Currículo Lattes

Francisco Bento Lustosa da Costa Duarte Pereira

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Last updated 31/12/2025

Theoretical physicist with research interests in the foundations of quantum and gravitational phenomena. He obtained his bachelors degree from the Federal University of Ceará (UFC), where he began his studies in Quantum Field Theory and RandallSundrum models. He earned his masters degree from the Fluminense Federal University (UFF), working on modified gravity and black hole thermodynamics. He completed his PhD at the Rio de Janeiro State University (UERJ), initially researching inflationary models and reheating mechanisms in the early Universe, later focusing on quantum cosmology within the de BroglieBohm framework after being introduced to this approach by Professor Nelson Pinto-Neto (CBPF). Under the supervision of Professor Santiago Bergliaffa, his doctoral research focused on the Quantum Equilibrium Hypothesis proposed by Antony Valentini, investigating possible deviations from the Born rule in the early Universe and extreme gravitational scenarios. During his PhD, he conducted a six-month research stay with Professor Valentini and his group at Clemson University (USA). From 2019 to 2024, he worked as a postdoctoral researcher under the supervision of Professor Pinto-Neto, further developing numerical methods and extending his research in quantum cosmology and quantum gravity. In 2023, he initiated a research project aimed at distinguishing quantum theories through laboratory-based quantum gravity experiments involving entanglement and decoherence. In 2025, he was awarded a research fellowship by the Ceará Foundation for the Support of Scientific and Technological Development (FUNCAP), in partnership with the National Council for Scientific and Technological Development (CNPq), to carry out research in Iguatu, northeastern Brazil. His current research includes pilot-wave theory, quantum gravity, black holes, wormholes, cosmic voids, and cosmologically coupled black hole modes, as well as laboratory quantum gravity experiments. **(Text informed by the author)**

Identification

Full name Francisco Bento Lustosa da Costa Duarte Pereira

Birth information 28/12/1988 - Rio de Janeiro/RJ - Brazil

Lattes ID 9873820806594531

Orcid ID https://orcid.org/0000-0002-4998-2629

Name used in Bibliographic Citations LUSTOSA, F. B.;LUSTOSA, FRANCISCO BENTO;LUSTOSA, F.B.

Address

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Flamengo - Rio de Janeiro
22210065, RJ - Brazil
Phone number: 021 983789365
Celular 021 983789365
Personal URL: www.quantumcosmo.com

e-Mail contact e-mail : chicolustosa@gmail.com
alternative e-mail : : chico.lustosa@uece.br

Languages

English Understanding Fluent , Speaking Fluent , Writing Fluent , Reading Fluent

Español Understanding Fluent , Speaking Functional , Writing Basic , Reading Functional

Awards

2024 Orientador de um dos tres melhores trabalhos no XXVI Seminário de Vocação Científica, PROVOC - CBPF

2023 Orientador de um dos tres melhores trabalhos no XXV Seminário de Vocação Científica, PROVOC - CBPF

2022 Orientador de um dos tres melhores trabalhos no XXIV Seminário de Vocação Científica, PROVOC - CBPF

Formal Education

2014 - 2019 Doctorate in Physics.
Universidade do Estado do Rio de Janeiro, UERJ, Rio De Janeiro, Brazil
with **Sandwich Doctorate** in Clemson University (Advisor: Antony Valentiny)
Title: Relaxamento para o Equilíbrio Quântico em Osciladores Harmônicos Acoplados, Year of degree: 2019
Advisor: Santiago Esteban Perez Bergliaffa
Scholarship from : Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, CAPES, Brazil.
Palavras-chave: Mecânica Quântica, Teoria da Onda Piloto, Teoria de de Broglie-Bohm, Equilíbrio Quântico, Cosmologia.
Grande área: Ciências Exatas e da Terra / Área: Física
Grande área: Ciências Exatas e da Terra / Área: Física
Grande área: Ciências Exatas e da Terra / Área: Física / Subárea: Física das Partículas Elementares e Campos / Especialidade: Teoria Geral de Partículas e Campos.
Keywords: Mecânica Quântica, Teoria da Onda Piloto, Teoria de de Broglie-Bohm, Equilíbrio Quântico, Cosmologia
Knowledge areas: Mecânica Quântica,Gravitação e Cosmologia,General Theory of Particles and Fields
Sectors: Scientific research and development

