

ROBERTO DE A. CAPISTRANO-FILHO

<i>Born</i>	October 18, 1985. João Pessoa, Paraíba
<i>Nationality</i>	Brazilian
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RESEARCH INTERESTS

<i>General</i>	Applied mathematics and PDEs
<i>Emphasis</i>	Well-posedness, control and stabilization of PDEs

PROFESSIONAL EXPERIENCE

<i>Assistant Professor</i>	<i>Since 2015</i>	DEPARTMENT OF MATHEMATICS, UNIVERSIDADE FEDERAL DE PERNAMBUCO, BRAZIL.
<i>Tenured since 2018</i>		DEPARTMENT OF MATHEMATICS, UNIVERSIDADE FEDERAL DE PERNAMBUCO, BRAZIL.
<i>Postdoc</i>	<i>Mar 2014 - Nov 2015</i>	DEPARTMENT OF MATHEMATICAL SCIENCES, UNIVERSITY OF CINCINNATI, USA.
<i>Postdoc</i>	<i>Jan 2023 - Jul 2023</i>	DEPARTMENT OF MATHEMATICAL, VIRGINIA TECH, USA.

EDUCATION

<i>Ph.D. in Mathematics</i>	<i>2012–2014</i>	Université de Lorraine, France Thesis: <i>Contrôle d'équations Dispersives pour les Ondes de Surfaces.</i> Adviser 1: Prof. Lionel ROSIER Adviser 2: Prof. Ademir PAZOTO
<i>Ph.D. in Mathematics</i>	<i>2010–2014</i>	Universidade Federal do Rio de Janeiro, Brazil <i>Control of dispersive equations for surface waves.</i> Adviser 1: Prof. Ademir PAZOTO Adviser 2: Prof. Lionel ROSIER
<i>M. Sc. in Mathematics</i>	<i>2008–2010</i>	Universidade Federal da Paraíba, Brazil <i>Well-posedness and stability of Kawahara equation.</i> Adviser: Prof. Fagner ARARUNA
<i>Bachelor degree</i>	<i>2004–2008</i>	Universidade Federal da Paraíba, Brazil B. Sc. in Mathematics.

AWARDS AND ACADEMIC DISTINCTIONS

<i>2025</i>	Travel grant MCA 2025
<i>2024–2026</i>	Ewha Global Fellow
<i>2022–2025</i>	Level-2 Researcher - CNPq, Brazil

2022	Chebyshev grant - ICM St. Petersburg, International Mathematical Union
2018-2021	Level-2 Researcher - CNPq, Brazil
2018	Open arms grant - ICM Rio de Janeiro, IMPA - SBM

EVALUATION COMMITTEES

MASTERS DEGREE

Feb 2025	Matheus Luiz da Silva Oliveira, Masters Degree in Mathematics, Universidade Federal de Pernambuco, Brazil.
Jul 2024	Érick Caetano Alves do Nascimento, Masters Degree in Mathematics, Universidade Federal de Pernambuco, Brazil.
Jul 2024	Jefferson Henriques Bezerra, Masters Degree in Mathematics, Universidade Federal de Pernambuco, Brazil.
Oct 2021	Juan Ricardo Muñoz Galeano, Masters Degree in Mathematics, Universidade Federal de Pernambuco, Brazil.
Mar 2020	Nemuel Rocha Lima, Masters Degree in Mathematics, Universidade Federal de Alagoas, Brazil.
Mar 2018	Elthon Matheus Araújo, Universidade Federal de Pernambuco, Brazil.
Mar 2018	Hugo Deleon Pereira de Medeiros, Universidade Federal de Pernambuco, Brazil.
Apr 2017	Jose Ribeiro de Sousa Neto, Masters Degree in Mathematics, Universidade Federal da Paraíba, Brazil.

