

**Personal Data:**

**Full name:** Paulo Jorge Magalhães Martins

**Birth date:** 27/05/1983

**Institutional addresses:**

- DKFZ – German Cancer Research Center  
Im Neuenheimer Feld 280, 69120 Heidelberg, GERMANY
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**Education History:**

- **2010 – 2014:** Doctoral Degree in Physics (Pre-Bologna) – Specialty in Experimental Physics was awarded the final grade of Approved with Distinction and Honors, Faculty of Sciences and Technology, University of Coimbra, Portugal.  
**Thesis advisors:** Prof. Dr. Paulo Alexandre Vieira Crespo and Prof. Dr. Rui Ferreira Marques.
- **2010 – 2011:** Post Graduation in Economical Studies (subjects: Macroeconomics, Microeconomics, Econometrics, Contemporary Economical Problems), Faculty of Economics, University of Coimbra, Portugal.
- **2007 – 2008:** Master's degree in Nuclear and Particle Physics, Faculty of Sciences and Technology, University of Coimbra, Portugal.
- **2004 – 2005:** Erasmus Mundus Program, Humboldt-Universität zu Berlin, Germany.
- **2001 – 2006:** Licenciante's degree in Physics, Faculty of Sciences and Technology, University of Coimbra, Portugal.

**Employment History:**

- **01/09/2017 – present:** Alexander von Humboldt Research Fellow at DKFZ, Heidelberg, Germany.
- **01/12/2016 – present:** Researcher at IBEB (research line of cancer therapy and drug delivery), Lisboa, Portugal.
- **01/07/2017 – 31/08/2017:** Parental leave.
- **26/09/2016 – 30/06/2017:** Postdoctoral Fellowship under Prof. João Seco in the Research Program Imaging and Radiooncology at DKFZ, Heidelberg, Germany.
- **16/01/2017 – 19/05/2017:** Guest Scientist at the Institute for Radiooncology – OncoRay, Dresden, Germany.
- **01/08/2015 – 31-07-2016:** Postdoctoral Fellowship working on the exploration of a small-animal RPC-PET scanner and development of a human RPC-PET prototype, at LIP, Portugal.
- **19/01/2015 – 17/07/2015:** Examiner's Assistant at the European Patent Office – EPO, The Hague, The Netherlands. Directorate of Medical Technology (1.6.51).
- **01/08/2014 – 31/12/2014:** Researcher of the project "RAD4LIFE – Radiation for Life", at LIP, Portugal.

- **01/12/2013 – 31/05/2014:** Researcher of the project “NEULAND – An innovator time-of-flight detector for high energy neutrons in GSI and FAIR”, at LIP, Portugal.
- **01/03/2013 – 30/11/2013:** Researcher of the project “Participation in the RD51 collaboration: detectors and resistive plate chamber physics” (CERN/FP/116392/2010), at LIP, Portugal.
- **01/06/2010 – 28/02/2013:** Doctoral Scholarship working on the demonstration of a Positron Emission Tomography (PET) small-animal scanner based on Resistive Plate Chambers (RPCs), at LIP, Portugal.
- **01/03/2009 – 31/05/2010:** Researcher working on the laser system for the calibration and monitoring of the photomultiplier tubes of the Tile Calorimeter – TileCal, of ATLAS detector, at CERN, Switzerland, and LIP, Portugal.
- **01/01/2009 – 28/02/2009:** Researcher of the project “Collaboration on ATLAS experiment” (CERN/FP/83551/2008), at LIP, Portugal.
- **01/07/2007 – 31/12/2008:** Researcher of the project “GRID for simulation and data analysis in ATLAS/LHC” (GRID/GRI/81727/2006), at LIP, Portugal.
- **01/11/2006 – 30/06/2007:** Researcher of the project “Physics at LHC” (POCI/FP/81950/2007), at LIP, Portugal.
- **16/05/2006 – 15/09/2006:** Researcher of the project “Promoting scientific dissemination in Particle Physics” (POCTI/DIV/2005/00087), at LIP, Portugal.

**Areas of Scientific Activity:** Radiation Physics; Detector Technology; Particle Therapy; Prompt-Gamma Imaging; Prototype Development; Medical Instrumentation; Image Reconstruction; Positron Emission Tomography; Preclinical Imaging; Resistive Plate Chambers; Intellectual Property.

