



# Pablo A. Saavedra Morales

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## EDUCATION AND TRAINING

### Master of Science in Astronomy

*Universidad de Chile* [ 01/03/2024 – Current ]

**City:** Santiago | **Country:** Chile | **Website:** <https://das.uchile.cl/> | **Field(s) of study:** Natural sciences, mathematics and statistics: • Physics | **Level in EQF:** EQF level 7 | **Thesis:** Study of the reprocessing of accretion discs using Swift data and model-based timing analysis

### Bachelor of Science in Astrophysics

*Universidad Técnica Federico Santa María* [ 01/04/2020 – 18/12/2023 ]

**City:** Santiago | **Country:** Chile | **Website:** <https://fisica.usm.cl> | **Field(s) of study:** Natural sciences, mathematics and statistics: • Physics | **Level in EQF:** EQF level 6 | **Thesis:** Measurement and Analysis of the Halo Occupation Distribution in the SDSS

## PROJECTS

[ 01/03/2023 – Current ]

**Disc reprocessing and variability in AGN** Analysed simultaneous X-ray and UV/Optical light curves of five AGNs using Swift data. Computed Power Spectral Densities, phase lags, and coherence, and fitted these results with an analytical model to constrain the system's geometry and test for the presence of a second reprocessor.

[ 01/05/2023 – 18/12/2023 ]

**The halo-galaxy connection in the era of multi-tracer cosmology** Studied the halo occupation distribution for a specific catalogue of galaxy groups, focusing on the contribution of central and satellite galaxies in different volume-limited samples. Analysed how parameters vary across absolute magnitude and redshift ranges.

[ 01/07/2022 – 01/01/2023 ]

**Magnetic white dwarfs from the SDSS-V plate survey** Classified spectra of magnetic white dwarfs by identifying Zeeman effect and metal line features, in order to prepare a dataset for training a machine learning model for automated spectral classification.

## CERTIFICATIONS

[ Google for Education, 16/11/2025 ]

**Gemini Certification for University Students** Training on the practical and responsible use of Generative AI tools (Gemini, NotebookLM) to enhance research productivity and workflow.

**Mode of learning:** Online

## SKILLS

### Programming Languages

Python / C / SQL / MATLAB

### Software & Tools

VS Code / TOPCAT / SAOImage DS9 / IRAF / Splat-VO

## Astronomical Applications

GF / SExtractor / GALFIT

## HONOURS AND AWARDS

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[ 17/10/2025 ] SOCHIAS

**Winner - ALerCE Hackathon** Developed a project using ZTF light curves of AGN classified by the ALerCE broker. Computed time lags between the g and r bands for AGN with different absolute magnitudes to explore wavelength-dependent variability timescales.

[ 03/12/2024 ] Universidad Técnica Federico Santa María

**Distinción Académica "Federico Santa María y Carrera"** Distinction awarded to the best graduate in the bachelor's degree in Astrophysics.

## CONFERENCES AND SEMINARS

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[ 09/02/2026 – 11/02/2026 ] Ludwig Maximilians University of Munich, Garching, Germany (Virtual)

**IMPRS Recruitment Workshop** Selected to present Master's thesis research in a competitive workshop.

[ 30/10/2025 – 30/10/2025 ] Universidad Diego Portales, Santiago, Chile

**Publishing Workshop (Elsevier)** Mini-workshop led by Dr. Rebeca Aladro on scientific writing and publishing, covering authorship, peer review, publishing ethics, and the responsible use of AI in research.

[ 13/10/2025 – 17/10/2025 ] Universidad Austral, Puerto Montt, Chile

**XX SOCHIAS Annual Meeting** Poster: Reprocessing in AGN accretion discs - A study using SWIFT data and Transfer Function modelling

[ 28/08/2025 – 29/08/2025 ] Universidad de Chile, Santiago, Chile

**III Simposio de Postgrado de Ingeniería, Ciencias e Innovación** Poster: Constraining the X-ray to Optical TF in AGN using SWIFT Light Curves and Simulations

[ 30/06/2025 – 04/07/2025 ] Palazzo D'Avalos, Vasto, Italy

**Vasto Accretion Meeting: AGN** Poster: Constraining the X-ray to Optical TF in AGN using SWIFT Light Curves and Simulations

[ 11/12/2024 – 13/12/2024 ] Universidad de Concepción, Concepción, Chile

**TITANs face-to-face Meeting** Talk: Power-spectral density analysis of AGN with long-term light curves

[ 11/11/2024 – 15/11/2024 ] Universidad de Tarapacá, Arica, Chile

**XIX SOCHIAS Annual Meeting** Poster: Power-spectral density analysis of AGN with long-term light curves

[ 09/11/2023 – 11/11/2023 ] Universidad Austral, Valdivia, Chile

**Cosmofisix Workshop** Organized by the Coordinadora de Estudiantes de Ciencias Físicas y Astronómicas (CECFA)

## LANGUAGE SKILLS

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**Mother tongue(s):** Spanish

**Other language(s):** English

## OUTREACH

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[ 01/03/2024 – 01/06/2025 ]

### **Public Tours at the National Observatory on Cerro Calán**

Guided school groups through the observatory, introducing them to its history and demonstrating the use of available telescopes, and leading guided solar or night observations, depending on the visit.

[ 01/03/2022 – 01/12/2023 ]

### **University Admissions Outreach Assistant (Physics Department)**

Promoted the department's academic programmes at admission stands, engaged with prospective students, and provided information about career opportunities.

## TEACHING ASSISTANT EXPERIENCE

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[ 01/07/2024 – 01/12/2025 ]

### **FCFM, Universidad de Chile**

- Introduction to Astronomy (1 semester)
- Astronomy & Astrophysics (1 semester)

[ 01/07/2021 – 01/12/2023 ]

### **Universidad Técnica Federico Santa María**

- General Physics II (2 semesters)
- General Physics III (3 semesters)
- General Physics IV (2 semesters)