2012 - 2014 Master's in Physics.
Universidade Federal Fluminense, UFF, Niteroi, Brazil
Title: An□alise Termodin^amica de um Buraco Negro com Monopolo Global em Teorias f(R), Year of degree: 2014

Advisor: Maria Emilia Xavier Guimarães
Scholarship from : Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, CAPES, Brazil.
Palavras-chave: Buracos Negros, Gravitação, Termodinâmica, Teorias f(R), Defeitos Topológicos.
Grande área: Ciências Exatas e da Terra / Área: Física / Subárea: Física Geral / Especialidade: Relatividade e Gravitação.
Keywords: Buracos Negros, Gravitação, Termodinâmica, Teorias f(R), Defeitos Topológicos
Knowledge areas: Relativity and Gravitation

2009 - 2011 Graduation in Bacharelado - Física.
Universidade Federal do Ceará, UFC, Fortaleza, Brazil
Title: Paredes de Domínio geradas por kinks continuamente deformáveis em várias dimensões
Advisor: Carlos Alberto Santos Almeida
Scholarship from : Conselho Nacional de Desenvolvimento Científico e Tecnológico, CNPq, Brazil.

2007 Graduation incomplete in Bacharelado - Física.
Universidade Federal do Rio de Janeiro, UFRJ, Rio De Janeiro, Brazil
Year of interruption: 2008

2004 - 2006 High Education .
Centro Educacional Anísio Teixeira, CEAT, Brazil

1996 - 2003 Primary and Secondary Education .
Centro Educacional Anísio Teixeira, CEAT, Brazil

Postdoctorate

2019 - 2024 Postdoctorate .
Centro Brasileiro de Pesquisas Físicas, CBPF, Rio De Janeiro, Brazil
Scholarship from : Conselho Nacional de Desenvolvimento Científico e Tecnológico
Grande área: Ciências Exatas e da Terra / Área: Física / Subárea: Física Geral / Especialidade: Relatividade e Gravitação.
Grande área: Ciências Exatas e da Terra / Área: Física
Grande área: Ciências Exatas e da Terra / Área: Física

Professional Experience

Centro Brasileiro de Pesquisas Físicas - CBPF

2007 - 2007 Contract: Bolsista Voluntário , Position: Estudante e Assistente de Laboratório , Working hours (weekly): 15, Schemes of job: Centro Brasileiro de Pesquisas Físicas Part-time
Other information:
Trabalho com fabricação de filmes finos através de eletrodeposição.

2019 - 2024 Contract: Bolsista , Position: Bolsista de Produtividade, Schemes of job: Centro Brasileiro de Pesquisas Físicas Part-time
Other information:
Bolsista do Programa de Capacitação Institucional do Ministério da Ciência e Tecnologia. Também listado como formação - pós-doutorado.

2024 - 2024 Contract: Colaborador , Position: Nenhum, Schemes of job: Centro Brasileiro de Pesquisas Físicas Part-time

Activities

07/2019 - 07/2024 Research and Development, Coordenação de Cosmologia, Astrofísica e Altas Energias (COSMO)

Universidade Estadual do Ceará - UECE

2025 - Current

Projects

Projetos de pesquisa

2025 - Current Testing Quantum Gravity Theories: From the Laboratory to Black Holes and the Primordial Universe

