Ana Carolina Santiago Menezes

ASTROPHYSICIST

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Education

Ph.D. in Astrophysics (in progress)

Federal University of Rio Grande do Sul (UFRGS), Brazil
Thesis: A Trip Through the Green Valley: Morphological Transformations and the Journey to Quiescence
Supervisor: Dr. Allan Schnorr Müller
Funding: CAPES Scholarship
2023 – Present

B.Sc. in Physics with emphasis in Astrophysics

Federal University of Rio Grande do Sul (UFRGS), Brazil
Thesis: Unraveling the Quenching of Star Formation: A Comparison of Bulge–Disk Decomposition Results Between Green Valley and Star–Forming Galaxies
Supervisors: Dr. Allan Schnorr Müller, Dra. Marina Trevisan
Funding: CNPq Scholarship
2018 – 2023

Visiting PhD Researcher

European Southern Observatory (ESO), Chile

Widening the limits in deriving bar ages
Supervisor: Camila de Sá–Freitas
2026

International Experience

Advanced Communication Skills & English Language Program

Bayswater Liverpool, United Kingdom (UK).
2025

Research Experience

Doctoral Research

Supervisor: Dr. Allan Schnorr Müller

Federal University of Rio Grande do Sul – UFRGS, Brazil ——————— *2023-Present*

- Investigation of morphological transformations in Green Valley galaxies using deep Subaru Hyper Suprime–Cam imaging. Through detailed photometric decompositions, I explore the structural properties and bulge types that may drive their transition toward quiescence.

Undergraduate Research

Federal University of Rio Grande do Sul — UFRGS, Brazil ———————————— *2021 - 2023*
- Investigation of morphological structures in Green Valley and star–forming galaxies to constrain quenching scenarios.
  Supervisors: Dr. Allan Schnorr Müller, Dra. Marina Trevisan

Federal University of Rio Grande do Sul — UFRGS, Brazil ———————————— *2021 - 2022*
- Analysis of globular clusters properties in the Milky Way.
  Supervisors: Dr. Alejandra Romero, Dr. Kepler de Souza Oliveira Filho

Federal University of Rio de Janeiro — UFRJ, Brazil ———————————— *2018*
- Investigation of the dynamical states of galaxy clusters using optical and X–ray data.
  Supervisor: Dr. Paulo Afranio Augusto Lopes

Publications

- **Santiago-Menezes, A. C.**; Schnorr-Muller, A.; Trevisan, M.; Katia S. Clerici; Palacios, F.; Oliveira, C. A. **Quenching Pathways and Morphology in Green Valley Galaxies - I: The Role of Bulge Types** (In preparation, 2026).
- K. Slodkowski Clerici, A. Schnorr-Müller, **A. C. Santiago-Menezes**, M. Trevisan, T. V. Ricci, R. Merib-Dias, F. Palacios, W. L. Becker and F. Ferrari. **Small and Complex I: The Three Component Structure of $z \sim$ 0 Massive Compact Quiescent Galaxies** (In preparation, 2026).

Conference Proceedings:
- **Santiago-Menezes, A. C.**; Schnorr-Muller, A. ; Trevisan, M. ; Palacios, F. ; Oliveira, C. A. *Unraveling the quenching of star formation:* a comparison of the results of a bulge-disk decomposition between Green Valley and Star Forming galaxies. In: XLVI Annual Meeting of the Brazilian Astronomical Society, 2023, Rio de Janeiro. Boletim da Sociedade Astronômica Brasileira. São Paulo: Sociedade Astronômica Brasileira, 2023. v. 35. p. 12-13.
- Palacios, F. ; Schnorr-Muller, A. ; Trevisan, M. ; Oliveira, C. A. ; **Santiago-Menezes, A. C**. *Kinematics and star formation in the green valley with integral field spectroscopy.* In: XLVI Annual Meeting of the Brazilian Astronomical Society, 2023, Rio de Janeiro. Boletim da Sociedade Astronômica Brasileira. São Paulo: Sociedade Astronômica Brasileira, 2023. v. 35. p. 84-85.
- Oliveira, C. A. ; Trevisan, M. ; Schnorr-Muller, A. ; Palacios, F. ; **Santiago-Menezes, A. C**. *Through the green valley: investigating the mechanisms behind the decrease in the star formation rate of galaxies.* In: XLVI Annual Meeting of the Brazilian Astronomical Society, 2023, Rio de Janeiro. Boletim da Sociedade Astronômica Brasileira. São Paulo: Sociedade Astronômica Brasileira, 2023. v. 35. p. 39-40.

Conferences & Presentations

- 2025: XLVIII Annual Meeting of the Brazilian Astronomical Society, MG–Br. **Talk**
- 2025: Galaxy Memoirs: Inferring Their Past from Their Present, Rio de Janeiro – Br, organized by University of Nottingham, UK. **Poster presentation.**
- 2023: XLVI Annual Meeting of the Brazilian Astronomical Society, RJ–Br. **Poster presentation**.

Student Mentoring

Federal University of Rio Grande do Sul – UFRGS, Brazil ——————— *2024 - Present*

- **Mentoring an undergraduate student** working on the formation and evolution of 905 S0 galaxies using HSC-SSP data. The project involves photometric decompositions with Imfit to study bulges, discs, and substructures, distinguishing secularly evolved from merger-driven systems. **"The Nature of an S0: Understanding the Connection Between Lenticular and Compact Quiescent Galaxies"**, student: Weslley Link Becker, supervisor: Allan Schnorr Müller

Teaching & Outreach Activities

- Federal University of Rio Grande do Sul – UFRGS, Brazil ——————— *2021 - 2023*

Science Outreach – Divulga (Astro)Física.

- Federal University of Rio de Janeiro – UFRJ, Brazil ——————— *2018*

Teaching Assistant – Introductory Physics Laboratory.

Leadership & Service

- Federal University of Rio Grande do Sul – UFRGS, Brazil ——————— *2025 - Present*

Graduate Student Representative – Postgraduate Program, Department of Astronomy.

Skills

- Galaxy morphology analysis, photometric decomposition, data processing.
- Python programming (including Astropy, Numpy, Scipy, Pandas, Matplotlib…).
- Proficiency with astronomical softwares and tools: ImFit, SourceExtractor, SQL (CasJobs queries), TOPCAT, DS9, QFitsView, LaTeX; basic knowledge of R.
- Public speaking and scientific communication.