Dr. Maria Luiza Linhares Dantas

PhD in Astrophysics

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Postdoctoral Experience

Postdoctoral Fellow

Pontifical Catholic University of Chile

Apr. 2024 – Apr. 2027 (expected) | Santiago, Chile

Ranked 2nd among 29 applicants in the Fondecyt 2024 Astronomy & Astrophysics call.

Postdoctoral Researcher

I. Nicolaus Copernicus Astronomical Center (CAMK), Polish Academy of Sciences

Mar. 2021 – Sept. 2023 | Warsaw, Poland

II. Center for Theoretical Physics (CFT), Polish Academy of Sciences

Oct. 2023 – Feb. 2024 | Warsaw, Poland

Education

PhD Astrophysics

Institute of Astronomy, Geophysics, and Atmospheric Sciences – University of Sao Paulo (IAG-USP)

Dec. 2015 – Sept. 2020 | São Paulo, Brazil

Supervisor: Paula R. T. Coelho

PhD Secondment

Autonomous University of Madrid

Sept. 2018 – Mar. 2019 | Madrid, Spain

Six-month internship during PhD.
Co-supervisor: Patricia Sánchez-Blázquez

Title: UV bright red-sequence galaxies: a comparative study between UV upturn and UV weak systems

MSc Astrophysics

IAG-USP

2013–2015 | São Paulo, Brazil

BSc Physics

Institute of Physics – University of Sao Paulo (IF-USP)

2007–2011 | São Paulo, Brazil

Funding

PERIOD	TOTAL STIPEND	FUNDING AGENCY	DURATION
Postdoc III	92,965,000 CLP	National Research and Development Agency (**ANID**), Chile	3yr
	3,080 EUR	IAU grants for IAUGA 2024, IAUS 395, IAUS 408	
Postdoc II*	414,000 PLN	National Science Centre (**NCN**), Poland.	3yr*
Postdoc I	310,000 PLN	NCN, Poland.	2yr 7m
PhD	180,000 BRL	Coordination for the Improvement of Higher Education Personnel (**CAPES**) & National Council for Scientific and Technological Development (**CNPq**), Brazil.	4yr 10m
MSc	35,600 BRL	**CAPES** & **CNPq**, Brazil.	2yr
BSc	3,600 BRL	**CNPq** – Scientific Initiation	1yr
	3,600 BRL	**CNPq** – Outreach project	1yr
	6,000 BRL	**IF-USP** – Computer lab tutor	1yr

* Note: resigned from the position.

Research interests and programming skills

Main interests

Stellar Populations | The Milky Way | Galaxy Evolution | Planets | Astrostatistics

Programming

`Python` `R` `Julia` LaTeX `SQL` `Git` `GitHub`

Events

Organising committees

Deciphering the Cosmic Code for Galaxy Formation Workshop 2024
LOC
2024 — Puerto Varas, Chile

III International Workshop on Spectral Stellar Libraries
LOC
2017 — Campos do Jordão, Brazil

II IAG Python Boot Camp
LOC & SOC
2017 — São Paulo, Brazil

I IAG Python Boot Camp
LOC & SOC
2015 — São Paulo, Brazil

Journal Club
Weekly seminar lead by graduate students at IAG-USP
2013–2016 — São Paulo, Brazil

Presentation statistics

PRESENTATION TYPE	#
Invited seminars	10
Contributed talks	13
Poster presentations	17
Tutorials	1
Other (e.g. journal clubs)	>20
Chaired sessions	4

Scholar indices

h-index (Google Scholar):	13
h-index (ADS):	12
i10-index (ADS):	14
Citations (ADS):	>1400

Ad hoc reviewer

The Astrophysical Journal (2021–)

Languages

English	●●●●●
Portuguese	●●●●●
French	●●●●●
Spanish	●●●◐○
German	◐○○○○
Polish	○○○○○

Recent selected presentations

European Space Agency Seminars
Invited Seminar
2025 — Madrid, Spain
Visitors from near and far: the story of stellar migration in the Milky Way and beyond

