Hugo	R.	$\mathbf{C}.$	Ferreira
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Contact Information	Post-doctoral researcher Istituto Nazionale di Fisica Nucleare	Nationality: Portuguese			
	(INFN) – Sezione di Pavia Via Agostino Bassi, 6 27100 Pavia (PV) Italy	<i>E-mail:</i> Hugo.Ferreira@pv.infn.it <i>WWW:</i> hugorcf.weebly.com			
Research Interests	General Relativity, Black Hole Physics, Strong Gravity, Astrophysics, Gravitationa Wave Phenomenology, Classical and Quantum Field Theory in curved backgrounds				
Employment	Istituto Nazionale di Fisica Nucleare (INFN) – Pavia Section, Pavia, Italy				
	Post-doctoral researcher, 2015-2017				
Education	University of Nottingham , Nottingham, UK				
	PhD, Mathematics, 2011-2015				
	 Thesis Topic: Quantum Field Theory on rotating black hole spacetimes Supervisor: Dr Jorma Louko 				
	University of Cambridge, Cambridge, UK				
	MASt, Applied Mathematics (Part III of the Mathematical Tripos), 2010-2011				
	• Grade: Distinction				
	 Part III Essay topic: Quantum Field Theory in Curved Spacetime Part III essay supervisor: Professor Malcolm Perry. 				
	Instituto Superior Técnico, Lisbon, Portugal				
	$Mestre~(\mathrm{MSc}),$ Technological Physics Engineering (Physics branch), 2008-2010				
	 Final average: 18/20 Thesis Topic: CP Violation and Flavour-Changing Neutral Currents with an additional Vector-like Quark Supervisor: Dr Joaquim Silva-Marcos 				
	Licenciado (BSc), Technological Physics Engineering, 2005-2008				
	• Final average: 18/20				
Academic Experience	Universidad Nacional Autónoma de México, Mexico City, Mexico				
	2-month research visit to the Gravitation and Field Theory Group of the Instituto de Ciencias Nucleares, October-December 2017.				
	University of Maryland, College Park, MD, USA				
	1-month research visit to the Gravitational Theory Group under the supervision of Prof Bei-Lok Hu (through the Universitas 21 scheme), February 2014.				
PhD students supervised	Francesco Bussola (2016-2017), Pavia Uz Dappiaggi).	niversity (co-supervised with Dr Claudic			

