

Johny Alejandro Arteaga Guarumo

CONTACT INFORMATION

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EDUCATION

Universidade Federal Fluminense, Rio de Janeiro, Brasil 2015–2019

- Ph.D. in Physics
- Advisor: Prof. Antonio Serbeto.
- Thesis: *Free Electron Laser described through the parametric interaction between three waves with Orbital Angular Momentum.*

Universidade Federal Fluminense, Rio de Janeiro, Brasil 2013–2015

- M.Sc. in Physics
- Advisor: Prof. Antonio Serbeto.
- Thesis: *Laser amplification by stimulated Raman scattering in a cold plasma*

Universidade Federal Fluminense, Rio de Janeiro, Brasil 2007–2012

- B.Sc., Physical engineer
- Advisor: Prof. John Quiroga.
- Thesis: *Study and comparison of modified gravity models $f(R)$*

PROFESSIONAL EXPERIENCE

Colorado State University 2022–Present

- **USDA UV-B Monitoring and Research Program.** Research fellowship in crop modeling using Daycent and the General Circulation Model CWRf.

Tecnological University of Uruguay 2019–Present

- **Agro-environmental engineering.** Lecturer in Mechanics, Optics for remote sensing, Applied photogrammetry, Data analysis and modeling. Member of the Earth Observation and Monitoring Lab. Research lines: Land use/ land cover interactions using the Maximum Entropy method. Spatio-temporal changes in vegetation cover by hydroclimatological variables.

Tecnological University of Uruguay 2019–2020

- **Renewable energy engineering.** Lecturer in multivariable Calculus and Numerical methods in MATLAB.

PROFESSIONAL AFFILIATIONS

- **Optics and Environment (OPEN) student chapter.** Optical Society of America. **Advisor**
- **Complex Systems and Statistical Physics Group.** The Basic Sciences Development Program (Uruguay). **Member**

FUNDED RESEARCH PROJECTS

- Evaluation of the intrinsic vulnerability and risk of contamination of the Guarani aquifer system in recharge areas in Uruguay. National agency for innovation and research (Uruguay). **Member.** 2020–2022
- Tools for Bullfrog monitoring and control. National agency for innovation and research (Uruguay). **Member** 2021–2022
- Computational simulation of the expansion of a laser-produced plasma using Particle-In-Cell. Ministry of Science, Technology and Innovation (Colombia). **Member** 2013

MENTORING **National Institute for Space Research** 2021–present

- PhD. in Applied Computing
- Co-Advisor
- Student: Johan Sebastián Duque
- Thesis: "Physical and empirical hydrological modeling of the Rio Negro basin".

Tecnological University of Uruguay 2021–present

- Professional Master degree in Data Science
- Co-Advisor
- Student: Mario García
- Thesis: "Comparison of multi-satellite precipitation products over Uruguay".

SCIENTIFIC
PUBLICATIONS

R. Munoz, C. Lara, **J. Arteaga**, et al. (2022). Long-term synchrony in satellite-derived ocean parameters in northern Patagonia. Submitted to MDPI - Remote Sensing

L. Ledesma, P. Ebert, **J. Arteaga** (2020). Analysis of the technical and operational availability of a wind farm in Uruguay. Conference: IEEE PES Transmission & Distribution Conference and Exhibition - Latin America (T&D LA). <https://ieeexplore.ieee.org/document/9354528>

K. H. Tsui, **J. A. Arteaga**, and A. Serbeto (2019). Null Poynting vector electromagnetic torus. *Physics of Plasmas*, 26, 102110. <https://doi.org/10.1063/1.5099958>

J. A. Arteaga, et al (2018). Light Spring compression in a multi-frequency Raman amplifier. *Physics of Plasmas*, 25, 12311. <https://doi.org/10.1063/1.5068770>

J. A. Arteaga, et al (2018). Amplification and Compression of Radiation Emitted by a Dense Relativistic Cold Electron Beam. *Brazilian Journal of Physics*, 49, 62. <https://doi.org/10.1007/s13538-018-00625-6>

J. A. Arteaga, et al (2017). Orbital angular momentum of a π -pulse emission by dense relativistic cold electron beam. *Physics of Plasmas*, 24, 123108 <https://doi.org/10.1063/1.5002554>

C. A. Gonzalez, **J. A. Arteaga**, et al (2012). Simulation of plume-plasma expansion with one-dimensional Particle-In-Cell. *J. Phys.: Conf. Ser.* 370, 012033, (2012)

CONFERENCE
ABSTRACTS

L. Santarosa, **J. Arteaga**, et al (2021). Modeling potential recharge for unconfined aquifers from remote sensing data. XXI Argentine Geological Congress.

J. S. Duque, L. do Santos, R. Santos, **J. Arteaga**, N. Aubet (2022). Level river forecasting using empirical hydrological modeling for Rio Negro basin Uruguay. Proceeding Series of the Brazilian Society of Computational and Applied Mathematics

TECHNICAL
SKILLS

Programming Languages: C/C++, MPI, Fortran, Mathematica, Python, R, MATLAB, Google Earth Engine.

Photogrammetric and Geographic software: Pix4D, OpenDroneMap, QGis, ArcGis.