PHD DEGREE

Nov 2024	Juan Ricardo Munoz Galeano, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
Aug 2024	Jackellyny Dassy do Nascimento Carvalho, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
Aug 2024	Ricardo Freire da Silva, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
Jul 2024	Dieme Pereira da Silva, PhD in Mathematics, Universidade Federal do Piauí, Brazil.
Aug 2023	Isadora Maria de Jesus, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
Aug 2023	Luan Soares de Sousa, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
Aug 2020	Milena Monique de Santana Gome, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
Aug 2020	Milena Monique de Santana Gome, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
Feb 2019	Charles Braga Amorim, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
Mar 2018	Lorena Brizza Soares Freitas, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.

<i>Feb 2017</i>	Fernando Andres Gallego Restrepo, PhD in Mathematics, Universidade Federal do Rio de Janeiro, Brazil.
<i>Nov 2016</i>	Pammela Queiroz de Souza, PhD in Mathematics, Universidade Federal da Paraíba, Brazil.

PHD QUALIFYING EXAMS

<i>Set 2022</i>	Jandeilson Santos da Silva, qualifying exams, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
<i>Set 2022</i>	Juan Ricardo Muñoz Galeano, qualifying exams, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
<i>Jun 2021</i>	Ricardo Freire da Silva, qualifying exams, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
<i>Jun 2021</i>	Jackellyny Dassy do Nascimento Carvalho, qualifying exams, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
<i>Mar 2021</i>	Nemuel Rocha, qualifying exams, PhD in Mathematics, Universidade Federal de Alagoas, Brazil.
<i>Jul 2020</i>	Luan Soares de Sousa, qualifying exams, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
<i>Jul 2020</i>	Marcos Paulo da Rocha, qualifying exams, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
<i>Dec 2018</i>	André Ventura Henriques dos Santos, qualifying exams, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
<i>Aug 2018</i>	Larissa Santos Machado, qualifying exams, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
<i>Mar 2018</i>	Francisco Gilberto de Souza, qualifying exams, PhD in Mathematics, Universidade Federal de Alagoas, Brazil.
<i>May 2017</i>	Omar Stevenson Guzmán Rea, qualifying exams, PhD in Mathematics, Universidade Federal de Pernambuco, Brazil.
<i>Aug 2016</i>	Charles Braga Amorim, qualifying exams, Ph.D. in Mathematics, Universidade Federal de Pernambuco, Brazil.

SELECTION COMMITTEES

<i>Mar 2019</i>	R. A. Capistrano-Filho, A. Corcho and M. Panthee, public selection of professors for Department of Mathematics, 2019, Universidade Federal de Alagoas, Brazil.
<i>Nov 2018</i>	R. A. Capistrano-Filho, D. J. Araujo and M. A. Soares, public selection of professors for Department of Mathematics, 2018, Universidade Federal de Pernambuco, Brazil.
<i>Mar 2018</i>	R. A. Capistrano-Filho, F. W. Cruz and R. T. Bortoloti, public selection distance learning tutors, 2018, Universidade Federal de Pernambuco, Brazil.
<i>Mar 2018</i>	J. Angulo, E. Barbosa and R. A. Capistrano-Filho, visiting professor, Universidade Federal de Alagoas, Brazil.
<i>May 2018</i>	R. A. Capistrano-Filho, K. I. M. Oliveira and F. M. A. Vitorio, public selection of assistant professor, 2018, Universidade Federal de Alagoas, Brazil.