Description: The unification of gravitational and quantum descriptions of Nature is the central problem of modern physics. This research will focus on the derivation and investigation of phenomenological signatures in quantum gravity scenarios, ranging from laboratory experiments through black hole and wormhole physics to primordial cosmology. We will employ quantum gravity phenomenology to test possible effects arising from different quantization methods as well as from different gravitational theories. In particular, we will focus on the de BroglieBohm (dBB) theory, which has already been applied in quantum cosmology to construct non-singular universe models. We aim to obtain precise predictions, propose experimental tests, and develop simulations for quantum systems in low-energy regimes, as well as for potential astrophysical or cosmological effects.We will discuss the Quantum Equilibrium Hypothesis (QEH) and the possibility of detecting violations of the Born rule in the different contexts addressed throughout the development of the research. We will assess the feasibility of testing different quantization schemes through experiments involving gravitational entanglement and gravitational decoherence. We will analyze possible gravitational corrections to measurements of the Casimir energy or the black-body force between neutral atoms, which may serve as experimental tests for modifications of quantum or gravitational theories. We will also explore the consequences of the Generalized Uncertainty Principle (GUP), estimating deformation effects in the commutation relations within the dBB theory and in different physical contexts. Using the phenomenological implications of the GUP, we will be able to estimate bounds on the parameters involved in quantum gravity theories based on already available experimental results.We will also study how quantum gravity effects may impact astrophysical and cosmological observables. Initially, we will construct black hole, wormhole, and quantum bounce solutions and theoretically analyze the stability of the resulting scenarios, both with and without the dBB theory. In the case of black holes, we intend to analyze thermodynamic properties as well as possible astrophysical observables. For wormholes, we will be interested in extending recent work by the group to better understand the formation and traversability of wormholes. We will employ the dBB theory to describe quantum systems in backgrounds containing EinsteinRosen bridges and to analyze quantum gravity effects underlying the formation and stability of these structures. The connection between our research and the ER=EPR conjecture will also be explored. Building on the authors current research, we will study cosmological bounce models using the dBB formalism and compare them with other approaches previously investigated by the group, in particular Loop Quantum Cosmology. In this context, we will analyze the classicalquantum transition of cosmological perturbations and the gravitational-wave background generated in different models.Finally, this proposal aims to strengthen the research group at the regional and national levels at the State University of Ceará (UECE) in Iguatu through interaction with a well-established research line at the Brazilian Center for Research in Physics (CBPF), led by one of the collaborators of this proposal, namely Quantum Cosmology and the de BroglieBohm theory. The experience and professional connections acquired by the author during the last five years at CBPF will contribute to expanding the UECE research groups national and international collaborations. The author also intends to contribute to the decentralization of theoretical physics research in Ceará by visiting other universities in the interior of the state for technical collaborations and participation in local scientific events.
Status: In progress Category: Projetos de pesquisa
Members: Francisco Bento Lustosa da Costa Duarte Pereira (Responsable); ; Celio Rodrigues Muniz
Funding Institution: Conselho Nacional de Desenvolvimento Científico e Tecnológico-CNPq, Fundação Cearense de Apoio ao Desenvolvimento Científico e Tecnológico-FUNCAP
Number of S&T productions: 3/

2019 - 2024 Applications of de Broglie-Bohm's Theory: Transfer of quantum non-equilibrium, cosmological perturbations out of equilibrium and the geometric hypothesis.

