

António Filipe Pires Nunes Martins

Curriculum Vitae

PERSONAL DATA

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1227 Les Acacias
Switzerland

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Phone: +41 767719169

Place and date of birth: Lisbon, January 31, 1988

Nationality: Portuguese

OrcID: 0000-0002-5561-1226

CURRENT POSITION

Scientific collaborator

Since June 2018

Scientific and Parallel Computing Group
Faculty of Science, University of Geneva, Geneva, Switzerland

EDUCATION

- **Interdisciplinary Ph.D. degree (Physics and Biology)**

September 2013 to May 2018

Faculty of Science, University of Geneva, Geneva, Switzerland

Grade: “Très Bien” (“Very Good”, highest grade attainable)

Dissertation topic: “Quantitative and mechanistic characterization of geometric features and patterns in biological systems” ([link](#))

Supervisor: Dr. Michel C. Milinkovitch

- **Master’s degree (M.Sc.) in Physical Engineering**

September 2009 to May 2012

Instituto Superior Técnico, University of Lisbon, Lisbon, Portugal

Final score: 19/20

Dissertation topic: “Dynamics of perfect fluids in nonminimally coupled gravity” ([link](#))

Supervisor: Dr. Orfeu Bertolami

Co-supervisor: Dr. Jorge Páramos

- **Undergraduate diploma (B.Sc.) in Physical Engineering**

September 2006 to August 2009

Instituto Superior Técnico, University of Lisbon, Lisbon, Portugal

Final score: 18/20

In peer-reviewed scientific journals:

1. [António F. Martins](#), Nigel Bennett, Sylvie Clavel, Herman Groenewald, Sean Hensman, Stefan Hoby, Antoine Joris, Paul Manger, and Michel C. Milinkovitch, “Locally-Curved Geometry Generates Bending Cracks in The African Elephant Skin”, *Nature Communications* 9 (3865), 2018. ([DOI](#))
2. [António F. Martins](#), Michel Bessant, Liana Manukyan and Michel C. Milinkovitch, “R²OBBIE-3D, a Fast Robotic High-Resolution System for Quantitative Phenotyping of Surface Geometry and Colour-Texture”, *PLoS ONE* 10 (6), 2015. ([DOI](#))
3. Sophie A. Montandon, Athanasia C. Tzika, [António F. Martins](#), Bastien Chopard and Michel C. Milinkovitch, “Two waves of anisotropic growth generate enlarged follicles in the spiny mouse”, *EvoDevo* 5 (33), 2014. ([DOI](#))
4. Orfeu Bertolami and [António F. Martins](#), “Dynamics of perfect fluids in nonminimally coupled gravity”, *Phys. Rev. D* 85 (024012), 2012. ([DOI](#))
5. J. P. Marques, [António F. Martins](#), P. Indelicato, C. I. Szabo and F. Parente, “Analysis of X-ray spectra emitted from a laser-produced lead plasma”, *Eur. Phys. Journal D* 66:52, 2012. ([DOI](#))

In peer-reviewed conference proceedings:

1. Liana Manukyan, [António F. Martins](#), Sophie A. Montandon, Michel Bessant and Michel C. Milinkovitch, “A versatile high-resolution scanning system and its application to statistical analysis of lizards' skin colour time-evolution”, *Proceedings of SIGGRAPH '14* (78), 2014. ([link](#))

In preparation:

1. [António F. Martins](#), and Jonas Latt, “Quantitative and qualitative analyses of a lattice model for the simulation of physical shells”.

- INNOGAP Proof-Of-Principle grant for the development of “*Nano-R²OBBIE 3D, an image-based 3D reconstruction system with nanometric resolution*”
Awarded by: UNITEC, University of Geneva, Geneva, Switzerland
Spring 2015
- Scientific Investigation grant, *FREEROCK – Fracture evolution and solid-liquid interaction in igneous rocks of Atlantic volcanoes*
Awarded by: University of Évora, Évora, Portugal
March 2013 to July 2013

- Scientific Investigation grant, *Functions defined by infinite series*
Awarded by: University of Lisbon and Santander Totta, Lisbon, Portugal
February 2010 to September 2010
- Integration into Research grant, *Atomic structure, energy levels and transition probabilities*
Awarded by: Portuguese Foundation for Science and Technology, Portugal
January 2009 to December 2009
- “Excellence in Physical Engineering, 2nd year” prize (awarded to the 2nd year student with the highest grades)
Awarded by: Instituto Superior Técnico, University of Lisbon, Lisbon, Portugal
2008

CONFERENCE PRESENTATIONS

Oral presentations

- *Quantifying Nature's appearance: combining high-resolution, coloured 3D reconstruction and mathematical tools to analyse skin patterns in Pantherophis guttatus*
2nd International SystemsX.ch Conference on Systems Biology
Lausanne, Switzerland, October 2014
- *Understanding animal colour patterns: from acquisition to simulation*
CADMOS Day 2013, on Modeling and High-Performance Computing
Geneva, Switzerland, November 2013
- *Dynamics of perfect fluids in nonminimally coupled gravity*
7th Iberian Cosmology Meeting
Lisbon, Portugal, April 2012

Poster presentations

- *Evidence for tensile fracture patterning on the skin of the African elephant (Loxodonta Africana)*
3rd International SystemsX.ch Conference on Systems Biology
Zurich, Switzerland, September 2017
- *Quantifying Nature's appearance: combining coloured 3D reconstruction and mathematical tools to analyse skin patterns in Pantherophis guttatus*
5th Euro Evo Devo Meeting
Vienna, Austria, July 2014
- *X-ray spectra in laser-produced plasmas*
5th Symposium SPARC
Lisbon, Portugal, 2009

TEACHING & MENTORING

- Teaching Assistant, *Understanding biological complexity and diversity*
2015-2016
University of Geneva, Geneva, Switzerland

	<ul style="list-style-type: none"> • Co-supervisor of Magali Salvador, <i>Cellular automata and reaction-diffusion systems: pattern formation in shellfish and zebrafish</i> (bachelor's monograph) University of Geneva, Geneva, Switzerland, 2015
PROFESSIONAL WORKSHOPS	<ul style="list-style-type: none"> • Rigi-Workshop 2015 on “Mathematical and Computational Modeling in Life Sciences” Rigi Kulm, Switzerland, January 2015 • CADMOS Activity Days on “High-Performance Computing” Leysin, Switzerland, October 2013 • CENTRA School of Astrophysics and Gravitation Instituto Superior Técnico, University of Lisbon, Lisbon, Portugal, September 2012
PROFESSIONAL MEMBERSHIPS	<ul style="list-style-type: none"> • SystemsX.ch – The Swiss Initiative in Systems Biology September 2013 to Present • Swiss Institute of Bioinformatics (SIB) September 2014 to Present
OUTREACH ACTIVITIES	<ul style="list-style-type: none"> • TreeTree2 summer academy (link, in Portuguese), a project aimed at fostering the scientific interests of young students. July 2017 and July 2018 • “Das Krokodil im Baum” (link, in German), an exhibition about the evolution and biodiversity of crocodiles. September 2015

Updated on October 4, 2018