

Pedro G. S. Fernandes

Curriculum Vitae



pgsfernandes@cp3.sdu.dk
INSPIRE-HEP, Google Scholar
Personal Website
GitHub

ACADEMIC APPOINTMENTS

- OCT 2024 – **Postdoctoral Researcher**
Institut für Theoretische Physik
University of Heidelberg, Germany
- OCT 2023 – OCT 2024 **Postdoctoral Researcher**
CP₃-Origins, Quantum Gravity Group
University of Southern Denmark, Denmark
- OCT 2022 – SET 2023 **Postdoctoral Researcher**
Particle Cosmology Group
University of Nottingham, UK

EDUCATION

- 2019 – 2023 **Doctor of Philosophy in Physics**
[LINK TO DISSERTATION](#)
Supervisors: David Mulryne and Timothy Clifton
Queen Mary University of London
- 2017 – 2019 **Master of Science in Physics**
[LINK TO DISSERTATION](#)
Supervisors: Carlos Herdeiro and Eugen Radu
Instituto Superior Técnico, University of Lisbon
- 2014 – 2017 **Bachelor of Physics**
Instituto Superior Técnico, University of Lisbon

TEACHING EXPERIENCE

- 2020-2023 **Statistical Physics; Thermodynamics; Quantum Mechanics; Astrophysics**
Queen Mary University of London
- 2019 **Thermodynamics and Structure of Matter**
[Excellence in teaching award](#)
Instituto Superior Técnico, University of Lisbon

ACADEMIC SERVICE

Invited to referee for *Physical Review Letters*, *Physical Review D*, *Classical and Quantum Gravity*, *Physics Letters B*, *European Physical Journal C*, *General Relativity and Gravitation*, and others.

COMPUTER SKILLS

- PROGRAMMING C, C++, Python, Julia, Mathematica
Javascript, HTML, JQuery, PHP
- OTHER \LaTeX , Linux, SQL
- SCIENTIFIC Author of *SpinningBlackHoles*

PUBLICATIONS

Full list of publications available on my [INSPIRE-HEP](#) and [Google Scholar](#) profiles. **Bibliometric metrics:** 16 papers, 980 citations, 69.5 citations per refereed paper (average), h-index=12 (data from inspire-hep).

AWARDS AND FELLOWSHIPS

- OCT 2024 **Postdoctoral Fellowship**
University of Heidelberg
- OCT 2023 **Postdoctoral Fellowship**
University of Southern Denmark
- OCT 2022 **Leverhulme Trust Fellowship**
University of Nottingham
- NOV 2019 **Royal Society PhD Grant**
RGF/EA/180022
Queen Mary University of London
- 2019 **FCT-CERN Research Grant**
CERN/FIS-PAR/0027/2019
Collaborator, FCT-CERN
- 2019 **Excellence in Teaching Award**
Instituto Superior Técnico, U. Lisbon
- FEB 2019 – JUL 2019 **Teaching Fellowship**
Instituto Superior Técnico, U. Lisbon
- JUL 2018 – JAN 2019 **Research Fellowship**
UID/CTM/04540/2013 CEFEMA, RD 0472
Department of Physics
Instituto Superior Técnico, U. Lisbon
- JUN 2017 – JUN 2018 **Research Fellowship**
SCIENTIFIC INITIATION GRANT
Department of Physics
Instituto Superior Técnico, U. Lisbon

INTERNATIONAL VISITS

- JUL. 2024 Perimeter Institute for Theoretical Physics, Canada
- FEB. 2024 Université Paris-Saclay, IJCLab, France

LANGUAGE SKILLS

- PORTUGUESE Native speaker
- ENGLISH Fluent – TOEFL 111/120, IELTS 8/9

SELECTED CONFERENCES AND TALKS

- Gravity Shape Pisa 2024, invited keynote speaker, Oct 2024
- 50 Years of Horndeski Gravity, Perimeter Institute for Theoretical Physics, speaker, Jul 2024
- Université Paris-Saclay, IJCLab, invited seminar, Feb 2024
- AstroParticle Symposium 2023, Institut Pascal, Paris, invited keynote speaker, Nov 2023
- Nottingham Centre of Gravity Meeting, University of Nottingham, invited seminar, Apr 2023
- Imperial College London, invited seminar, Feb 2023
- XV Black Holes Workshop, ISCTE, Lisbon, keynote speaker, Dec 2022
- Gravity @ Prague, Charles University Prague, Attendant, Set 2022
- Center for Gravitation and Cosmology, Yangzhou University, invited webinar, Aug 2022
- London Cosmology Discussion Meeting (LCDM), invited speaker, Dec 2021
- 50th BUSSTEPP School, Queen Mary University of London, speaker, Jan 2021 (*award for best session talk*)
- XIII Black Holes Workshop, Instituto Superior Técnico, speaker, Dec 2020
- Quantum Gravity group, University of Groningen, invited webinar, May 2020
- Gravitational Geometry and Dynamics group, University of Aveiro, invited webinar, May 2020
- COSMONATA, Faculty of Sciences University of Lisbon, invited seminar, Dec 2019
- 4th CENTRA Meeting, Faculty of Sciences University of Lisbon, speaker, Mar 2019
- XI Black Holes Workshop, Instituto Superior Técnico, Attendant, Dec 2018

