Guillermo **Gambini**

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About me

Ph.D. in Physics, problem solver, and highly motivated to uncover the mysteries of the universe.

Personal

Nationality: Peruvian

Areas of interest

Dark Matter · Neutrinos Phenomenology





@GGRG3107

REFERENCES

James M. Cline

McGill University jcline@physics.mcgill.ca

Farinaldo S. Queiroz

International Institute of Physics farinaldo.queiroz@ufrn.br

Giorgio Torrieri

State University of Campinas torrieri@unicamp.br

SHORT RESUMÉ

I graduated in Physics from the National University of Engineering in Peru. Then, I moved to Brazil and got a Master's degree in Physics from the State University of Campinas (Unicamp) working on relativistic heavy-ion collisions. For the Ph.D., also in Physics, I got enrolled in the first joint Ph.D./cotutelle program between Unicamp and McGill University in Canada. I worked on new models of dark matter: asymmetric dark matter, heavy neutral leptons, and decaying dark matter. I also have experience in vacuum stability, 3-3-1 and B-L models, dark photons and indirect detection of dark matter.

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EDUCATION

2022 Ph.D. in Physics

McGill University & State University of Campinas

Supervisors: James M. Cline & Pedro C. de Holanda

2016 **Master of Science**

STATE UNIVERSITY OF CAMP-INAS (UNICAMP)

Supervisor: Giorgio Torrieri

2013 **Bachelor of Science**

NATIONAL UNIVERSITY OF **ENGINEERING**

Supervisor: Orlando Luis Pereyra

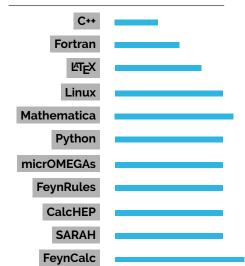
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LANGUAGE PROFICIENCY

Spanish **Portuguese English**

Mother tongue

TECHNICAL STRENGTHS



Working Experience

2024-III	Lecturer ELECTROMAGNETISM · National University of Engineering	
2024-II	Lecturer QUANTUM MECHANICS · National University of Engineering	
2023	Postdoctoral Researcher ASTROPARTICLE PHYSICS · University of São Paulo - São Carlos Institute of Physics	
2020-l	Research trainee ASTROPARTICLE PHYSICS · McGill University	1

PUBLICATION LIST

- Probing late-time annihilations of oscillating asymmetric dark matter via rotation curves of galaxies, Júlia G. Mamprim, Guillermo Gambini, Luan B. Arbeletche, Marcos Olegario, Vitor de Souza **EPJC**
- 2024 Constraining Gamma-ray Lines from Dark Matter Annihilation using Fermi-LAT and H.E.S.S. data, Lucia Angel, Guillermo Gambini, Leticia Guedes, Farinaldo S. Queiroz, Vitor de Souza JCAP - arXiv:2311.17827
- 2022 Constraints on energy scales from dark matter decay in a gauged B-L model, Guillermo Gambini, Pedro C. de Holanda, Saulo Carneiro - arXiv:2205.12353
- 2022 Constraints on Heavy Neutral Leptons interacting with a singlet scalar, James M. Cline, Guillermo Gambini - PRD - arXiv:2203.08166
- Late-Time Dark Matter Oscillations and the Core-Cusp Problem, 2021
 - James M. Cline, Guillermo Gambini, Samuel D. McDermott, Matteo Puel JHEP arXiv:2010.12583 Vacuum Stability of the Economical 3-3-1 model from Copositivity,
- Bruce Sánchez-Vega, Guillermo Gambini, Carlos Álvarez-Salazar EPJC arXiv:1811.00585
- 2017 Azimuthal instabilities of the Gribov-Levin-Ryskin equation, Guillermo Gambini, Giorgio Torrieri - EPJA - arXiv:1606.07865
- 2016 Stability of the GLR equation, Guillermo Gambini, Giorgio Torrieri - PoS (DIS2016) 045

Talks

- 2024 'Sondando a natureza da matéria escura em experimentos com neutrinos relíquias', in SU(N) special club at Unicamp in Campinas, Brazil,
- 2023 'Neutrinos e suas massas', in Pecha Kucha Seminars, IFSC - USP in São Carlos, Brazil,
- 2023 'Constraints on dark matter lines coming from the Galactic Center using Fermi-LAT data', in Spring Meeting of the Brazilian Physical Society in Niterói, Brazil,
- 2023 (by invitation) 'Probing the nature of dark matter in relic neutrino experiments', in International Institute of Physics (IIP) - Seminars in Natal, Brazil,
- 'Matéria escura assimétrica e os perfís de densidade das galáxias anãs do SPARC', in Phe-2023 noBR in Natal, Brazil,
- 2023 'A dark matter signature in relic neutrino searches', in São Paulo Advanced School on Multimessenger Astrophysics in São Paulo, Brazil,
- 2023 'Cusp-to-core conversion from late-time dark matter oscillations', in Brazilian CTA Meeting, São Carlos, Brazil.
- 2022 'Constraining Heavy Neutral Leptons in the MeV-GeV mass range interacting with a singlet scalar', en XLII National Meeting on Particle Physics and Fields in Natal, Brazil,
- 2022 'Recasting constraints on heavy neutral leptons interacting with a singlet scalar', in Canadian-Cuban-American-Mexican Graduate-Student Physics Conference (C²AM) en Ontario, Canada,
- (by invitation) 'Constraints on Heavy Neutral Leptons interacting with a singlet scalar', in 2022 Searching for long-lived particles at the LHC and beyond: Eleventh workshop of the LLP Community in Geneva, Switzerland [virtual],
- 2016 'A non-hydrodynamic explanation of v_2 ', in XXVII Workhop on Hadronic Interactions in São Paulo, Brazil,
- 2016 'Azimuthal correlations in hadronic collisions from instabilities of the initial state', in Goethe University Frankfurt ITP Transport Meeting in Frankfurt, Germany,
- 2016 'Stability structure of the GLR equation', en XXIV International Workshop on Deep Inelastic Scattering and Related Subjects in Hamburg, Germany,
- 'Azimuthal correlations in hadronic collisions from instabilities of the initial state', in XXXVIII 2015 Brazilian Meeting on Nuclear Physics en Rio de Janeiro, Brazil.

Grants and travel awards

- 2023 Postdoctoral Scholarship - São Paulo Research Foundation (FAPESP) - Brazil
- 2022 Travel award - McGill Graduate & Postdoctoral Studies - Canada
- 2021 Travel award - McGill Graduate & Postdoctoral Studies - Canada
- 2021 Trottier award - McGill Space Institute - Canada
- 2020 Trottier award - McGill Space Institute - Canada
- 2020 Ph.D. - Natural Sciences and Engineering Research Council (NSERC) - Canada
- 2020 Research Trainee - Emerging Leaders of the Americas Program (ELAP) - Canada
- 2016 Ph.D - National Council for Scientific and Technological Development (CNPq) - Brazil
- 2014 Master - National Council for Scientific and Technological Development (CNPq) -Brazil