Description: The project consists of three lines of research based on de Broglie-Bohm's Theory, which describes quantum mechanics through continuous trajectories and allows a dynamical emergence to quantum probability through a quantum relaxation process. The first line consists of an extension of the author's doctoral thesis, studying the effects of mass and frequency variation of two quantum oscillators coupled by a time-dependent potential in the quantum relaxation process. We will also study the possibility of transferring non-equilibrium between different coupled oscillators. The second line of research consists of the study of the quantum-classical transition of perturbations that originate from states initially out of vacuum and/or out of equilibrium. Within the context of a theory with a clear classical limit it is interesting to observe the effects of the variation of the initial states considered in comparison with the CMB observations and a precise numerical estimate of the spectrum of perturbations generated by non-equilibrium or out-of-vacuum states to verify whether this can favour or eliminate these models. Finally, we intend to study the possible applications and consequences of considering the geometric hypothesis that de Broglie-Bohm's quantum theory may naturally arise from the consideration that physical laws can be represented by a mapping of a space of configurations into a two-dimensional space that describes the laws of evolution and probability.
Status: Finished Category: Projetos de pesquisa
Members: Francisco Bento Lustosa da Costa Duarte Pereira; Nelson Pinto-Neto (Responsable)
Funding Institution: Conselho Nacional de Desenvolvimento Científico e Tecnológico-CNPq
Number of S&T productions: 10/ Number of advisories: 3;

Areas of Expertise

1. Grande área: Ciências Exatas e da Terra / Área: Física
2. Grande área: Ciências Exatas e da Terra / Área: Física
3. Grande área: Ciências Exatas e da Terra / Área: Física
4. Grande área: Ciências Exatas e da Terra / Área: Física
5. Grande área: Ciências Exatas e da Terra / Área: Física
6. Grande área: Ciências Exatas e da Terra / Área: Física

S, T & A Production

Bibliographic Production

Citations

SCOPUS

Number of articles: 2 **Total of citations**: 5

Lustosa, Francisco Bento

Outras

Number of articles: 5 **Total of citations**: 20

Lustosa F B

Articles Published in Scientific Journals

1. **LUSTOSA, FRANCISCO BENTO**; PINTO-NETO, NELSON. Dynamical analysis of quantum matter bounces with dark sector mimickers. Physics of the Dark Universe. JCR, v.49, p.102013, 2025.
Keywords: Teoria de de Broglie-Bohm, Teoria da Onda Piloto, Gravidade Quântica, Fundamentos de Mecânica Quântica, Cosmologia Quântica
Knowledge areas: Relativity and Gravitation,Fundamentos de Mecânica Quântica,Gravitação Quântica
Sectors: Scientific research and development
Additional references: English. Meio de divulgação: Meio digital. Home page: [https://doi.org/10.1016/j.dark.2025.102013]

2. **LUSTOSA, F.B.**; ESTRADA, MILKO; CUNHA, M.S.; MUNIZ, C.R.. Black holes inside cosmic voids. JOURNAL OF COSMOLOGY AND ASTROPARTICLE PHYSICS. JCR, v.2025, p.052, 2025.
Keywords: Cosmologia, Buracos Negros, Thermodynamics of Black-Holes
Knowledge areas: Relativity and Gravitation
Sectors: Scientific research and development
Additional references: English. Meio de divulgação: Meio digital. Home page: [https://iopscience.iop.org/article/10.1088/1475-7516/2025/05/052/meta] ***Citações:*** WEB OF SCIENCE℠ *1*

3. **LUSTOSA, FRANCISCO BENTO**. Testes de gravitação quântica no laboratórioTests of quantum gravity in the laboratory. Cadernos de Astronomia. v.6, p.42 - 61, 2025.
Keywords: Gravidade Quântica, Mecânica Quântica, Teoria Quântica de Campos
Knowledge areas: Relativity and Gravitation,Gravitação Quântica,Mecânica Quântica
Sectors: Scientific research and development
Additional references: Portuguese. Meio de divulgação: Meio digital. Home page: [https://http://doi.org/10.47456/Cad.Astro.v6n2.49482]
This work introduces some of the main topics related to recent efforts to conduct experiments that prove thequantum nature of gravity in the laboratory. An overview of the conceptual problems involved will be presented,describing the most well-known theories as well as discussing some of the most relevant approaches for laboratoryexperiments, such as the Diósi-Penrose decoherence model. Using the formalism of canonical quantization oflinearized gravity, it is demonstrated how predictions are beginning to be extracted from the known theoriesfor a regime that is still little explored experimentally. Next, some of the main experimental proposals in theliterature are discussed, particularly the possibility of generating entanglement between two massive sources ina state of quantum superposition and the tests involving optomechanical systems. The conclusions list openproblems related to traditional methods of gravity quantization in the low-energy regime and discuss the mostpromising experimental paths to test predictions that could confirm the quantum nature of the gravitationalfield.