TEACHING	University of Nottingham , Nottingham, UK
EXPERIENCE	Postgraduate student teacher (demonstrations and coursework marking)
	 Complex Functions (2nd year course), Spring term, 2014/2015. Engineering Mathematics 1 (1st year course), Autumn term, 2014/2015. Introduction to Mathematical Physics (2nd year course), Autumn and Spring terms 2012/2013.
	 Mathematics for Physics and Astronomy (1st year course), Autumn and Spring terms 2011/2012, 2014/2015. Mathematical Techniques for Electrical and Electronic Engineers 1 (1st year course), Autumn term 2011/2012.
Awards	Istituto Nazionale di Fisica Nucleare (INFN) Post-doctoral Fellowship in Theoretical Physics (Geometrical Methods in Quantum Field Theories and Applications) at the Pavia Section of the INFN, Italy, 2015
	Universitas 21 Prize Scholarship for a 1-month visit to the Gravitational Theory Group of the University of Maryland, USA, 2014.
	Institute of Physics (IOP) Research Student Conference Fund bursary awarded by the Gravitational Physics Group to attend and give a talk at the 20th International Conference on General Relativity and Gravitation, 2013.
	PhD scholarship from Fundação para a Ciência e Tecnologia (FCT), 2010-2014.
	6 month Fundação para a Ciência e Tecnologia (FCT) young researcher grant, 2009.
	Instituto Superior Técnico (IST) merit award 2006/2007.
Refereed Journal Publications	 F. Bussola, C. Dappiaggi, H. R. C. Ferreira and I. Khavkine, Ground state for a massive scalar field in BTZ spacetime with Robin boundary conditions, Phys. Rev. D 96, 105016 (2017), arXiv:1708.00271 [gr-qc], doi:10.1103/PhysRevD.96.105016.
	 C. Dappiaggi and H. R. C. Ferreira, On the algebraic quantization of a massive scalar field in anti-de-Sitter spacetime, Rev. Math. Phys. Vol. 30 1850004 (2018), arXiv:1701.07215 [math-ph], doi:10.1142/S0129055X18500046.
	[3] H. R. C. Ferreira and C. A. R. Herdeiro, Stationary scalar clouds around a BTZ black hole, Phys. Lett. B 773, 129 (2017) arXiv:1707.08133 [gr-qc], doi:10.1016/j.physletb.2017.08.017.
	[4] C. Dappiaggi and H. R. C. Ferreira, Hadamard states for a scalar field in anti- de Sitter spacetime with arbitrary boundary conditions, Phys. Rev. D 94 12, 125016 (2016), arXiv:1610.01049 [gr-qc], doi:10.1103/PhysRevD.94.125016.
	 [5] H. R. C. Ferreira, Renormalized vacuum polarization of rotating black holes, Int. J. Mod. Phys. D 24 09, 1542007 (2015), arXiv:1502.01336 [gr-qc], doi:10.1142/S0218271815420079.
	 [6] H. R. C. Ferreira and J. Louko, Renormalized vacuum polarization on rotating warped AdS3 black holes, Phys. Rev. D 91 2, 024038 (2015), arXiv:1410.5983 [gr-qc], doi:10.1103/PhysRevD.91.024038.
	 H. R. C. Ferreira, Stability of warped AdS3 black holes in Topologically Massive Gravity under scalar perturbations, Phys. Rev. D 87, 124013 (2013), arXiv:1304.6131 [gr-qc], doi:10.1103/PhysRevD.87.124013.
	[8] G. C. Branco, H. R. C. Ferreira, A. G. Hessler and J. I. Silva-Marcos, Univer- sality of Strength of Yukawa Couplings, Quark Singlets and Strength of CP Violation, JHEP 1205 , 001 (2012), arXiv:1101.5808 [hep-ph], doi:10.1007/JHEP05(2012)001.

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- H. R. C. Ferreira and C. A. R. Herdeiro, Superradiant instabilities in the Kerrmirror and Kerr-AdS black holes with Robin boundary conditions (2017), arXiv:1712.03398 [gr-qc].
- [10] C. Dappiaggi, H. R. C. Ferreira and C. A. R. Herdeiro, Superradiance in BTZ black hole with Robin boundary conditions (2017), arXiv:1710.08039 [gr-qc].
- [11] H. R. C. Ferreira, Quantum field theory on rotating black hole spacetimes (PhD thesis) (2015), arXiv:1509.07683 [gr-qc].
- INVITED TALKS [12] Scalar fields in AdS with arbitrary boundary conditions, Seminario de Física Matemática, Centro de Ciencias Matemáticas, Universidad Nacional Autónoma de México, Mexico, 13 November 2017.
 - [13] Superradiance in BTZ black hole with Robin boundary conditions, Seminario de Geometría y Gravitación, Departamento de Física, Cinvestav, Mexico, 13 November 2017.
 - [14] Superradiance in BTZ black hole with Robin boundary conditions, Seminario de Gravitación y Teoría de Campos, Instituto de Ciencias Nucleares, Universidad Nacional Autónoma de México, Mexico, 25 October 2017.
 - [15] Scalar fields in BTZ black hole with Robin boundary conditions, Mathematical Physics Seminar, University of Nottingham, UK, 31 August 2017.
 - [16] Scalar fields in AdS with arbitrary boundary conditions, at Current Problems in Theoretical Physics, Vietri sul Mare, Italy, 11 April 2017.
 - [17] Application of the Sturm-Liouville theory to classical and quantum field theory in anti-de Sitter spacetime, at Microlocal analysis: a tool to explore a quantum world, Genova, Italy, 12 January 2017.
 - [18] Application of the Sturm-Liouville theory to classical and quantum field theory in anti-de Sitter spacetime, CAMGSD PDE Seminar, Instituto Superior Técnico, Lisbon, Portugal, 9 November 2016.
 - [19] Scalar fields in AdS with arbitrary boundary conditions and associated two-point functions for the ground state, Gr@v seminar, Aveiro University, Portugal, 2 November 2016.
 - [20] Construction of states for a quantum field theory in the bulk of asymptotically anti-de Sitter spacetimes, Mathematical Physics Seminar, University of Nottingham, UK, 17 February 2016.
 - [21] Warped AdS₃ black holes: classical mode stability, Gr@v seminar, Aveiro University, Portugal, 16 July 2014.
 - [22] Warped AdS₃ black holes: classical stability and quantum field theory, School of Mathematics and Statistics, University of Sheffield, UK, 3 June 2014.
 - [23] Warped AdS₃ black holes: classical stability and quantum field theory, Department of Physics, University of Maryland, Gravity Theory Seminar, 26 February 2014.
 - [24] Warped AdS₃ black holes: classical stability and quantum field theory, DAMTP, University of Cambridge, DAMTP Friday GR Seminar, 22 November 2013.
 - [25] Warped AdS₃ black holes: classical stability and quantum field theory, School of Mathematics, Mathematical Physics Seminar, University of York, UK, 21 November 2013.
 - [26] Warped AdS₃ Black Holes: Are They Classically Stable?, CENTRA Seminar, Instituto Superior Técnico, Lisbon, Portugal, 12 September 2013.