Galaxy Memoirs: Inferring Their Past From Their Present
Contributed talk
2025 — Búzios, Brazil
Tracing stellar migration in the Milky Way: estimating birth radii and chemo-dynamical trends of Gaia-ESO stars

XXXII IAU General Assembly
Contributed talk
2024 — Cape Town, South Africa
Deciphering Super-Metallicity, Lithium Depletion, and Radial Migration in the Vicinity of Our Solar Neighborhood

Panelist & evaluation committees

Hubble Space Telescope Panelist

Cycles 32 & 33

2024–2025

Evaluation Committee Member, Fondecyt (Postdoctoral) Grants

National Agency for Research and Development, ANID

2025 Chile

Abstract Reviewer

Brazilian Astronomical Society Annual Meeting

2025 Brazil

Scientific Initiation Symposium

IAG-USP

2017 São Paulo, Brazil

Prize for best PhD and MSc theses

IAG-USP

2017 São Paulo, Brazil

Memberships:

- Brazilian Astronomical Society (SAB);
- The International Astrostatistics Association (IAA);
- The Cosmostatistics Initiative (COIN);
- The Javalambre Physics of the Accelerating Universe (J-PAS; currently observing);
- The Javalambre and Southern Photometric Local Universe Surveys (J-PLUS and S-PLUS; currently observing);
- The *Gaia*-ESO Survey (now completed);
- The *Galaxies* and *Stars, Milky Way, and Local Volume* Science Collaborations of the Rubin Observatory;
- The Wide-Field Spectroscopic Telescope (WST) Project: a potential new telescope;
- The KiDS Survey (currently observing);
- Pollux science development group.

Visiting researcher

ESAC (Fully funded by the host institute)

Host: Dr. Isabel Rebollido

Dec. 2025 Madrid, Spain

Nicolaus Corpernicus Astronomical Center (Partially funded by the host institute)

Host: Prof. Rodolfo Smiljanic

Dec. 2025 Warsaw, Poland

University of North Carolina (Partially funded by the host institute)

Host: Prof. Rafael S. de Souza

Nov. 2017 Chapel Hill, NC, USA

Eötvös Loránd University (Partially funded by the host institute)

Host: Prof. Rafael S. de Souza

Sep. 2016 Budapest, Hungary

Institut d'Astrophysique de Paris (Partially funded by the host institute)

Host: Prof. Stéphane Charlot

Sep. 2016 Paris, France

Other professional experiences

Freelance creator of school-level Physics content

Oxford University Press & Grupo SM

2015 São Paulo, Brazil

Physics content development at the elementary school level.

Project management trainee/analyst

Luz Engenharia Financeira

2011–2012 São Paulo, Brazil

Project management trainee (2011) and analyst (2011–2012).

Teaching experience

Astronomy Summer Course for High School Students

Pontifical Catholic University of Chile

January 2026 — Santiago, Chile

Teaching assistant – IAG-USP

2014	Galactic & Extragalactic Astrophysics; Topics in Astronomy for Teaching Degree;
2010	Topics in Astronomy for Geophysicists; Position Astronomy;
2009	Introduction to Astronomy

School teaching experience

2008–2018	Private tutor – Sao Paulo, Brazil
2012	Substitute teacher @ Bradesco Foundation – Osasco, Brazil

Supervising experience

MSc Student: Raquel San Andres Navarro [Co-supervision with Dr. Isabel Rebollido (ESA)]

MSc project at Universidad Autónoma de Madrid (6 mo)

2025–2026 — Madrid, Spain

MSc Student: Juan José Garcia Delgado [Co-supervision with Dr. Isabel Rebollido (ESA)]

MSc project at Universidad Complutense de Madrid (6 mo)

2024–2025 — Madrid, Spain

BSc Student: Diego Edgardo Beltrán Flores

Graduate thesis project (6mo) at the Pontifical Catholic University of Chile

2026 — Santiago, Chile

IC Student: Pedro Henrique Rocha de Andrade [Co-supervision with Dr. Ana C. Soja (IFF - Brazil)]

Scientific Initiation (IC) for undergraduate students — 1 year scholarship granted by CNPq, Brazil