4. **LUSTOSA, F. B.**; N. Pinto-Neto; Antony Valentini. Evolution of quantum non-equilibrium for coupled harmonic oscillators. PROCEEDINGS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES. JCR, v.479, p.20220411, 2023.
Keywords: Equilíbrio Quântico, Osciladores Harmônicos, Simulações Numéricas, Cosmologia, Fundamentos de Mecânica Quântica
Knowledge areas: Mecânica Quântica,Gravitação e Cosmologia
Additional references: English. . Home page: [https://royalsocietypublishing.org/doi/10.1098/rspa.2022.0411] ***Citações:*** WEB OF SCIENCE℠ *5* | SCOPUS *7*

5. **LUSTOSA, FRANCISCO BENTO**; COLIN, SAMUEL; PEREZ BERGLIAFFA, SANTIAGO E.. Quantum relaxation in a system of harmonic oscillators with time-dependent coupling. PROCEEDINGS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES. JCR, v.477, p.0200606, 2021.
Keywords: Equilíbrio Quântico, Osciladores Harmônicos, Simulações Numéricas, Cosmologia
Knowledge areas: Mecânica Quântica,Gravitação e Cosmologia,Numerical Analysis
Additional references: English. Meio de divulgação: Meio digital. Home page:

[http://https://royalsocietypublishing.org/doi/abs/10.1098/rspa.2020.0606][doi:10.1098/rspa.2020.0606]
Citações: WEB OF SCIENCE 3 | SCOPUS 4

6. doi MUNIZ, CELIO R.; **LUSTOSA, FRANCISCO BENTO**; TANGPHATI, TAKOL. Einstein-Yang-Mills Regular Black Holes in Rainbow Gravity. GENERAL RELATIVITY AND GRAVITATION. JCR, v.57, p.125, 2025.
Keywords: Gravidade Quântica, Thermodynamics of Black-Holes, Sombras
Knowledge areas: Relativity and Gravitation
Sectors: Scientific research and development
Additional references: English. Meio de divulgação: Meio digital. Home page: [https://link.springer.com/article/10.1007/s10714-025-03458-2][doi:10.1007/s10714-025-03458-2]

7. doi **LUSTOSA, FRANCISCO BENTO**; GUIMARÃES, MARIA EMILIA XAVIER; FERREIRA, CRISTINE NUNES; LOPES NETO, JOAQUIM; HELAYËL-NETO, JOSÉ ABDALLA. On the Thermodynamical Black Hole Stability in the Space-Time of a Global Monopole in *f(R)*-Gravity. Journal of High Energy Physics, Gravitation and Cosmology. v.05, p.587 - 611, 2019.
Keywords: Teorias f(R), Black Hole, f(R)-Gravity, Hawking Temperature, Global Monopole, Cosmological Constant
Knowledge areas: Relativity and Gravitation,Gravitação e Cosmologia,Physical Statistics and Thermodynamics
Additional references: English. Meio de divulgação: Vários

Presentations in Events

1. **LUSTOSA, FRANCISCO BENTO**. Tabletop quantum gravity as a test of modifications of standard quantum theory, 2024. (Presentation,Presentations in Events)
Keywords: Gravidade Quântica, Fundamentos de Mecânica Quântica, Teoria de de Broglie-Bohm, Fenomenologia
Knowledge areas: Gravitação Quântica,Mecânica Quântica,Fundamentos de Mecânica Quântica
Additional references: Brasil/English. Meio de divulgação: Meio digital. Home page: https://youtu.be/Z9d3L39oD9c?si=X58WDd8ifesnYEgN; Local: Univesidade Estadual de São Paulo; Cidade: São Paulo; Evento: Minicourse on perturbative and nonperturbative treatment of quantum gravity problems; Inst.promotora/financiadora: International Center for Theoretical Physics - South American Institute for Fundamental Research

