curitiba, Brazil.
2019	Encontro de Análise Harmônica. Porto Alegre, Brazil.
2019	XII Simpósio de Equações Diferenciais. Curitiba, Brazil.
2018	Symposium on Harmonic Analysis and Geometric Measure Theory. Ribeirão Preto, Brazil.
2018	International Workshop on Partial Differential Equations and Complex Analysis. São Carlos, Brazil.
2018	7th IST-IME: a conference in "Analysis and Applications". São Paulo, Brazil.
2017	IX Workshop on Geometric Analysis of PDEs and Several Complex Variables. Serra Negra, Brazil.
2017	Complex Geometry and PDEs. Beirut, Lebanon.
2017	ICMC Summer Meeting on Differential Equations. São Carlos, Brazil.
2015	VIII Workshop on Geometric Analysis of PDEs and Several Complex Variables. Serra Negra, Brazil.
2007	III Simpósio de Iniciação Científica e Pós-Graduação do IME-USP. São Paulo, Brazil.
2007	XV Simpósio Internacional de Iniciação Científica (SIICUSP). São Carlos, Brazil.

Other talks

2021	'Analysis seminar' at Temple University (online).
2021	In the graduate course 'MM843 – Topics in PDEs II' at Unicamp (online).
2015	'Complex geometry seminar' at Temple University. Philadelphia, U.S.A.
2014	'Graduate student seminar' at Temple University. Philadelphia, U.S.A.
2011 – 2013	'ZFC Fan Club' student seminar at University of São Paulo. São Paulo, Brazil.

Languages

Portuguese	Native
English	Fluent

My profiles in some electronic platforms

- Lattes CV

- ORCID

- Google Scholar

- Publons Web of Science

- MathSciNet

- zbMATH

- Mathematics Genealogy Project

- arXiv