

# Ricardo C. Freire

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## EDUCATION

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- **Ph.D. in Mathematics.**

**Instituto de Matemática Pura e Aplicada (IMPA)**

**Rio de Janeiro, Brazil**

*Title Thesis: On Local Energy Decay and Propagation of Regularity for Dispersive Models.*

*Aug., 2022*

Advisor: Felipe Linares

- **M.Sc in Mathematics.**

**Universidade Federal do Ceará (UFC)**

**Fortaleza, Brazil**

*Title Thesis: Stable Currents and application to problems in Real Geometry*

*Dec., 2016*

Advisor: José Fábio Bezerra Montenegro

- **Bs.c Mathematics.**

**Universidade Federal do Ceará (UFC)**

**Fortaleza, Ceará**

*Advisor: José Fábio Bezerra Montenegro*

*Dec., 2014*

## WEB

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- ResearchGate: <https://www.researchgate.net/profile/Ricardo-Freire-4>.
- Lattes: <http://lattes.cnpq.br/5098283139683751>

## RESEARCH INTEREST

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- I am mainly interested in the analysis of partial differential equations, especially nonlinear dispersive equations and the relation between the dispersion and topics in Harmonic Analysis. More precisely, research in Local and Global Well-Posedness, Scattering, Blow-up, Asymptotic Behavior, Propagation of Regularity of solutions among others areas of special interest.

## ACCEPTED PAPERS

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- **Ricardo. C. Freire, Argenis J. Mendez, Oscar Riaño,** *On some regularity properties for the dispersive generalized Benjamin-Ono-Zakharov-Kuznetsov Equation.* Journal of Differential Equations, Volume 322, 2022, Pages 135-179, ISSN 0022-0396, <https://doi.org/10.1016/j.jde.2022.03.025>.
- **R. Freire, F. Linares, C. Muñoz, and G. Ponce,** *On Local Energy decay for solution of the Benjamin-Ono equation.* To appear in Ann. Inst. H. Poincaré C Anal. Non Linéaire.

## In Progress

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- **R. Freire** *On the Behavior of the Regularity and Decay Properties of Solutions of General Dispersive Models.*
- **R. Freire, T. Souza** *Local well-posedness of a nonlinear model for long internal waves in a context of a deep rotating fluid*

## LANGUAGE

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- **English** [Fluent]
- **Portuguese** [Native]

- **Spanish** [Intermediate]

## PRESENTATIONS AND POSTERS

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- ICMC Summer Meeting on Differential Equations. Propagation of regularity for the dispersive 2D generalized Benjamin-Ono-Zakharov-Kuznetsov Equation. 2020.
- ICMC Summer Meeting on Differential Equations. Propagation of regularity for the dispersive 2D generalized Benjamin-Ono-Zakharov-Kuznetsov Equation. 2021.
- Fifth Workshop on Nonlinear Dispersive Equations, UFMG. Energy decay for classes of nonlocal dispersive equations. 2022

## ACADEMIC EXPERIENCE

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- **Universidade Federal do Ceará**

**Teaching Assistant for Linear Algebra I**

*Teacher: Ana Shirley Ferreira da Silva*

**Fortaleza, Ceará**

*Aug. - Dec., 2015*

- **Instituto Nacional de Matemática Pura e Aplicada**

**Teaching Assistant for "Spectral Theory"**

*Instructor Professor: Felipe Linares*

**Rio de Janeiro, Brazil**

*March - June, 2020*

**Instructor Professor**

*Partial Differential Equations*

**Rio de Janeiro, Brazil**

*Aug. - Dec., 2020*

**Teaching Assistant for "Real Analysis"**

*Instructor Professor: Carlos Gustavo*

**Rio de Janeiro, Brazil**

*Jan - Feb., 2021*

**Teaching Assistant for "Spectral Theory"**

*Instructor Professor: Felipe Linares*

**Rio de Janeiro, Brazil**

*March - June, 2021*

**Teaching Assistant for "Partial Differential Equations"**

*Instructor Professor: Felipe Linares*

**Rio de Janeiro, Brazil**

*Aug. - Dec., 2021*

**Teaching Assistant for "Real Analysis"**

*Instructor Professor: Alcides Lins*

**Rio de Janeiro, Brazil**

*Jan - Feb., 2022*

**Teaching Assistant for "Spectral Theory"**

*Instructor Professor: Felipe Linares*

**Rio de Janeiro, Brazil**

*March - June, 2022*

## GRANTS AND FELLOWSHIPS

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- CAPES Full-Fellowship Ph.D- 2017-2022.
- CAPES Full-Fellowship M.Sc- 2014-2016.
- CAPES Fellowship for scientific beginner 2013-2014.

## ASSISTANCE TO SCIENTIFIC EVENTS

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- International Workshop on Elliptic and Kinetic PDEs. IMPA, Rio de Janeiro, Brazil, July 2015.
- Third Workshop on Nonlinear Dispersive Equations, IMECC-UNICAMP, Campinas, Brazil, Nov 2017.
- International Congress of Mathematicians Rio de Janeiro,RJ Brazil. Aug 2018.
- International Congress of Mathematicians: Satellite Conference, Nonlinear Dispersive Equations. Florianópolis, Aug 2018.
- ICMC Summer Meeting on Differential Equations-2019 Chapter, Universidade de São Paulo, São Carlos, Brazil, on February 04-06,2019.

- Fourth Workshop on Nonlinear Dispersive Equations 05 to 08 November 2019 IMUFRJ, Rio de Janeiro, Brazil.
- ICMC Summer Meeting on Differential Equations-2020 Chapter, Universidade de São Paulo, São Carlos, Brazil, on February, 2020.

## EXTRA-CURRICULAR ACTIVITIES SECTION

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- Member of the IMPA Post Graduating Association(APG-IMPA) 2017-2021.

## PERSONAL

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- **Citizenship:** Brazil. Born in April 10<sup>th</sup>, 1992.

## PERSONAL REFERENCES

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### Ph.D. Felipe Linares

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### Ph.D. Fábio Montenegro

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Fortaleza, Brasil.  
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