

# JUAN MUÑOZ-ECHÁNIZ

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Mathematics Department  
USA

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## ACADEMIC INTERESTS

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Floer theory. Mathematical gauge theory. Symplectic, contact and low-dimensional topology.

## EDUCATION

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### Columbia University, USA

- PhD in Mathematics (2018-2023, in progress)
- Advisor: Francesco Lin

### The University of Cambridge, UK

- MAST in Mathematics (2017-2018)

### Imperial College London, UK

- BSc in Mathematics (2014-2017)

## RESEARCH PAPERS

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- **A monopole invariant for families of contact structures.** (submitted, available on arXiv).
- **Exotic Dehn twists on sums of two contact 3-manifolds.** (joint with Eduardo Fernández, available on arXiv).

## INVITED TALKS

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- **Harvard University, Gauge theory and Topology Seminar.** November 2022.
- **Michigan State University, Geometry and Topology Seminar.** October 2022.
- **Columbia University, Symplectic geometry, gauge theory and categorification Seminar.** September 2022.
- **Frontiers in Geometry and Topology Summer School, Trieste.** August 2022 (short talk).
- **Georgia Institute of Technology, Geometry and Topology Seminar.** March 2022.
- **Stanford University, Topology Seminar.** March 2022.
- **Simons Center for Geometry and Physics / Stony Brook University, Low Dimensional Topology, Gauge Theory and Symplectic Geometry Seminar.** November 2021.
- **Princeton University, Topology Seminar.** September 2021.
- **Oxford-London Gauge Assembly conference.** August 2020.

## TEACHING EXPERIENCE

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### Columbia University

- Instructor, **Calculus 4** (Summer 2021). Class of 30 students.
- Teaching Assistant for **Algebraic Topology 1** (Fall 2020 with Mohammed Abouzaid and Fall 2021 with Andrew Blumberg), **Algebraic Topology 2** (Spring 2020 and Spring 2022 both with Francesco Lin), **Calculus 3** (Fall 2021 with Chen-Chi Lai), **Calculus 4** (Spring 2021 with Daniela da Silva), **Introduction to Modern Analysis 1** (Fall 2019 with Evgeni Dimitrov)

### COMMUNITY SERVICE

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- Referee for the journal *Algebraic & Geometric Topology*
- Mentor of an undergraduate student at the **Directed Reading Program** at Columbia University, Spring 2022. Topic: *Twistor theory of monopoles on 3-manifolds*.
- Mentor of an undergraduate student at the **Twoples mentorship program**, Fall 2020.
- Teaching Assistant for Francesco Lin's minicourse *Families of Dirac operators and applications*, ICTP Summer School *Frontiers in Geometry and Topology*, August 2022.