

# João Henrique Andrade

Born: July 14th 1994

Nationality: Brazilian

Phone: +5583987441845

Universidade de São Paulo

Instituto de Matemática e Estatística

São Paulo, SP 05508-090 Brazil

email: [andradejh@ime.usp.br](mailto:andradejh@ime.usp.br)

site: [www.ime.usp.br/~andradejh](http://www.ime.usp.br/~andradejh)

## Current positions

2023 *Adjoint Professor*, Instituto de Matemática e Estatística, Universidade de São Paulo

## Past positions

2022-2023 *Postdoctoral Researcher*, Department of Mathematics, University of British Columbia  
Supervisor: Prof. Juncheng Wei  
Scholarship: São Paulo Research Foundation # 2021/15139-0

2021-2023 *Postdoctoral Researcher*, Instituto de Matemática e Estatística, Universidade de São Paulo  
Supervisor: Prof. Paolo Piccione  
Scholarship: São Paulo Research Foundation # 2020/07566-3

## Areas of specialization

Analysis of Partial Differential Equations • Differential Geometry

## Education

2016-2020 DOCTOR, in Mathematics, Universidade Federal da Paraíba (with visiting period at Princeton University)  
Thesis: Qualitative properties for solutions to strongly coupled fourth order systems  
Advisor: Prof. João Marcos Bezerra do Ó  
Co-advisor: Fernando Codá Marques (Princeton University)  
Scholarship: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) and Fulbright Commission in Brazil

2012-2016 BACHELOR DEGREE, in Mathematics, Universidade Federal da Paraíba  
Dissertation: Stability of weak convergence under the action of nonlinear maps  
Advisor: Prof. João Marcos Bezerra do Ó  
Scholarship: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)

## Distinctions

2019 Fulbright Scholarship  
2016 Academic Laureate

## Invited talks

2026 Summer Conference in Mathematics, João Pessoa (Brazil)  
2026 Summer Meeting on Differential Equations, São Carlos (Brazil)  
2025 Symposium on Analysis, Partial Differential Equations and Applications, São Paulo (Brazil)  
2025 XIII Workshop in Nonlinear Differential Equations (Brazil-Italy), Modena (Italy)  
2025 Workshop on Geometric Analysis, Würzburg (Germany)  
2024 VII Congresso Latino-Americano y del Caribe de Matemática, João Pessoa (Brazil)  
2024 Conference in Honor of Paolo Piccione's 60th Birthday, São Paulo (Brazil)  
2024 VIII Encontro de Matemática Pura e Aplicada, Campina Grande (Brazil)  
2023 XII Workshop on Nonlinear Differential Equations, Brasília (Brazil)  
2021 IX WENLU – Workshop on Nonlinear PDEs, Functional and Geometric Analysis, João Pessoa (Brazil)  
2021 I Webinar de Jovens Pesquisadores em Matemática, Rio de Janeiro (Brazil)  
2021 XXXIII Jornada de Matemática de la Zona Sur, Temuco (Chile)  
2019 VIII Workshop on Nonlinear PDEs and Geometric Analysis, João Pessoa (Brazil)

## Seminars

2024 Seminário de Geometria Diferencial, Instituto de Matemática Pura e Aplicada (Brazil)  
2024 Seminário de EDPs e Análise Geométrica, Universidade Federal da Paraíba (Brazil)  
2024 Colóquio do Departamento de Matemática, Universidade Federal de Pernambuco (Brazil)  
2024 Seminário de Geometria Diferencial AMSUL/AMSUR, Universidade de Campinas (Brazil)  
2024 Seminário de Geometria São Paulo, Universidade de Campinas (Brazil)  
2024 Colóquio do Instituto de Matemática e Estatística, Universidade de São Paulo (Brazil)  
2023 Analysis Seminar, Zhejiang Normal University (China)  
2022 Geometric Analysis Seminar, College University of New York (USA)  
2022 Differential Geometry Seminar, University of British Columbia (Canada)  
2022 Webinário de EDPs e Análise Geométrica, Universidade Federal da Paraíba (Brazil)  
2021 Seminário de Análise, Universidade de Brasília (Brazil)  
2021 Oberserminar, Universität der Würzburg (Germany)  
2020 Graduate Student Seminar, Princeton University (USA)

## Events

2023 Generalized Complex Geometry, Hangzhou (China)  
2023 Nonlinear PDEs, Madrid (Spain)  
2019 Conference in Celebration of the 70th Birthday of Shing-Tung Yau, Bethlehem (USA)  
2019 XI Summer Workshop in Mathematics, Brasília (Brazil)