SELECT PUBLICATIONS

10. R. A. Capistrano-Filho, T. Y. Tanaka, Controls insensitizing the norm of solution of a Schrödinger type system with mixed dispersion, *Journal of Differential Equations*, v. 416, p. 357-395 (2025).
9. R. A. Capistrano-Filho, B. Chentouf, V. H. Gonzalez Martinez and J. R. Muñoz, On the boundary stabilization of the KdV-KdV system with time-dependent delay. *Nonlinear Analysis - Real World Application*, v. 79, p. 104122 (2024)
8. R. A. Capistrano-Filho, V. H. Gonzalez Martinez and J. R. Muñoz, Stabilization of the Kawahara-Kadomtsev-Petviashvili equation with time-delayed feedback, *Proceedings of the Royal Society of Edinburgh Section A: Mathematics*, 1-27. doi:10.1017/prm.2023.92 (2023)
7. R. A. Capistrano-Filho, E. Cerpa and F. Gallego, Rapid Exponential Stabilization of a Boussinesq System of KdV-KdV Type, *Communications in Contemporary Mathematics*, Vol. 25, No. 03, 2150111 (2023)
6. R. A. Capistrano-Filho and A. Pampu, The fractional Schrödinger equation on compact manifolds: Global controllability results, *Mathematische Zeitschrift*, 301, pages 3817–3848 (2022).
5. R. A. Capistrano-Filho and M. Cavalcante, Stabilization and control for the biharmonic Schrödinger equation, *Appl. Math. Optim.* 84 (2021), 103-144.
4. R. A. Capistrano-Filho, A. F. Pazoto, and L. Rosier, Control of Boussinesq system of KdV-KdV type on a bounded interval, *ESAIM Control Optimization and Calculus Variations* 25 (2019) 58, 1-55.
3. R. A. Capistrano-Filho, F. A. Gallego and A. F. Pazoto, On the well-posedness and large-time behavior of higher order Boussinesq system, *Nonlinearity* 32 (2019) 1852–1881.
2. R. A. Capistrano-Filho and F. Gallego, Asymptotic behavior of Boussinesq system of KdV-KdV type, *J. Differential Equations* 265 (2018) 2341–2374.
1. M. C. Caicedo, R. A. Capistrano-Filho and B.-Y. Zhang, Neumann boundary controllability of the Korteweg-de Vries equation on a bounded domain, *SIAM Journal on Control and Optimization*, v. 55, p. 3503–3532, (2017).

ADVISING AND SUPERVISION

POST-DOCTORAL SUPERVISION

2021-2022	Victor Hugo Gonzalez Martinez - Universidade Federal de Pernambuco.
2020-2021	Andressa Gomes - Universidade Federal de Pernambuco.
2019-2021	Ademir Benteus Pampu - Universidade Federal de Pernambuco.

PHD STUDENTS

2022-	Jandeilson Santos da Silva - expected to 2025 - Universidade Federal de Pernambuco.
2021-2024	Juan Ricardo Munoz Galeano - Control and Stabilization of KdV-KdV and KP type systems - Universidade Federal de Pernambuco.
2022-2024	Jackellyny Dassy do Nascimento Carvalho - Control and stabilization for the nonlinear Schrödinger equation - Universidade Federal de Pernambuco.
2019-2023	Isadora Maria de Jesus - Well-posedness and stabilization theory for dispersive systems - Universidade Federal de Pernambuco.

- 2019-2023 Luan Soares - Some control results for the KdV-type equation - Universidade Federal de Pernambuco.
- 2016-2020 Milena Monique de Santana Gomes - Well-posedness and controllability of Kawahara equation in weighted Sobolev spaces - Universidade Federal de Pernambuco.

MASTERS STUDENTS

- 2022-2024 Érick Caetano Alves do Nascimento - Propriedade de controle ótimo tipo bang-bang para equação de Korteweg-de Vries-Burgers - Universidade Federal de Pernambuco.
- 2022-2024 Jefferson Henriques Bezerra - Controle nulo da equação do calor unidimensional: Uma análise matemática e numérica - Universidade Federal de Pernambuco.
- 2020-2022 Juan Ricardo Muñoz Galeano - Well-posedness and controllability of the KdV-KdV type system- Universidade Federal de Pernambuco.
- 2016-2018 Hugo Deleon Pereira de Medeiros - Stabilization for a coupled system of KdV-KdV type system - Universidade Federal de Pernambuco.
- 2016-2018 Elthon Matheus Araújo - Well-posedness, controllability, and stabilization of KdV equation on the periodic domain - Universidade Federal de Pernambuco.

