

M. L. L. DANTAS

PhD in Astrophysics

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Post-doctoral Experience

Post-doctoral Researcher

Nicolaus Copernicus Astronomical Center (CAMK)

March 2021 – ongoing 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

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

Supervisor: Prof. Paula R. T. Coelho

Internship

Autonomous University of Madrid

Sept. 2018 – Mar. 2019 Madrid, Spain

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

MSc Astrophysics

IAG-USP

2013–2015 São Paulo, Brazil

Advisor: Prof. Laerte Sodré Jr.

BSc Physics

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

2007–2011 São Paulo, Brazil

Funding

Period	Total stipend	Funding agency	Duration
Postdoc	310,000 PLN	National Science Centre (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
	3,600 BRL	CNPq – Scientific Initiation	1yr
BSc	3,600 BRL	CNPq – Outreach project	1yr
	6,000 BRL	IF-USP – Computer lab tutor	1yr

Events: member of local and/or scientific organising committee

III International Workshop on Spectral Stellar Libraries (IWSSL) – **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

General Info

Date of birth: Aug. 20, 1986
Place of birth: Brasília, Brazil
Citizenship: Brazilian

Ad hoc journal reviewer

The Astrophysical Journal (since 2021)

Examination board member

Scientific Initiation Symposium

IAG-USP

2017 São Paulo, Brazil

Prize for best PhD and MSc theses

IAG-USP

2017 São Paulo, Brazil

Supervising experience

Student: Klaudia Kowalczyk

Summer project at CAMK for undergrad students (1 month)

July 2021 Warsaw, Poland

Research interests

Resolved and unresolved stellar populations
The Milky Way Galactic archaeology
Galaxy evolution Emission-lines AGN
SED fitting Astrostatistics

Languages

English ●●●●●
Portuguese ●●●●●
French ●●●●●
Spanish ●●●●●
German ●●●●●
Polish ●●●●●

Programming

python R julia \LaTeX SQL git github

Astronomical software skills

STARLIGHT pPXF topcat galpy

📌 Selected presentations

XXXI IAU General Assembly

Contributed talk

📅 2022 📍 Busan, South Korea

Old super-metal-rich stars in the solar vicinity: from where did they come?

Centre for Astrophysics and Gravitation (CENTRA)

Invited seminar

📅 2022 📍 University of Lisbon, Lisbon, Portugal

A tale of old super metal-rich stars

5th Workshop of the Network for Ultraviolet Astronomy

Contributed talk

📅 2020 📍 Spain (on-line event)

Assessing the evolution of the UV upturn

XLI Brazilian Astronomical Society Meeting

Contributed talk

📅 2017 📍 São Paulo, Brazil

Is the cluster environment quenching the Seyfert activity in elliptical and spiral galaxies?

University Week

Invited seminar

📅 2017 📍 Universidade de Brasília (UnB), Brasília, Brazil

Two Years of Astrostatistics: My Experience as an Astrophysicist

✈ Visiting researcher

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 Physics school content creator

Oxford University Press & Grupo SM

📅 2015 📍 São Paulo, Brazil

Project trainee/analyst in finance

Luz Engenharia Financeira

📅 2011–2012 📍 São Paulo, Brazil

Financial trainee (2011) and analyst (2011–2012).

📊 Presentation statistics

Type of presentation	Number
Invited seminars	4
Contributed talks	6
Poster presentations	9
Tutorials	1
Other talks (e.g. journal clubs)	14+
Chaired sessions	2

📈 Scholar indices

h-index (ADS):	8
i10-index (ADS):	8
Citations (ADS):	592

🔗 Member of:

- The International Astrostatistics Association (IAA);
- The Cosmostatistics Initiative (COIN);
- The Javalambre Physics of the Accelerating Universe (J-PAS);
- The Javalambre and Southern Photometric Local Universe Surveys (J-PLUS and S-PLUS);
- The Gaia-ESO Survey.

📖 Teaching experience

Teaching assistant (at IAG-USP):

- 2014 – Galactic & Extragalactic Astrophysics
- 2014 – Astronomy Topics for Undergraduate Students with Major in Pedagogy
- 2010 – Astronomy Topics for Geophysicists
- 2010 – Position Astronomy
- 2009 – Introduction to Astronomy

School teaching experience:

- 2007–2018 – Private tutor – Sao Paulo, Brazil
- 2015 – Substitute teacher at the Bradesco Foundation – Osasco, Brazil

👤 Referees

Prof. Paula Coelho

@ pcoelho@usp.br

✉ Astronomy Dept., University of São Paulo – Sao Paulo, SP, Brazil

Prof. Rodolfo Smiljanic

@ rsmiljanic@camk.edu.pl

✉ Nicolaus Copernicus Astronomical Center (CAMK), Warsaw, Poland

Prof. Rafael S. de Souza

@ r.da-silva-de-souza@herts.ac.uk

✉ University of Hertfordshire, UK

Prof. Alberto Krone Martins

@ algol@uci.edu

✉ Donald Bren School of Information and Computer Sciences University of California – Irvine, CA, USA

Major contribution

- [1] **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.
- [2] **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.
- [3] **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.
- [4] **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.
- [5] 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.
- [6] 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.

Moderate contribution

- [7] 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.
- [8] 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.

Minor contribution

- [9] 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.
- [10] 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.
- [11] 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.
- [12] E. V. R. Lima, Jr. Sodr e L., C. R. Bom, G. S. M. Teixeira, L. Nakazono, M. L. Buzzo, C. Queiroz, F. R. Herpich, J. L. Nilo Castell on, **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.
- [13] 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.
- [14] S. Bonoli, A. Mar n-Franch, J. Varela, H. V zquez-Rami , 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.
- [15] 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. Castell on, 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.
- [16] 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.
- [17] 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.

Proceedings

- [18] L. J. Zenocratti, M. E. De Rossi, A. V. Smith Castelli, F. R. Faifer, **M. L. L. Dantas**, and L. Sodr e. "Synthetic S-PLUS photometry of simulated galaxies in Fornax-like clusters". In: *Bolet n de la Asociaci n Argentina de Astronom a La Plata Argentina* 63 (July 2022). **Peer-reviewed proceedings**, pp. 205–207.
- [19] A. V. Smith Castelli, C. Mendes de Oliveira, F. Herpich, C. E. Barbosa, C. Escudero, M. Grossi, L. Sodr e, 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: *Bolet n de la Asociaci n Argentina de Astronom a La Plata Argentina* 62 (July 2021). **Peer-reviewed proceedings**, pp. 180–182.
- [20] Vinicius Branco, Paula R T Coelho, Ana Chies Santos, and **Maria Luiza L. Dantas**. "Synthetic photometry for J-PLUS and S-PLUS and the multiple populations in globular clusters". In: *Boletim da Sociedade Astron mica Brasileira* 30.1 (2018), pp. 156–157.

Other

- [21] 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.
- [22] **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). arXiv: 2012.09784 [physics.soc-ph].
- [23] 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.