2. **LUSTOSA, FRANCISCO BENTO**. A Era dos Modelos Padrões: das partículas à cosmologia, 2023. (Seminar,Presentations in Events)
Keywords: Cosmologia, Gravitação, Teoria Quântica de Campos
Knowledge areas: Relativity and Gravitation,General Theory of Particles and Fields
Additional references: Brasil/Portuguese. Meio de divulgação: Meio digital. Home page: https://www.gov.br/cbpf/pt-br/assuntos/noticias/cbpf-recebe-3a-edicao-do-international-masterclasses-hands-on-particle-physics; Local: Centro Brasileiro de Pesquisas Físicas; Cidade: Rio de Janeiro; Evento: 3ª edição do International Masterclasses - hands on particle physics; Inst.promotora/financiadora: São Paulo Research and Analysis Center (SPRACE)

3. **LUSTOSA, FRANCISCO BENTO**. Aplicações da Teoria de de Broglie-Bohm: Transferência de não-equilíbrio quântico, perturbações cosmológicas fora do equilíbrio e a hipótese geométrica, 2022. (Presentation,Presentations in Events)
Keywords: Teoria da Onda Piloto, Teoria de de Broglie-Bohm, Fundamentos de Mecânica Quântica, Mecânica Quântica, Cosmologia
Additional references: Brasil/Portuguese. Meio de divulgação: Meio digital. Home page: https://www.youtube.com/live/LBJNPJGtMyw?si=YfzCBK0C9MMfbjHu&t=4880; Local: Centro Brasileiro de Pesquisas Físicas; Cidade: Rio de Janeiro; Evento: JORNADA PCI CBPF 2022; Inst.promotora/financiadora: Centro Brasileiro de Pesquisas Físicas

4. **LUSTOSA, FRANCISCO BENTO**. Wave Function and Probabilities in Quantum Cosmology, 2022. (Seminar,Presentations in Events)
Keywords: Teoria de de Broglie-Bohm, Teoria da Onda Piloto, Fundamentos de Mecânica Quântica, Gravidade Quântica
Additional references: Chile/English. Meio de divulgação: Meio digital. Home page: https://6b3ebe83-6094-4b24-a324-00e2936d8755.filesusr.com/ugd/6da504_016d155ffc0a473bae1bbddc2ef1a43a.pdf; Local: Pontifical Catholic University of Chile; Cidade: Santiago; Evento: 3rd Chilean Conference on Philosophy of Physics; Inst.promotora/financiadora: Pontifical Catholic University of Chile

5. CARAMES, T. R. P.; **LUSTOSA, FRANCISCO BENTO**; Guimarães, M. E. X. . Thermodynamical Analysis of the Black Hole with a Global Monopole in a f(R) Theory, 2013. (Seminar,Presentations in Events)
Keywords: Black-Holes, Thermodynamics of Black-Holes, f(R)-Gravity
Knowledge areas: Relativity and Gravitation,General Theory of Particles and Fields
Additional references: Brasil/English. Meio de divulgação: Meio digital. Home page: https://mesonpiold.cbpf.br/iwara/Apresentacoes_Iwara2013/F_Lustosa.pdf; Local: Centro Brasileiro de Pesquisas Físicas; Cidade: Rio de Janeiro; Evento: International Workshop on Astronomy and Relativistic Astrophysics; Inst.promotora/financiadora: Centro Brasileiro de Pesquisas Físicas

