

# Vinicius Gripp Barros Ramos

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CONTACT INFORMATION Instituto de Matemática Pura e Aplicada Estrada Dona Castorina, 110 - Rio de Janeiro - RJ - Brazil  
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PERSONAL INFORMATION **Birth:** January 9, 1989

EDUCATION **University of California, Berkeley**  
– PhD in Mathematics 2007 – 2013  
*Thesis title:* Absolute gradings in Floer homologies and asymptotics of ECH capacities  
*Advisor:* Michael Hutchings

**Universidade Federal do Rio de Janeiro**  
– Masters degree in Mathematics 2005 – 2007  
*Dissertation title:* Curvas algébricas e geometria tropical  
– Bachelor’s degree in Applied Mathematics 2007 – 2007

EMPLOYMENT **Instituto de Matemática Pura e Aplicada**  
Associate Professor 2019 –  
Assistant Professor 2017 – 2019

**Instituto de Matemática Pura e Aplicada**  
Postdoctorate of excellence 2015 – 2017

**University of Nantes**  
Postdoctoral researcher funded by the European Research Council 2013 – 2015

**University of California, Berkeley**  
Graduate Student Instructor and Researcher 2007 – 2013

RESEARCH INTERESTS

- Symplectic and contact geometry
- Billiard dynamics
- Floer homologies
- Dynamical systems
- Low-dimensional topology

PUBLICATIONS

- Symplectic embeddings into four-dimensional concave toric domains (with K. Choi, D. Cristofaro-Gardiner, D. Frenkel and M. Hutchings), *Journal of Topology* **7** (4): 1054–1076 (2014).
- The asymptotics of ECH capacities (with D. Cristofaro-Gardiner and M. Hutchings), *Inventiones Mathematicae* **199** (1): 187–214 (2015).
- A topological grading on bordered Heegaard Floer homology (with Y. Huang), *Quantum Topology* **6** (3): 403–449 (2015).
- An absolute grading on Heegaard Floer homology by homotopy classes of oriented 2-plane fields (with Y. Huang), *Journal of Symplectic Geometry* **15** (1): 51–90 (2017).
- Symplectic embeddings and the lagrangian bidisk, *Duke Mathematical Journal* **166** (9): 1703–1738 (2017).

- Absolute gradings on ECH and Heegaard Floer homology, *Quantum Topol.* **9** (2): 207–228 (2018).
- On the rigidity of lagrangian products (with D. Sepe), *J. Symplectic Geom* **17** (5): 1447–1478 (2019).
- Symplectic embeddings of the  $l^p$ -sum of two discs (with Y. Ostrover), to appear in *J. Topol. Anal.*
- Examples around the strong Viterbo conjecture (with J. Gutt and M. Hutchings), to appear in *J. Fixed Point Theory Appl.*

PREPRINTS

- Symplectic embeddings into disk cotangent bundles (with B. Ferreira), arXiv:2110.02312.

PAPERS IN PREPARATION

- A dynamical interpretation of the first ECH capacity (with U. Hryniewicz and M. Hutchings).
- The equivalence of equivariant and Ekeland–Hofer capacities (with J. Gutt).
- A symplectic look on integrable triangular billiards (with Y. Ostrover and D. Sepe).

AWARDS

- FAPERJ young researcher grant, 2021–2024 (R\$72,000)
- CNPq productivity grant, 2021–2024 (R\$39,600)
- Serrapilheira grant, 2019–2022 (R\$1,000,000)
- CNPq Universal grant, 2019–2022 (R\$60,000)
- Serrapilheira grant, 2018–2019 (R\$100,000)
- FAPERJ young researcher grant, 2018–2021 (R\$72,000)
- CNPq productivity grant, 2018–2021 (R\$39,600)
- Outstanding Graduate Student Instructor Award, UC Berkeley, 2012
- Harvey Fellowship, 2012 (US\$16,000)
- CNPq PhD Fellowship 2008
- CNPq Masters Fellowship, 2005–2007

TEACHING EXPERIENCE

**Instituto de Matemática Pura e Aplicada**

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|-----------------------------------|--------------|
| • Algebraic Topology              | Mar–Jun 2021 |
| • Differential Topology           | Jan–Feb 2021 |
| • Symplectic Geometry             | Aug–Nov 2020 |
| • Topics on Symplectic Geometry   | Mar–Jun 2020 |
| • Ordinary Differential Equations | Aug–Nov 2019 |
| • Algebraic Topology              | Mar–Jun 2019 |
| • Symplectic Geometry             | Aug–Nov 2018 |
| • Linear algebra and optimization | Mar–May 2018 |
| • Seiberg–Witten theory           | Jan–Feb 2018 |
| • Differential Topology           | Jan–Feb 2018 |
| • Algebraic Topology              | Mar–Jun 2017 |
| • Topics on Differential Geometry | Mar–Jun 2017 |

- Morse theory and Floer homology Mar–Jun 2016
- Analysis on Manifolds Aug–Nov 2015