Conference Talks

- [27] Superradiance in the BTZ black hole, at X Black Holes Workshop 2017, Aveiro, Portugal, 19 December 2017.
- [28] On the algebraic quantization of a massive scalar field in anti-de Sitter spacetime, at 40th LQP Workshop "Foundations and Constructive Aspects of Quantum Field Theory", Max-Planck institute for Mathematics in the Sciences, Leipzig, Germany, 23 June 2017.
- [29] Scalar fields in AdS with arbitrary boundary conditions, at IX Black Holes Workshop 2016, Guimarães, Portugal, 19 December 2016.
- [30] Anti-de Sitter, scalar fields and boundary conditions, at Spanish-Portuguese Relativity Meeting – One Hundred Years of the Schwarzschild Solution, Lisbon, Portugal, 14 September 2016.
- [31] Quantum states for a scalar field on AdS, 38th LQP Workshop "Foundations and Constructive Aspects of QFT", TUM, Munich, 28 May 2016.
- [32] Renormalized vacuum polarization of rotating black holes, at VII Black Holes Workshop 2014, Aveiro, Portugal, 19 December 2014.
- [33] Warped AdS₃ Black Holes: Are They Classically Stable?, at BritGrav 14, Cambridge, UK, 31 March 2014.
- [34] Warped AdS₃ black holes: are they classically stable?, at VI Black Holes Workshop 2013, Braga, Portugal, December 2013.
- [35] Warped AdS_3 black holes: instabilities and quantum effects, at Cracow School of Theoretical Physics, Zakopane, Poland, July 2013.
- [36] Warped AdS₃ black holes: are they stable?, at BritGrav 2013, Sheffield, United Kingdom, April 2013.
- [37] Quantum effects on Warped AdS₃ Black Holes in 3D Topologically Massive Gravity, at V Black Holes Workshop 2012, Lisbon, Portugal, December 2012.
- [38] Quantum effects on Warped AdS_3 Black Holes in 3D Topologically Massive Gravity, at the Student conference on Mathematical and Theoretical Aspects of Quantum Mechanics, Nottingham, United Kingdom, November 2012.
- CONFERENCE [39] Warped AdS_3 black holes: instabilities and quantum effects, at 20th Interna-POSTERS [39] Warped AdS_3 black holes: instabilities and quantum effects, at 20th International Conference on GR and Gravitation, Warsaw, Poland, July 2013.
- IT SKILLS Numerical Analysis and Computer Programming:
 - Mathematica (proficient); C, C++, Python (basic level).

Desktop Editing and Productivity Software:

• LAT_EX , Microsoft Office.

Operating Systems:

- Microsoft Windows, Linux (Ubuntu, Fedora).
- LANGUAGE Portuguese (native speaker) SKILLS English (fluent, C2 level) Italian (advanced, C1 level)
 - Last updated: January 2018.