

Renan Isquierdo Boschetti

Curriculum Vitae

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Education

- 2020–2023 **PhD in Physics**, *Centre de Physique des Particules Marseille (CPPM), Aix-Marseille Université, Marseille, France.*
- 2017–2020 **Master in Physics**, *Department of Mathematical Physics, University of São Paulo (USP), São Paulo, Brazil.*
- 2013–2017 **Bachelor in Physics**, *University of São Paulo (USP), São Paulo, Brazil.*

Fellowships

- 2017–2019 **Graduate Fellowship**, *CAPES, University of São Paulo, Brazil.*
Project: Constraining theories of gravity through redshift-space distortions.
Supervisor: Luis Raul Weber Abramo.

Academic Experience

- 2020–2023 *Research in cosmology, studying observational and theoretical aspects of cosmic voids and its cross-correlation with shear of background galaxies.*
- 2017–2020 *Research in cosmology, studying optimized methods to estimate the power spectrum from simulations (FKP and multi-tracer) for constraining gravity. Forecasts of near future Surveys. Log-normal simulations. Light-cone construction from halo catalogs.*
- 2020 *Assistant in "Introduction to Relativity" at University of São Paulo*
Supervisor: Luis Raul Weber Abramo.
- 2017–present *Presentations in cosmology group meetings at University of São Paulo. Both recent papers and personal current research*
- 2016 *Assistant "In introduction to quantum physics" at University of São Paulo*
Supervisor: Maria Cristina dos Santos
- 2015 *Assistant in "Physics I" (Newtonian mechanics) at University of São Paulo*
Supervisor: Celso L. Lima.

Areas of Interest

Large-scale structure; Voids; Gravitational Lensing; Simulations; Forecasts for near future galaxy surveys; Surveys modelling; Modified gravity; Model selection.

Publications

- 2023 *Towards cosmology with Void Lensing: how to find voids sensitive to weak-lensing and numerically interpret them*
R. Boschetti, Pauline Vielzeuf, Marie-Claude Cousinou, Stephanie Escoffier, Eric Jullo

2020 *Fisher matrix for multiple tracers: all you can learn from large-scale structure without assuming a model*

R. Boschetti, L. Raul Abramo and Luca Amendola

Technical Skills

Programming PYTHON, MATHEMATICA

Developed tools OPTIMUM CENTERING VOID FINDER; POWER SPECTRUM ESTIMATOR; CORRELATION ESTIMATOR; DELTA SIGMA ESTIMATOR; MARKOV CHAIN MONTE CARLO (MCMC); FISHER MATRIX FORECAST; LIGHT-CONE CONSTRUCTION FROM SIMULATIONS.

Master's Grades

Physical Cosmology I - A

Quantum Mechanics I - C

Introduction to Quantum Field Theory - B

Statistical Mechanics - A

Physical Cosmology II - A

Structure formation - A

Projects in Progress

- Void-Lensing model: How to interpret weak lensing signal by voids (in collaboration with Rodrigo Voivodic)

Participation in Events

Presentation

09/2021 L'école de GIF, Aix-Marseille Université, Marseille, France.

05/2021 Atelier Action Dark-Energy, Marseille, France.

12/2022 DESI collaboration meeting Winter 2022, Cancun, Mexico.

04/2023 Future Cosmology 2023, IESC, Cargèse, Corse.

Poster

04/2018 VI La Plata International School of Astronomy and geophysics: Cosmology in the era of large surveys, Universidad Nacional de La Plata, La Plata, Argentina.

Participation

08/2019 III Joint ICTP-Trieste/ICTP-SAIFR School on Observational Cosmology, IFT-UNESP, São Paulo, Brazil.

06/2022 ICTP Summer School on Cosmology, Trieste, Italy.

04/2022 Euclid Consortium Meeting 2022, Oslo, Norway.

12/2021 Tonale Winter School of Cosmology 2021, Passo Del Tonale, Italy.

References

Luis Raul Weber Abramo

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Marcos Lima

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e-mail: mlima@if.usp.br

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Stephanie Escoffier

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Luca Amendola

Heidelberg University
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