

Curriculum Vitæ

Guilherme Raposo

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Personal Information:

Guilherme Martinho dos Santos Raposo
Date of Birth: 14/10/1993

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Education and Training:

Sapienza University of Rome - Physics Department:

- 2017 - Present PhD in Physics;
• Supervisor: Dr. Paolo Pani;

CENTRA/Instituto Superior Técnico - Lisbon University:

- 2011 - 2017 Integrated Master's Degree in Engineering Physics;
2nd Cycle – Master of Science in Engineering Physics:
• Conclusion date: 13 January 2017;
• Master's degree grade: 17/20;
• Master's dissertation:
– Title: Relativistic Tidal Love numbers: Tests of strong-field gravity;
– Grade: 19/20
– Supervisor: Prof. Dr. Vítor Cardoso;
1st Cycle – Bachelor of Science in Engineering Physics:
• Conclusion date: 04 July 2014;
• Bachelor's degree grade: 16/20;

Escola Secundária Padre Alberto Neto:

- 2006 - 2011 Ensino Secundário (Portuguese High School Degree, A-level equivalent);
- Final Grade: 19/20.

Research Interests:

- **General Relativity and Gravitation:** Gravitational waves, modified gravity, experimental tests of gravity, compact objects, cosmology;
- **Fundamental and Particle Physics;** Dark matter, dark energy, field theory in curved spacetimes;
- **Quantum Information:** Quantum information theory, entanglement theory, quantum computation;

Honors and Awards:

- **PhD Scholarship:** Awarded a PhD scholarship for Foreign Students Educated Abroad by Sapienza University of Rome.
- **Best Master Thesis in Astrophysics and Gravitation:** Awarded the prize for best master thesis in astrophysics and gravitation by the Physics Department of IST during the year of 2016/2017.
- **Academic Merit Diploma:** Distinguished in the years 2011–2012 and 2012–2013.

Internships and Extracurricular Activities:

- 2015 - 2017 **Diferencial, Student Newspaper of IST**
- Advertisement Managing, redaction, proofreading;
- 2013 - 2014 **Laboratório de Instrumentação e Física Experimental de Partículas (LIP)**
- Summer Internship in LIP, an experimental physics laboratory, under the supervision of Professor Mário Pimenta. The work developed was continued during the course.
- 2012 - Present **Tutor of Mathematics and Physics to High School and University students**
- 2012 - 2014 **Núcleo de Física do Instituto Superior Técnico (NFIST):**
- Collaborator of NFIST (Physics group of IST for science outreach), in the groups CIRCO and ASTRO developing activities for science awareness.

Workshops, Conferences and Summer Schools:

- 2018 **Dublin Summer School on Gravitational Wave Source Modelling** (Participant)
- 2018 **Current Problems in Theoretical Physics (PAFT 2018)** (Participant)
- 2018 **Gravity@Malta2018** (Participant)
- 2018 **X Black Holes Workshop** (Participant and Speaker)
- 2017 **New Frontiers in Gravitational Wave Astrophysics** (Participant)
- 2016 **100 Years of the Schwarzschild Solution** (Participant and Speaker)
- 2016 **8th School of Astrophysics and Gravitation (EAG8)** (Participant)
- 2015 **VIII Black Hole Workshop** (Participant)
- 2015 **GR 100 years in Lisbon** (Participant)
- 2015 **One Hundred Years of Strong Relativity** (Participant)

Affiliations:

- 2017 - Present **PhD student and Researcher in DarkGra Project**
- 2015 - Present **Portuguese Society of Relativity and Gravitation**
- 2014 - 2017 **Multidisciplinary Center of Astrophysics (CENTRA):**
- Member of CENTRA where the Master thesis was carried out under the supervision of Professor Dr. Vítor Cardoso.

Scientific Presentations:

- 2016 **Parallel Talk, *Multipole moments of exotic ultracompact objects*, X Black Holes Workshop, Aveiro, Portugal;**
- 2016 **Parallel Talk, *Love Numbers of Black Holes*, 100 Years of the Schwarzschild Solution, Lisbon, Portugal;**
- Link for the presentation: <https://erep2016.tecnico.ulisboa.pt/Parallel/Monday/Raposo.pdf>
- 2016 **Poster presentation, *Love Numbers in GR*, Jornadas da Engenharia Física Tecnológica (III JEF), Lisbon, Portugal;**
- JEF is an event organized by the national students of Physics and Engineering Physics.
- 2016 **Group meeting presentation, *Love numbers in modified gravity*, GRIT team meeting;**
- Participation in the GRIT's group meetings (CENTRA's research group for gravitation and relativity) with a presentation of the work being developed in the MSc thesis.

Publications:

- V. Cardoso, E. Franzin, A. Maselli, P. Pani, G. Raposo - *Testing strong-field gravity with tidal Love numbers*, Phys.Rev. D95 (2017) n°8, 084014, selected as Editors' Suggestion, arXiv:1701.01116 [gr-qc].
- E. Franzin, V. Cardoso, P. Pani, G. Raposo - *Testing Strong Gravity with Gravitational Waves and Love Numbers* - conference proceedings - J.Phys.: Conf. Series 841 (1), 012035.

Technological Skills:	Experience:
LaTeX	Advanced: This software was used to perform several presentations and reports during the Master's Course.
Mathematica/MATLAB	Advanced: Frequent user of both programs. The Master's thesis contributed to enhance the experience in Mathematica.
C,C++	Experienced: Acquired during the course.
Python	Basic: Acquired during the Internship at LIP and from attended classes.
Other	Other types of software and programming languages were studied such as: ROOT (scientific analysis), CUDA (parallel computing), HTML. A brief experience with video editing software was also acquired. Frequent user of both UNIX and Windows based system and software.

Language Skills:	Level:
	According to the European language levels (CEFR)
Portuguese	Native speaker
English	Oral, Reading, Writing: Advanced - C1
French	Oral, Reading, Writing: Basic - B1
Italian	Oral, Reading, Writing: Basic - B1

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