Educação e Popularização de C&T

Articles Published in Scientific Journals

1. doi **LUSTOSA, FRANCISCO BENTO**. Testes de gravitação quântica no laboratórioTests of quantum gravity in the laboratory. Cadernos de Astronomia. v.6, p.42 - 61, 2025.
Keywords: Gravidade Quântica, Mecânica Quântica, Teoria Quântica de Campos
Knowledge areas: Relativity and Gravitation,Gravitação Quântica,Mecânica Quântica
Sectors: Scientific research and development
Additional references: Portuguese. Meio de divulgação: Meio digital. Home page: [https://http://doi.org/10.47456/Cad.Astro.v6n2.49482]
This work introduces some of the main topics related to recent efforts to conduct experiments that prove thequantum nature of gravity in the laboratory. An overview of the conceptual problems involved will be presented,describing the most well-known theories as well as discussing some of the most relevant approaches for laboratoryexperiments, such as the Diósi-Penrose decoherence model. Using the formalism of canonical quantization oflinearized gravity, it is demonstrated how predictions are beginning to be extracted from the known theoriesfor a regime that is still little explored experimentally. Next, some of the main experimental proposals in theliterature are discussed, particularly the possibility of generating entanglement between two massive sources ina state of quantum superposition and the tests involving optomechanical systems. The conclusions list openproblems related to traditional methods of gravity quantization in the low-energy regime and discuss the mostpromising experimental paths to test predictions that could confirm the quantum nature of the gravitationalfield.

Presentations in Events

1. **LUSTOSA, FRANCISCO BENTO**. A Era dos Modelos Padrões: das partículas à cosmologia, 2023. (Seminar,Presentations in Events)
Keywords: Cosmologia, Gravitação, Teoria Quântica de Campos
Knowledge areas: Relativity and Gravitation,General Theory of Particles and Fields
Additional references: Brasil/Portuguese. Meio de divulgação: Meio digital. Home page: https://www.gov.br/cbpf/pt-br/assuntos/noticias/cbpf-recebe-3a-edicao-do-international-masterclasses-hands-on-particle-physics; Local: Centro Brasileiro de Pesquisas Físicas; Cidade: Rio de Janeiro; Evento: 3ª edição do International Masterclasses - hands on particle physics; Inst.promotora/financiadora: São Paulo Research and Analysis Center (SPRACE)

Participação em eventos, congressos, exposições, feiras e olimpíadas

1. **JORNADA PCI CBPF 2022**, 2022. (Other). Applications of de Broglie-Bohm's Theory: Transfer of quantum non-equilibrium, cosmological perturbations out of equilibrium and the geometric hypothesis..

Orientações e Supervisões

Academic Advisory

Academic Advisory - concluded

Scientific Initiation

1. Luíza Monteiro Ferreira e Paula Juliana Borges Frickes. **Effects of De Broglie-Bohm Quantization on Black Hole Shadows**. 2024. Scientific Initiation (Programa de Vocação Científica) - Centro Brasileiro de Pesquisas Físicas. Inst. financiadora: Conselho Nacional de Desenvolvimento Científico e Tecnológico
Keywords: Buracos Negros, Teoria de de Broglie-Bohm, Sombras
Knowledge areas: Gravitação,Gravitação Quântica,Mecânica Quântica
Additional references: Brasil/Portuguese. . Home page: https://www.gov.br/cbpf/pt-br/formacao-cientifica/educacao-cientifica/provoc

2. Danillo Valentino e Giovanna Barbosa. **Primordial Black Holes: their relation with Dark Matter and the Planet 9**. 2021. Scientific Initiation - Centro Brasileiro de Pesquisas Físicas. Inst. financiadora: Conselho Nacional de Desenvolvimento Científico e Tecnológico
Keywords: Buracos Negros, Cosmologia, Matéria Escura, Astronomia
Knowledge areas: Cosmology,Relativity and Gravitation
Additional references: Brasil/Portuguese. . Home page: https://youtu.be/uPpZiKGnoGs
Advisor as part of the Scientific Vocation program of the Brazilian Center for Research in Physics