2024-2026 — Bom Jesus do Itabapoana, Rio de Janeiro, Brazil

Summer Student: Diego Jesús Olivares Pérez

Summer project at PUC for undergrad students (“IPRE”)

January 2026 — Santiago, Chile

Summer Student: Daniel Ignacio Neira Iturrieta

Summer project at PUC for undergrad students (“IPRE”)

January 2026 — Santiago, Chile

Summer Student: Diego Edgardo Beltrán Flores

Summer project at PUC for undergrad students (“IPRE”)

January 2025 — Santiago, Chile

Summer Student: Klaudia Kowalczyk

Summer project at CAMK for undergrad students

July 2021 — Warsaw, Poland

✔ Referees

Prof. Paula Coelho
@ University of São Paulo
✉ pcoelho@usp.br
São Paulo, SP – Brazil

Prof. Rodolfo Smiljanic
@ Nicolaus Copernicus Astronomical Center
✉ rsmiljanic@camk.edu.pl
Warsaw – Poland

Prof. Rafael S. de Souza
@ University of Hertfordshire
✉ r.da-silva-de-souza@herts.ac.uk
Hatfield – United Kingdom

Prof. Patricia Tissera
@ Pontifical Catholic University of Chile
✉ patricia.tissera@uc.cl
Santiago – Chile

Prof. Alberto Krone Martins
@ University of California
✉ algol@uci.edu
Irvine, CA – USA

Publications

ADS: https://ui.adsabs.harvard.edu/public-libraries/CjIt6YxOTm-uFdWee1gI0g

Google Scholar: https://scholar.google.com/citations?user=rw1MfqMAAAAJ&hl

First-author and lead-author publications

[1] **M. L. L. Dantas**, R. Smiljanic, R. S. de Souza, P. B. Tissera, and L. Magrini. "Probing the origins. I. Generalised additive model inference of birth radii for Milky Way stars in the solar vicinity". In: *A&A* 696 (Apr. 2025), A205. DOI: 10.1051/0004-6361/202453034.

[2] **M. L. L. Dantas**, R. Smiljanic, D. Romano, G. Guiglion, L. Magrini, P. Tissera, and R. S. de Souza. "Probing the origins. II. Unravelling lithium depletion and stellar motion: Intrinsic stellar properties drive depletion, not kinematics". In: *A&A* 699 (July 2025), A173. DOI: 10.1051/0004-6361/202554305.

[3] **M. L. L. Dantas**, R. Smiljanic, and D. Romano. "Testing the Solar Lithium Abundance with a Survival Model". In: *Research Notes of the American Astronomical Society* 9.7 (July 2025), p. 199. DOI: 10.3847/2515-5172/adf29c.

[4] D. Beltrán and **M. L. L. Dantas**. "CACHAI's First Module: A Fully Customizable Chord Diagram for Astronomy and Beyond". In: *Research Notes of the AAS* 9.8 (Aug. 2025), p. 216. DOI: 10.3847/2515-5172/adf8df.

[5] **M. L. L. Dantas**, R. Smiljanic, R. Boesso, et al. "The Gaia-ESO Survey: Old super metal-rich visitors from the inner Galaxy". In: *A&A* 669 (Jan. 2023), A96. DOI: 10.1051/0004-6361/202243667.

[6] **M. L. L. Dantas**, Guiglion, G., Smiljanic, R., et al. "The Gaia-ESO Survey: Probing the lithium abundances in old metal-rich dwarf stars in the solar vicinity". In: *A&A* 668 (Dec. 2022), p. L7. DOI: 10.1051/0004-6361/202245230.

[7] **M. L. L. Dantas**, P. R. T. Coelho, and P. Sánchez-Blázquez. "UV upturn versus UV weak galaxies: differences and similarities of their stellar populations unveiled by a de-biased sample". In: *MNRAS* 500.2 (Jan. 2021), pp. 1870–1883. DOI: 10.1093/mnras/staa3447.