UNDERGRADUATE STUDENTS

- 2022-2023 Raffael Marinho de Arruda Feitosa - ODEs and applications - Universidade Federal de Pernambuco.
- 2021-2022 Daniel Alves de Lima - Control theory for PDEs- Universidade Federal de Pernambuco.
- 2020-2021 Guilherme Araújo - ODEs and applications in control theory - Universidade Federal de Pernambuco.
- 2020-2021 Mateus Ferreira de Melo - Control theory and PDEs - Universidade Federal de Pernambuco.
- 2019-2020 Mateus Ferreira de Melo - Measure and integration - Universidade Federal de Pernambuco.
- 2018-2019 Mateus Ferreira de Melo - Functional analysis and applications - Universidade Federal de Pernambuco.
- 2018-2019 Rafael Marques Cavalcante Neto - Control theory applied in ODEs- Universidade Federal de Pernambuco.
- 2017-2018 Mateus Ferreira de Melo - Control theory applied in ODEs - Universidade Federal de Pernambuco.

RESEARCH GRANTS

2024 – 2027 · COFECUB/CAPES - Grant: 175.000,00 Brazilian real
Agency: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior

2023 – 2026 · Chamada CNPq/MCTI N° 10/2023 – Faixa A – Grupos Emergentes (Universal) - Grant: 82.500,00 Brazilian real
Agency: CNPq

2022 – 2024 · Chamada CNPq No 26/2021 – Bolsas no Exterior - Grant: 100.000,00 Brazilian real

Agency: CNPq

2022 – 2025 · Well-posedness, control, and stabilization for non-linear dispersive systems - Grant: 59.400,00 Brazilian real

Agency: National Council for Scientific and Technological Development

2021 – 2022 · Control Theory and Microlocal Analysis with Applications in Partial Differential Equations (MathAmSud) - Grant: 175.000,00 Brazilian real

Agency: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior

2019 – 2021 · Asymptotic behavior and control properties for nonlinear dispersive systems - Grant: 20.000,00 Brazilian real

Agency: National Council for Scientific and Technological Development

2018 – 2021 · Well-posedness, control, and stabilization for non-linear dispersive systems - Grant: 39.600,00 Brazilian real

Agency: National Council for Scientific and Technological Development

OTHER INFORMATION

Scientific Short Visits

- Universidad de Chile, Santiago, Chile.
- Ewha Womans University - South Korea
- Universidad Nacional de Colombia - Sede Manizales, Colombia
- Universidad Del Valle, Cali, Colombia.
- Universidade Federal de Minas Gerais, Minas Gerais, Brazil.
- Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil.
- Universidade Federal de Alagoas, Maceió, Brazil.
- University of Cincinnati, USA.
- Sichuan International Studies University, SISU, China.
- Université de Strasbourg, UNISTRA, France.

ORGANIZATION OF EVENTS, SYMPOSIUM AND SECTIONS

<i>Aug 2024</i>	Recife Meeting on Mathematics - Recife - Pernambuco - Brazil.
<i>Mar 2023</i>	Mini-symposium on Recent developments on partial differential equations and applications at SIAM Southeastern Atlantic Section Annual Meeting - Blacksburg - Virginia - USA
<i>Mar 2023</i>	Recife Summer Workshop on Differential Geometry - Recife - Pernambuco - Brazil.
<i>Feb 2023</i>	I Symposium of Nonlinear Partial Differential Equations at UFPE - Recife - Pernambuco - Brazil.
<i>Jan 2023</i>	Special section "Control and Stabilization for Partial Differential Equations" on LACIAM - Rio de Janeiro - Brazil.
<i>Jun 2021</i>	III Summer Workshop of PDEs and Dynamical Systems - Recife - Pernambuco - Brazil.
<i>Feb 2020</i>	II Summer Workshop of PDEs and Dynamical Systems - Recife - Pernambuco - Brazil.