#### **Selected Publications** (out of 78)

- **Martins, P.**, Dal Bello, R., Rinscheid, A., Roemer, K., Werner, T., Enghardt, W., Pausch, G., Seco, J., Prompt gamma spectroscopy for range control with CeBr<sub>3</sub> (accepted).
- **Martins, P.**, Crespo, P., Couceiro, M., Ferreira, N. C., Marques, R. F., Seco, J., Fonte, P. (2017): Fast full-body reconstruction for a functional RPC-PET imaging system using list-mode simulated data and its applicability to radiation oncology and radiology, [arXiv:1706.07075](https://arxiv.org/abs/1706.07075) [physics.med-ph].
- **Martins, P.**, Blanco, A., Crespo, P., Marques, M.F.R., Ferreira Marques, R., Gordo, P.M., Kajetanowicz, M., Korcyl, G., Lopes, L., Michel, J., Palka, M., Traxler, M., Fonte, P. (2014): Towards very high resolution RPC-PET for small animals, *Journal of Instrumentation*, v. 9, n. 10, p. C10012-C10012. DOI: 10.1088/1748-0221/9/10/C10012.
- Crespo, P., Blanco, A., Couceiro, M., Ferreira N.C., Lopes, L., **Martins, P.**, Marques, R., Fonte, P. (2013): Resistive plate chambers in positron emission tomography. *The European Physical Journal Plus*, v. 128, n. 7, p. 1-35. DOI: 10.1140/epjp/i2013-13073-5.
- **ATLAS** Collaboration, (2010): Readiness of the ATLAS Tile Calorimeter for LHC collisions. *The European Physical Journal C*, v. 70, n. 4, p. 1193-1236. DOI: 10.1140/epjc/s10052-010-1508-y.

#### **Selected Communications**

- P. Martins *et al.* 2017 Fast full-body reconstruction for a functional RPC-PET imaging system using list-mode simulated data and its applicability to radiation oncology and radiology. BiGART2017 - 15<sup>th</sup> Acta Oncologica Conference, Aarhus, Denmark. (Poster).
- P. Martins *et al.* 2015 An ultra-high resolution preclinical positron emission tomography scanner. IEEE 4<sup>th</sup> Portuguese Meeting on Bioengineering (ENBENG), Porto, Portugal. (Oral).
- P. Martins *et al.* 2014 A High Resolution RPC-PET Prototype for Small Animals. Física 2014 – 19<sup>th</sup> Physics National Conference, Lisboa, Portugal. (Oral).
- P. Martins *et al.* 2013 Achieving 0.4-mm FWHM Spatial Resolution with an RPC-Based Small-Animal PET Prototype. IEEE Nucl. Sci. Symp. & Med. Imag. Conf., Seoul, South Korea. (Poster).
- P. Martins *et al.* 2012. Experimental Sub-Millimeter Resolution with a Small-Animal RPC-PET Prototype. IEEE Nucl. Sci. Symp. & Med. Imag. Conf., Anaheim, USA. (Poster).
- P. Martins *et al.* 2012. On Lesion Detectability by Means of 300 ps-FWHM TOF Whole-Body RPC-PET: an Experiment-Based Simulation Study. IEEE Nucl. Sci. Symp. & Med. Imag. Conf., Anaheim, USA. (Poster).

- P. Martins *et al.* 2011. A direct time-of-flight reconstruction for whole-body single-bed RPC-PET: Results from lesion and anthropomorphic simulated data. IEEE Nucl. Sci. Symp. & Med. Imag. Conf., Valencia, Spain. (Poster).
- P. Martins *et al.* 2008. Study of the anomalous couplings in the  $Wtb$  vertex with muons. Física 2008 – 16<sup>th</sup> Physics National Conference, Lisboa, Portugal. (Poster).
- P. Martins *et al.* 2006 Construction and operation of a spark chamber for the detection of cosmic rays. 20<sup>th</sup> European Cosmic Ray Symposium – ECRS, Lisboa, Portugal. (Poster).

### **Awards**

- Humboldt Research Fellowship for Postdoctoral Researchers from the Alexander von Humboldt Foundation.
- Postdoctoral Fellowship from the German Cancer Research Center – DKFZ.
- Postdoctoral Fellowship from the Portuguese Foundation for Science and Technology.
- IEEE NSS/MIC/RTSD 2012 Trainee Award from the IEEE Nuclear & Plasma Sciences Society.
- PhD Scholarship from the Portuguese Foundation for Science and Technology (2009-2013).