3. Millena Avendano. **The Science of Gravitational Waves**. 2020. Scientific Initiation - Centro Brasileiro de Pesquisas Físicas. Inst. financiadora: Conselho Nacional de Desenvolvimento Científico e Tecnológico
Keywords: Ondas Gravitacionais
Knowledge areas: Relativity and Gravitation
Additional references: Brasil/Portuguese. . Home page: https://youtu.be/olT_12oolaA
Advisor as part of the Scientific Vocation Program of the Brazilian Center for Research in Physics

Eventos

Eventos

Participation In Events

1. **Minicourse on perturbative and nonperturbative treatment of quantum gravity problems**, 2024. (Seminar) Tabletop quantum gravity as a test of modifications of standard quantum theory.
2. Presentation of Poster / Painel no(a) **Witnessing Quantum Aspects of Gravity in a Lab**, 2024. (Congress) Pilot-waves for quantum fields of delocalized sources.
3. Presentation of Poster / Painel no(a) **XIX Brazilian School of Cosmology and Gravitation (BSCG)**, 2024. (Congress) Phase space analysis of possible matter bounce models in the presence of scalar field and a matter fluid.
4. Presentation of Poster / Painel no(a) **XIII Workshop de Física Teórica**, 2023. (Workshop) Evolution of quantum non-equilibrium for coupled harmonic oscillators.
5. Apresentação Oral in **III ENCONTRO DE FÍSICA TEÓRICA GIFT-UNIFEI**, 2022. (Congress) Evolution of quantum non-equilibrium for coupled harmonic oscillators.
6. **JORNADA PCI CBPF 2022**, 2022. (Other) Applications of de Broglie-Bohm's Theory: Transfer of quantum non-equilibrium, cosmological perturbations out of equilibrium and the geometric hypothesis..
7. Apresentação Oral in **Third Chilean Conference on the Philosophy of Physics**, 2022. (Congress) Wave Function and Probabilities in Quantum Cosmology.
8. Presentation of Poster / Painel no(a) **XVIII Brazilian School of Cosmology and Gravitation**, 2022. (Congress) Evolution of quantum non-equilibrium for coupled harmonic oscillators.
9. Presentation of Poster / Painel no(a) **Challenges in Modern Cosmology: Dark Matter and Dark Energy**, 2014. (Seminar) Thermodynamical Analysis of the Black Hole with a Global Monopole in a f(R) Theory.
10. Apresentação Oral in **Sixth International Workshop on Astronomy and Relativistic Astrophysics013**, 2013. (Workshop) Thermodynamical Analysis of the Black Hole with a Global Monopole in a f(R) Theory.
11. Presentation of Poster / Painel no(a) **Encontros Universitários**, 2011. (Congress) Domain Walls Constructed with a Scalar Field.
12. Apresentação Oral in **Encontros Universitários**, 2010. (Congress) Continuosly Deformable Topological Structure.

Event production

1. N. Pinto-Neto; **LUSTOSA, FRANCISCO BENTO**. XIX Brazilian School of Cosmology and Gravitation (BSCG), 2024. (Congress, Event Production)
Keywords: Cosmologia, Gravitação, Gravidade Quântica
Knowledge areas: Relativity and Gravitation,General Theory of Particles and Fields
Additional references: Brasil/English. Meio de divulgação: Meio digital

Total of Production

Bibliographic Production

Articles published in scientific journal	7
Presentations in Events (Presentation)	2
Presentations in Events (Seminar)	3

Techinical Production

Programa de computador sem registro	1

Academic Advisories

Academic Advisory - concluded (scientific initiation)	4

Events

Participation in events (congress)	10

Participation in events (seminar)	3
Participation in events (workshop)	3
Participation in events (meeting)	1
Participation in events (other)	2
Event Production (congress)	1

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