#### University of Nantes

- Topics course on foundations of embedded contact homology Spring 2015

#### Stanford University

- Instructor for the Education Program for Gifted Youth Summer 2013

#### University of California, Berkeley

- Instructor for Math 53 (Multivariable Calculus) Summer 2010
- Teaching Assistant:
  - Math 1A (Calculus) Spring 2012
  - Math 16B (Calculus) Spring 2011
  - Math 54 (Linear Algebra & Differential Equations) Spring 2009
  - Math 53 (Multivariable Calculus) Fall 2008
  - Math 1B (Calculus) Spring 2008

#### GRADUATE STUDENTS

##### PhD students

- Jonathan Augusto Trejos Olmos 2019–
- Keily Alejandro Vicente de Leon 2019–
- Brayan Cuzzuol Ferreira 2019–
- Eddy Santiago Achig Andrango (co-advised by Renato Vianna) 2019–
- Marcelo Jose Miranda Cunha Filho 2021–

##### Masters students

- Noeme de Lima Matos 2020–
- Caio Barbosa Rodrigues 2020–
- Jonathan Augusto Trejos Olmos 2017–2018

#### SELECT RESEARCH TALKS

- Geometry and dynamics seminar, Tel Aviv University, Israel, December 2020
- BACH seminar on symplectic and contact geometry, Bochum, Germany, June 2020
- Symplectic geometry seminar, IAS, Princeton, NJ, February 2020
- Gauge theory seminar, Harvard University, Cambridge, MA, January 2020
- Conservative dynamics and symplectic geometry conference, IMPA, Rio de Janeiro, Brazil, August 2019
- $C^0$  aspects of symplectic and Hamiltonian dynamics conference, Haifa, Israel, May 2019
- Rio de Janeiro joint dynamically systems seminar, Rio de Janeiro, Brazil, April 2019
- Jangada dinâmica, UFC, Fortaleza, Brazil, January 2019

- UCSC Math Colloquium, Santa Cruz, CA, January 2019
- Seminário PPGMat, UFES, Vitória, Brazil, October 2018
- Geometry and Dynamics seminar, Tel Aviv University, May 2018
- Conservative dynamics and symplectic geometry conference, IMPA, Rio de Janeiro, Brazil, August 2017
- Quantitative Symplectic Geometry conference, Simons Center, Stony Brook, NY, May 2017
- Topology Seminar, University of Oregon, Eugene, OR, December 2016
- Symplectic geometry and topology conference in honour of McDuff's 70th birthday, Edinburgh, UK, July 2016
- Dynamical systems seminar, University of São Paulo, Brazil, April 2016
- Workshop in symplectic geometry, UFRJ, Rio de Janeiro, Brazil, February 2016
- Geometry seminar, University of Georgia, Athens, GA, January 2016
- Topology seminar, UC Berkeley, CA, December 2015
- Mathematical Physics seminar, IMPA, Rio de Janeiro, Brazil, September 2015
- Israel Mathematical Union meeting, Israel, May 2015
- Séminaire de Topologie, Université de Grenoble, France, April 2015
- Séminaire Géométrie Topologie Dynamique, Université de Paris Sud, Orsay, France, February 2015
- CAST conference, Lyon, France, January 2015
- Séminaire Géométrie et applications, Université de Strasbourg, France, January 2015
- Symplectic geometry seminar, Stanford University, CA, December 2014
- Geometry and Topology seminar, UC Davis, CA, December 2014
- Geometry and Dynamics seminar, École normale supérieure de Lyon, France, October 2014
- Symplectix seminar, Paris, France, June 2014
- Rio de Janeiro Joint Symplectic Seminar, IMPA, Rio de Janeiro, Brazil, March 2014
- Nantes–Orsay seminar on Symplectic and Contact geometry, Nantes, France, October 2013
- Symplectic geometry seminar, Université de Neuchâtel, Switzerland, October 2013
- Caltech Geometry and Topology Seminar, Pasadena, CA, May 2013
- UCLA Topology Seminar, Los Angeles, CA, May 2013
- Riemannian and Contact dynamics, Nantes, France, February 2013
- AMS Sectional Meeting, Rochester Institute of Technology, USA, September 2012
- Workshop on Symplectic Field Theory VI, Ludwig-Maximilians-Universität München, Germany, July 2012
- CAST Summer School and Conference, Budapest, Hungary, July 2012
- Summer School on Contact and Symplectic Topology, Nantes, France, June 2011
- RTG workshop on Symplectic Field Theory, Maine, USA, August 2010

- Workshop on Knots, Contact Geometry and Floer homology, Tambara Institute, Japan, May 2010
- Symplectic geometry graduate seminar, MSRI, Berkeley, CA, December 2009

SERVICE

- Referee for:
  - Duke Mathematical Journal
  - Selecta Mathematica
  - Pacific Journal of Mathematics
  - Mathematical Research Letters
  - Journal of Topology
  - Mathematische Annalen
  - Journal of the European Mathematical Society
  - Journal of Symplectic Geometry
  - Algebraic and Geometry Topology
  - Involve
- Organizer of the Symplectic Geometry student seminar at UC Berkeley, Fall 2011–Spring 2012
- Officer of the mathematics graduate student association at UC Berkeley, 2011 – 2012

LANGUAGES

Portuguese (native), English (fluent), French (fluent), German (intermediate), Spanish (intermediate).