

José Leonardo Robles Rodríguez
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Panama City, Panama.



INTERESTS Business management, environmental science, light pollution, brightness, color, and spectrum of the night sky, public streetlight technology transition, instrument manufacturing, aerosols, nuclear fission, nuclear waste, data science, computational techniques, non-parametric statistics, and satellite measurements.

EDUCATION *2018–2021, Ph.D., Spain, Complutense University of Madrid, Extragalactic Astrophysics and Astronomical Instrumentation Group.*
Study of the evolution of light pollution in Madrid through measurements of night sky brightness and color.

2011–2013, Master's Degree, France, Ministry of Higher Education and Research. IMT Atlantique Bretagne-Pays de la Loire, Nantes.
Sustainable nuclear energy and nuclear waste management.

2007–2011, Bachelor's Degree, Panama, University of Panama.
Paramagnetic-ferromagnetic phase transition of the Monel 500 alloy.

**RESEARCH
AND
TEACHING**

2026–Present, General Manager of Eficiencia Energética y Ambiente de Panamá, EEAPA S.A., Panama City, Panama.

- Management of energy and environmental projects.
- Direction of design, evaluation, and measurement projects for energy savings and environmental assessments related to nighttime lighting.
- Client portfolio: ports, roads, industrial zones, parks, and gated communities.

2023–Present, Research Scientist, Instituto Nacional de Investigaciones Científicas Avanzadas en Tecnologías de Información y Comunicación, INDICATIC AIP, Panama City, Panama.

- Main research line: light pollution and the environment. Director of Panama's first light pollution monitoring station.

- Director of the scientific committee for Panama's first nighttime lighting law, in collaboration with MiAmbiente, UTP, and the Smithsonian.
- Direction of low-cost spectrometer manufacturing.
- Calculations using satellite, aircraft, and ground-based sensor data, including indices, radiative interaction, and environmental assessments.
- Supervision of undergraduate and international master's thesis work in France.
<https://indicatic.org.pa/proyecto/primera-estacion-de-contaminacion-luminica-en-panama/>

2016–2017, University of Panama, Panama City, Panama.

- Professor of computational thermodynamics for undergraduate students using Python.

2016–2017, Smithsonian Tropical Research Institute, STRI, Panama City, Panama.

- Proposed the use of a Daubechies transform for processing transient signals emitted by manatees in turbid waters.
- Processed WAV files from hydrophones using Python libraries including matplotlib, scipy, numpy, wave, and pywt.

2014–2015, Comprehensive Nuclear-Test-Ban Treaty Organization, CTBTO, Radionuclide Station RN-50, Panama City, Panama. International headquarters in Vienna, Austria.

- Database structure and management for radionuclide data.

2013, French National Radioactive Waste Management Agency, ANDRA, Paris, France.

- Analysis of redox substance concentrations controlling radionuclide transport in low- and intermediate-level radioactive nuclear waste cells.

PUBLICATIONS

- Multi-Band Zenith Amplification Factor of Madrid Night Sky Brightness Under Overcast Conditions. (2026).
<https://www.sciencedirect.com/science/article/pii/S0022407326000804>

- Evolution of Brightness and Color of the Night Sky in Madrid. (2021).
<https://doi.org/10.3390/rs13081511>
 - The Evolution of Light Pollution Using Measurements of Night Sky Brightness and Color in Madrid. (2022).
<https://eprints.ucm.es/id/eprint/72738/>
 - Synthetic RGB Photometry of Bright Stars. (2021).
<https://arxiv.org/abs/2103.17009>
 - Multi-Channel Comparison of Zenith Night Sky Brightness Between Tropical Panama and Northern Latitude Locations. Manuscript.
 - Blue Skies Over Madrid, But Not During the Day. (2022).
<https://www.idapgh.org/blue-skies-over-madrid>
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INVITED SEMINARS

- NASA, National Aeronautics and Space Administration, Jet Propulsion Laboratory, JPL, 2026.
First Light Pollution Monitoring Station in Panama: Integrating Ground-Based and Remote Sensing Techniques. Pasadena, California.
 - Smithsonian Tropical Research Institute, STRI, Panama, 2025.
First Light Pollution Monitoring Station in Panama: Integrating Ground-Based and Remote Sensing Techniques.
 - Video conference for eALAN 2020.
Changes in Night Sky Brightness and Color in Madrid During the Streetlight Transition.
https://artificiallightatnight.weebly.com/uploads/3/7/0/5/37053463/alan_booklet_v5.pdf
 - Light Pollution: Theory, Modeling, and Measurements, LPTMM, Hungary, Zselic, 2019. Poster presentation.
Evolution of Night Sky Brightness and Color in Madrid.
<https://martinaube.wixsite.com/website>
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RESEARCH FUNDING

- 2024–2026, National Secretariat of Science, Technology and Innovation. FID2024-074, USD 70,000.
 - 2024–2025, National Institute for Advanced Scientific Research in Information and Communication Technologies, USD 78,000.
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SCHOLARSHIPS

- 2017–2021, Doctoral scholarship, National Secretariat of Science and Technology and Institute for the Training and Development of Human Resources, SENACYT/IFARHU, Panama City, Panama.
 - 2016–2017, Smithsonian Tropical Research Institute, STRI. Funding awarded by the Government of the United States of America, Washington, D.C.
 - 2011–2012, Master’s scholarship, Fondation Européenne pour les Énergies de Demain, FEED, Institut de France, Paris, France.
 - 2011–2012, Master’s scholarship, IMT Atlantique, Nantes, France.
 - 2004–2011, Scholarships from secondary school through university studies, Institute for the Training and Development of Human Resources, IFARHU, Panama City, Panama.
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SPECIAL TRAINING

- Semiconductor and microelectronics workshop organized by Sandia National Laboratories and the U.S. Department of State, Panama City, Panama. 2024.
 - Specialized personnel management in nuclear power plants. Beijing and Shanghai. 2017.
 - State Meteorological Agency, AEMET. Meteorological applications in agriculture, Santa Cruz, Bolivia. 2016.
 - United Nations Department of Safety and Security, UNDSS. Basic Security in the Field I and II, BSITF I and II, Version 1.2011-10-12, May 26, 2014. 2014–2017.
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COMPUTATIONAL SKILLS

Programming and encryption: Python, C++, Shell, MySQL, LaTeX, R-Clone web technology, git software version control, and QGIS.

Operating systems and instrumentation: Unix-like systems, Linux distributions including Kali and Debian, Windows PowerShell, data security, connectivity, Raspberry Pi, astronomical all-sky cameras, and photometers.

LANGUAGES Spanish, English, and French.