[8] **M. L. L. Dantas**, P. R. T. Coelho, R. S. de Souza, and T. S. Gonçalves. "UV bright red-sequence galaxies: how do UV upturn systems evolve in redshift and stellar mass?" In: *MNRAS* 492.2 (Feb. 2020), pp. 2996–3011. ISSN: 0035-8711. DOI: 10.1093/mnras/stz3609.

[9] R. S. de Souza, **M. L. L. Dantas**, M. V. Costa-Duarte, et al. "A probabilistic approach to emission-line galaxy classification". In: *MNRAS* 472.3 (Dec. 2017), pp. 2808–2822. DOI: 10.1093/mnras/stx2156.

[10] R. S. de Souza, **M. L. L. Dantas**, A. Krone-Martins, et al. "Is the cluster environment quenching the Seyfert activity in elliptical and spiral galaxies?" In: *MNRAS* 461.2 (Sept. 2016), pp. 2115–2125. DOI: 10.1093/mnras/stw1459.

Co-authored publications

[11] J. E. Martínez Fernández, S. Özdemir, R. Smiljanic, **M. L. L. Dantas**, and A. R. da Silva. "Playing CHESS with stars: I. Search for similar stars in large spectroscopic datasets". In: *A&A* 704, A61 (Dec. 2025), A61. DOI: 10.1051/0004-6361/202556583.

[12] L. Magrini, C. Viscasillas Vázquez, L. Spina, S. Randich, D. Romano, E. Franciosini, V. D. Orazi, M. Baratella, R. Smiljanic, **M. L. L. Dantas**, et al. "The Gaia-ESO survey: mapping the shape and evolution of the radial abundance gradients with open clusters". In: *A&A* 669, A119 (Jan. 2023), A119. DOI: 10.1051/0004-6361/202244957.

[13] S. Nepal, G. Guiglion, R. S. de Jong, M. Valentini, C. Chiappini, M. Steinmetz, M. Ambrosch, E. Pancino, R. D. Jeffries, T. Bensby, D. Romano, R. Smiljanic, **M. L. L. Dantas**, et al. "The Gaia-ESO Survey: Preparing the ground for 4MOST and WEAVE galactic surveys. Chemical evolution of lithium with machine learning". In: *A&A* 671, A61 (Mar. 2023), A61. DOI: 10.1051/0004-6361/202244765.

[14] G. Gilmore, S. Randich, C. C. Worley, A. Hourihane, A. Gonneau, G. G. Sacco, **(...)**, **M. L. L. Dantas**, et al. "The Gaia-ESO Public Spectroscopic Survey: Motivation, implementation, GIRAFFE data processing, analysis, and final data products". In: *A&A* 666, A120 (Oct. 2022), A120. DOI: 10.1051/0004-6361/202243134.

[15] E. V. R. Lima, Jr. Sodré L., C. R. Bom, G. S. M. Teixeira, L. Nakazono, M. L. Buzzo, C. Queiroz, F. R. Herpich, J. L. Nilo Castellón, **M. L. L. Dantas**, et al. "Photometric redshifts for the S-PLUS Survey: is machine learning up to the task?" In: *Astronomy and Computing* (Jan. 2022), p. 100510. ISSN: 2213-1337. DOI: 10.1016/j.ascom.2021.100510.

[16] S. Randich, G. Gilmore, L. Magrini, G. G. Sacco, R. J. Jackson, R. D. Jeffries, (...), **M. L. L. Dantas**, et al. "The Gaia-ESO Public Spectroscopic Survey: Implementation, data products, open cluster survey, science, and legacy ⋆". In: *A&A* 666, A121 (Oct. 2022), A121. DOI: 10.1051/0004-6361/202243141.

[17] Michele Delli Veneri, Rafael S. de Souza, Alberto Krone-Martins, E. E. O. Ishida, **M. L. L. Dantas**, and Noble Kennamer. "How Have Astronomers Cited Other Fields in the Last Decade?" In: *Research Notes of the AAS* 6.6 (June 2022), p. 113. DOI: 10.3847/2515-5172/ac74c7.