LIST OF PUBLICATIONS

- [1] Giulia Ventagli, Pedro G. S. Fernandes, Andrea Maselli, Antonio Padilla, and Thomas P. Sotiriou. Neutron stars and the cosmological constant problem. 4 2024. [arXiv:2404.19012](#).
- [2] Pedro G. S. Fernandes, Clare Burrage, Astrid Eichhorn, and Thomas P. Sotiriou. Shadows and properties of spin-induced scalarized black holes with and without a Ricci coupling. *Phys. Rev. D*, 109(10):104033, 2024. [arXiv:2403.14596](#).
- [3] Astrid Eichhorn, Pedro G. S. Fernandes, Aaron Held, and Hector O. Silva. Breaking black-hole uniqueness at supermassive scales. 12 2023. [arXiv:2312.11430](#).
- [4] Clare Burrage, Pedro G. S. Fernandes, Richard Brito, and Vitor Cardoso. Spinning black holes with axion hair. *Class. Quant. Grav.*, 40(20):205021, 2023. [arXiv:2306.03662](#).
- [5] Pedro G. S. Fernandes. Rotating black holes in semiclassical gravity. *Phys. Rev. D*, 108(6):L061502, 2023. [arXiv:2305.10382](#).
- [6] Pedro G. S. Fernandes and David J. Mulryne. A new approach and code for spinning black holes in modified gravity. *Class. Quant. Grav.*, 40(16):165001, 2023. [arXiv:2212.07293](#).
- [7] Pedro G. S. Fernandes, David J. Mulryne, and Jorge F. M. Delgado. Exploring the Small Mass Limit of Stationary Black Holes in Theories with Gauss-Bonnet Terms. *Class. Quant. Grav.*, 39:235015, 2022. [arXiv:2207.10692](#).
- [8] Pedro G. S. Fernandes, Pedro Carrilho, Timothy Clifton, and David J. Mulryne. The 4D Einstein–Gauss–Bonnet theory of gravity: a review. *Class. Quant. Grav.*, 39(6):063001, 2022. [arXiv:2202.13908](#).
- [9] Pedro G. S. Fernandes, Pedro Carrilho, Timothy Clifton, and David J. Mulryne. Black holes in the scalar-tensor formulation of 4D Einstein-Gauss-Bonnet gravity: Uniqueness of solutions, and a new candidate for dark matter. *Phys. Rev. D*, 104(4):044029, 2021. [arXiv:2107.00046](#).
- [10] Pedro G. S. Fernandes. Gravity with a generalized conformal scalar field: theory and solutions. *Phys. Rev. D*, 103(10):104065, 2021. [arXiv:2105.04687](#).
- [11] Timothy Clifton, Pedro Carrilho, Pedro G. S. Fernandes, and David J. Mulryne. Observational Constraints on the Regularized 4D Einstein-Gauss-Bonnet Theory of Gravity. *Phys. Rev. D*, 102(8):084005, 2020. [arXiv:2006.15017](#).
- [12] Pedro G. S. Fernandes, Pedro Carrilho, Timothy Clifton, and David J. Mulryne. Derivation of Regularized Field Equations for the Einstein-Gauss-Bonnet Theory in Four Dimensions. *Phys. Rev. D*, 102(2):024025, 2020. [arXiv:2004.08362](#).
- [13] Pedro G. S. Fernandes. Charged black holes in AdS spaces in 4D Einstein Gauss-Bonnet gravity. *Phys. Lett. B*, 805:135468, 2020. [arXiv:2003.05491](#).
- [14] Pedro G. S. Fernandes. Einstein–Maxwell-scalar black holes with massive and self-interacting scalar hair. *Phys. Dark Univ.*, 30:100716, 2020. [arXiv:2003.01045](#).
- [15] Pedro G. S. Fernandes, Carlos A. R. Herdeiro, Alexandre M. Pombo, Eugen Radu, and Nicolas Sanchis-Gual. Charged black holes with axionic-type couplings: Classes of solutions and dynamical scalarization. *Phys. Rev. D*, 100(8):084045, 2019. [arXiv:1908.00037](#).
- [16] Pedro G. S. Fernandes, Carlos A. R. Herdeiro, Alexandre M. Pombo, Eugen Radu, and Nicolas Sanchis-Gual. Spontaneous Scalarisation of Charged Black Holes: Coupling Dependence and Dynamical Features. *Class. Quant. Grav.*, 36(13):134002, 2019. [arXiv:1902.05079](#).