## Publications

### PUBLISHED AND ACCEPTED PAPERS

- 2026 A general nonuniqueness result for Yamabe-type problems for conformally variational Riemannian invariants  
*J. Geom. Anal.* (2026), to appear  
(with J. S. Case, P. Piccione, and J. Wei) [arXiv:2310.15798](https://arxiv.org/abs/2310.15798) [[math.DG](#)]
- 2026 Nonhomothetic complete periodic metrics with constant scalar curvature  
*Proc. Amer. Math. Soc.* (2026), to appear  
(with J. S. Case, P. Piccione, and J. Wei) [arXiv:2510.04351](https://arxiv.org/abs/2510.04351) [[math.DG](#)]
- 2026 From bubbles to clusters: Multiple solutions to the Allen-Cahn system  
*J. Differ. Equ.* **464** (2026) Paper No. 114189, 43pp  
(with D. Corona, S. Nardulli, P. Piccione, and R. Ponciano) [doi.org/10.1016/j.jde.2026.114189](https://doi.org/10.1016/j.jde.2026.114189)
- 2025 Asymptotics for positive singular solutions to subcritical sixth order equations  
*Nonlinear Anal.* **225** (2025) Paper No. 113757, 28 pp  
(with J. Wei) [doi.org/10.1016/j.na.2025.113757](https://doi.org/10.1016/j.na.2025.113757)
- 2024 Compactness of singular solutions to the sixth order GJMS equation  
*Math. Ann.* **391** 4881–4909 (2024)  
(with J. M. do Ó, J. Ratzkin, and J. Wei) [doi.org/10.1007/s00208-024-02991-w](https://doi.org/10.1007/s00208-024-02991-w)
- 2024 Asymptotics for singular solutions to conformally invariant fourth order systems in the punctured ball  
*J. Differ. Equ.* **413** (2024), 190-239  
(with J. M. do Ó) [doi:10.1016/j.jde.2024.08.029](https://doi.org/10.1016/j.jde.2024.08.029)
- 2024 Constant  $Q$ -curvature metrics with Delaunay ends: the nondegenerate case  
*Ann. Sc. norm. super. Pisa - Cl. sci.* **25** (2024), no 2, 965-1031  
(with R. Caju, J. M. do Ó, J. Ratzkin, and A. S. Santos) [doi:10.2422/2036-2145.202111001](https://doi.org/10.2422/2036-2145.202111001)
- 2024 Multiplicity of solutions to the multiphasic Allen–Cahn–Hilliard system with a small volume constraint on closed parallelizable manifolds  
*J. Funct. Anal.* **286** (2024), no 1, Paper No. 110345, 61 pp  
(with J. Conrado, S. Nardulli, P. Piccione, and R. Resende) [doi:10.1016/j.jfa.2024.110345](https://doi.org/10.1016/j.jfa.2024.110345)
- 2024 Complete metrics with constant fractional higher order  $Q$ -curvature on the punctured sphere  
*J. Geom. Anal.* **34** (2024), no 1, Paper No. 6, 77 pp  
(with J. Wei and Z. Ye) [doi:10.1007/s12220-023-01444-1](https://doi.org/10.1007/s12220-023-01444-1)

- 2023 Some results on strongly coupled systems  
*Mat. Contemp.* **54** (2023), 157–172  
(with J. M. do Ó) [doi:10.1007/10.21711/231766362023/rmc547](https://doi.org/10.21711/231766362023/rmc547)
- 2023 Qualitative properties for solutions to conformally invariant fourth order critical systems  
*Discrete Contin. Dyn. Syst.* **43**(2023), no 8, 3008–3042  
(with J. M. do Ó) [doi:10.3934/dcds.2023038](https://doi.org/10.3934/dcds.2023038)
- 2022 Qualitative properties for solutions to subcritical fourth order systems  
*Nonlinearity* **35** (2022), no 10, 5249–5296  
(with J. M. do Ó) [doi:10.1088/1361-6544/ac8a38](https://doi.org/10.1088/1361-6544/ac8a38)
- 2022 Compactness within the space of complete, constant  $Q$ -curvature metrics on the sphere with isolated singularities  
*Int. Math. Res. Not. IMRN* (2022), no 21, 17282–17302  
(with J. M. do Ó and J. Ratzkin) [doi:10.1093/imrn/rnab306/6413800](https://doi.org/10.1093/imrn/rnab306/6413800)
- SUBMITTED PAPERS
- 2026 Quantitative stability for the Trudinger–Moser inequality  
(with J. F. de Oliveira, J. M. do Ó, A. C. Macedo, and J. Ratzkin) [arXiv:2605.03668](https://arxiv.org/abs/2605.03668) [math.AP]
- 2026 Survey on topological methods for Allen–Cahn equations and systems  
(with S. Nardulli and R. Ponciano) [arXiv:2604.23920](https://arxiv.org/abs/2604.23920) [math.AP]
- 2025 Classification of fractional, singular Yamabe metrics on a twice-punctured sphere I  
(with A. DelaTorre, J.M. do Ó, J. Ratzkin, and J. Wei) [arXiv:2511.05225](https://arxiv.org/abs/2511.05225) [math.DG]
- 2025 Local asymptotics for singular solutions to critical Hartree equations  
(with T. Feng, P. Piccione, and M. Yang) [arXiv:2505.19021](https://arxiv.org/abs/2505.19021) [math.AP]
- 2024 Quantitative stability of the total  $Q$ -curvature near minimizing metrics  
(with T. König, J. Ratzkin, and J. Wei) [arXiv:2407.06934](https://arxiv.org/abs/2407.06934) [math.AP]
- 2023 Nonuniqueness results for constant sixth order  $Q$ -curvature metrics on spheres with higher dimensional singularities  
(with P. Piccione and J. Wei) [arXiv:2306.00679](https://arxiv.org/abs/2306.00679) [math.DG]
- 2022 Classification for positive singular solutions to critical sixth order equations  
(with J. Wei) [arXiv:2210.12491](https://arxiv.org/abs/2210.12491) [math.AP]

## Language Skills

*Portuguese*, Mother language

*English*, Fluent speaker

*Spanish*, Fluent speaker

*French*, Intermediary speaker

*German*, Intermediary speaker