[18] S. Bonoli, A. Marín-Franch, J. Varela, H. Vázquez-Ramió, L R Abramo, A. J. Cenarro, R. A. Dupke, **(...)**, **M. L. L. Dantas**, et al. "The miniJPAS survey: A preview of the Universe in 56 colors". In: *A&A* 653, A31 (Sept. 2021), A31. DOI: 10.1051/0004-6361/202038841.

[19] P. P. B. Beaklini, A. V. C. Quadros, M. G. B. de Avellar, **M. L. L. Dantas**, and A. L. F. Cançado. "AGN dichotomy beyond radio loudness: a Gaussian mixture model analysis". In: *MNRAS* 497.2 (Sept. 2020), pp. 1463–1474. DOI: 10.1093/mnras/staa2072.

[20] M. V. Costa-Duarte, L. Sampedro, A. Molino, H. S. Xavier, F. R. Herpich, A. L. Chies-Santos, C. E. Barbosa, A. Cortesi, W. Schoenell, A. Kanaan, T. Ribeiro, C. Mendes de Oliveira, S. Akras, A. Alvarez-Candal, C. L. Barbosa, J. L. N. Castellón, P. Coelho, **M. L. L. Dantas**, et al. "The S-PLUS: a star/galaxy classification based on a Machine Learning approach". In: (Sept. 2019). **Pre-print.** arXiv: 1909.08626.

[21] C. Mendes de Oliveira, T. Ribeiro, W. Schoenell, A. Kanaan, R. A. Overzier, A. Molino, L. Sampedro, P. Coelho, **(...)**, R. Cid Fernandes, **M. L. L. Dantas**, et al. "The Southern Photometric Local Universe Survey (S-PLUS): improved SEDs, morphologies, and redshifts with 12 optical filters". In: *MNRAS* 489.1 (Oct. 2019), pp. 241–267. DOI: 10.1093/mnras/stz1985.

[22] J. P. Nogueira-Cavalcante, R. Dupke, P. Coelho, **M. L. L. Dantas**, et al. "J-PLUS: Impact of bars on quenching timescales in nearby green valley disc galaxies". In: *A&A* 630, A88 (Oct. 2019), A88. DOI: 10.1051/0004-6361/201935138.

[23] N. Benitez, R. Dupke, M. Moles, L. Sodre, Cenarro, ..., M. V. Costa-Duarte, A. A. da Costa, **(...)**, **M. L. L. Dantas**, et al. "J-PAS: The Javalambre-Physics of the Accelerated Universe Astrophysical Survey". In: *arXiv e-prints* (Mar. 2014). **Pre-print.** arXiv: 1403.5237.

Conference papers (proceedings)

[24] **M. L. L. Dantas**, R. Smiljanic, R. Boesso, H. Rocha-Pinto, L. Magrini, G. Guiglion, and D. Romano. "The interplay between super-metallicity, lithium depletion, and radial migration in nearby stars". In: *IAUS395 Proceedings* (in press). DOI: 10.1017/S1743921325001188. arXiv: 2501.17031.

[25] J. J. García-Delgado, **M. L. L. Dantas**, I. Rebollido, and R. Smiljanic. "Chemo-dynamic clues to the birthplaces of exoplanetary systems". In: *IAUS 404 Proceedings* (in press). Ed. by J. Haqq-Misra and R. Kopparapu.

[26] R. Smiljanic, J. E. Martínez-Fernández, S. Özdemir, **M. L. L. Dantas**, and A. R. da Silva. "Playing CHESS with stars: Opening moves". In: *IAUS395 Proceedings* (in press).

[27] **M. L. L. Dantas**, R. Smiljanic, R. S. de Souza, P. B. Tissera, and L. Magrini. "The Milky Way in motion: gauging stellar trajectories that shape the Galactic thin disc". In: *Boletim da Sociedade Astronômica Brasileira* 1.37 (2026), pp. 225–227. DOI: 10.48550/arXiv.2512.15670. arXiv: 2512.15670 [astro-ph.GA]. URL: https://sab-astro.org.br/wp-content/uploads/2026/04/proceedings.pdf.