- Feb 2020* I Summer Workshop of Geometry - Brazil.
- Feb 2019* I Summer Workshop of PDEs and Dynamical Systems - Recife - Pernambuco - Brazil.
- Oct 2018* Colóquio Pernambucano de Matemática - Recife - Pernambuco - Brazil.
- Feb 2017* Recife Workshop on Control and Stabilization of PDEs - Recife - Pernambuco - Brazil.

TALKS

- Jun 2024* Invited Speaker, SIAM Conference on Nonlinear Waves and Coherent Structures 2024 - *abcd-Boussinesq Model: Control and Stability Results* - Belo Horizonte - Brazil.
- Feb 2024* Invited Speaker, III Workshop de Equações Dispersivas na UFMG - *Fourier transform restriction phenomena and applications to control of dispersive equations* - Belo Horizonte - Brazil.
- Nov 2023* Invited Speaker, Twelfth Ohio River Analysis Meeting 2023 - *Fourier transform restriction phenomena and applications to control of dispersive equations* - Cincinnati - USA.
- Nov 2022* Invited Speaker, 5th Workshop on Nonlinear Dispersive Equations 2022 - *Bourgain space and its applications in Control Theory* - Belo Horizonte - Brazil.
- Nov 2019* Invited Speaker, 4th Workshop on Nonlinear Dispersive Equations 2019 - *Well-posedness of the fourth order nonlinear Schrödinger equation in non-standard domains* - Rio de Janeiro - Brazil.
- Jul 2019* Invited Speaker, 1st Joint Meeting Brazil-France in Mathematics 2019 - *Stability and Global Questions for Biharmonic Schrödinger Equation* - Rio de Janeiro - Brazil.
- Feb 2019* Short communication, ICMC Summer Meeting on Differential Equations - *Properties of the biharmonic nonlinear Schrödinger equation* - São Carlos - São Paulo - Brazil.
- Dec 2018* Invited Speaker, Workshop on Inverse and control problems for physical systems ICoPS 2018 - *Properties of the biharmonic nonlinear Schrödinger equation* - Valparaíso - Chile.
- Aug 2018* Short communication, ICM - *Global results on control and stabilization of fourth order NLS on $\mathbb{T}$* - Rio de Janeiro - Rio de Janeiro - Brazil.
- Dec 2017* Short communication, ICAMI - *Critical Length Phenomenon For a Class of Dispersive Systems* - San Andres - Colombia.
- Jun 2016* Short communication, Nonlinear PDE's @ IMPA - *Neumann boundary controllability of the Korteweg-de Vries equation* - Rio de Janeiro - Rio de Janeiro - Brazil.
- Jul 2015* Invited Speaker, Theoretical, Numerical and Experimental Studies of Nonlinear Dispersive Water Waves - *Internal controllability results of the Korteweg-de Vries equation* - Tsinghua Sanya International Mathematics Forum - Sanya - China.
- Jan 2015* Invited Speaker, Workshop on Control System and Identification Problems - *Boundary controllability of the Korteweg-de Vries equation* - Valparaíso - Chile.
- Oct 2014* Short communication, The 34th Southeastern Atlantic Regional Conference on Differential Equation - *Some control results for the Boussinesq system of KdV-KdV type* - University of Memphis. Memphis - USA.

REFERENCES

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 67084 Strasbourg Cedex, France
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 Universidade Federal do Rio de Janeiro, Instituto de Matemática
 Cidade Universitária, Ed. Centro de Tecnologia, Bloco C - sala 111B
 Ilha do Fundão 21945-970 - Rio de Janeiro, RJ - Brasil
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Prof. Bingyu Zhang
 Department of Mathematical Sciences, University of Cincinnati
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 Cincinnati, OH - 45221 United States
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Prof. Shu-Ming Sun
 Department of Mathematics
 460 McBryde Hall, Virginia Tech
 225 Stanger Street
 Blacksburg, VA 24061-1026 email: sun@math.vt.edu

March 14, 2025