[28] P. H. R. de Andrade, **M. L. L. Dantas**, and A. C. Soja. "Stellar properties and chemical features of the Gaia Catalogue of Nearby Stars observed by GALAH DR4". In: *Boletim da Sociedade Astronômica Brasileira* 1.37 (2026), pp. 308–309. DOI: 10.48550/arXiv.2512.10037. arXiv: 2512.10037 [astro-ph.SR]. URL: https://sab-astro.org.br/wp-content/uploads/2026/04/PedroAndrade.pdf.

[29] L. J. Zenocratti, M. E. De Rossi, A. V. Smith Castelli, F. R. Faifer, **M. L. L. Dantas**, and L. Sodré. "Synthetic S-PLUS photometry of simulated galaxies in Fornax-like clusters". In: *Boletin de la Asociacion Argentina de Astronomia La Plata Argentina* 63 (July 2022). **Peer-reviewed proceedings.**, pp. 205–207.

[30] A. V. Smith Castelli, C. Mendes de Oliveira, F. Herpich, C. E. Barbosa, C. Escudero, M. Grossi, L. Sodré, C. R. de Bom, L. Zenocratti, M. E. De Rossi, A. Cortesi, R. Cid Fernandes, A. R. Lopes, E. Telles, G. B. Oliveira Schwarz, **M. L. L. Dantas**, et al. "The Fornax Cluster through S-PLUS". In: *Boletin de la Asociacion Argentina de Astronomia La Plata Argentina* 62 (July 2021). **Peer-reviewed proceedings.**, pp. 180–182.

[31] V. Branco, P. R. T. Coelho, A. Chies-Santos, and **M. L. L. Dantas**. "Synthetic photometry for J-PLUS and S-PLUS and the multiple populations in globular clusters". In: *Boletim da Sociedade Astronômica Brasileira* 30.1 (2018), pp. 156–157.

Theses

[32] **M. L. L. Dantas**. "UV bright red-sequence galaxies: a comparative study between UV upturn and UV weak systems". PhD thesis. São Paulo: Universidade de São Paulo, Nov. 2020, arXiv:2011.06476. DOI: 10.11606/T.14.2020.tde-14122020-155924.

[33] **M. L. L. Dantas**. "The connection between the spectral synthesis of galaxies in the visible and their UV emission". MA thesis. São Paulo: Universidade de São Paulo, 2015. DOI: 10.11606/D.14.2015.tde-06112020-131756.

Other

[34] K. Fahrion, J. van de Sande, K. R. Akhil, M. A. Beasley, F. Belfiore, **M. L. L. Dantas**, P. K. Das, E. Emsellem, J. Hartke, M. Hilker, A. Monreal-Ibero, A. Prieto, M. Raouf, S. Thater, and I. Zinchenko. "Connecting galaxies with their haloes – from parsec to Mpc scales". In: *arXiv e-prints* (Dec. 2025). **ESO call for white papers**. DOI: 10.48550/arXiv.2512.14281. arXiv: 2512.14281 [astro-ph.GA].

[35] **M. L. L. Dantas**, R. Smiljanic, R. S. de Souza, L. Beraldo e Silva, V. P. Debattista, and L. Magrini. "From Birth to Orbit: Dissecting churn and blur in Galactic dynamics". In: *IAU General Assembly*, 2234 (Aug. 2024), p. 2234.

[36] **M. L. L. Dantas**, E. Cameron, Rafael S. de Souza, et al. "Women in academia: a warning on selection bias in gender studies from the astronomical perspective". In: (Dec. 2020). DOI: 10.48550/arXiv.2012.09784. arXiv: 2012.09784 [physics.soc-ph].

[37] William J Ripple, Christopher Wolf, Thomas M Newsome, Phoebe Barnard, William R Moomaw, and **11,258 SCIENTIST SIGNATORIES FROM 153 COUNTRIES**. "World Scientists' Warning of a Climate Emergency". In: *BioScience* (Nov. 2019). **M. L. L. Dantas is a co-signatory**. ISSN: 0006-3568. DOI: 10.1093/biosci/biz088.