

# Gonçalo M. Marques

## CONTACT INFORMATION

Gonçalo José Monteiro Marques

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## RESEARCH EXPERIENCE

2010 - ... Invited assistant researcher at IN+/IST

2006 – 2009 Pos-doc researcher at IN+/IST

## EDUCATION

2001 – 2006 PhD in Physics, under the supervision of Prof. Pedro Bicudo, with the title: “Chiral symmetry breaking and hadron interactions in quark models” at Instituto Superior Técnico

1995 – 2000 MsC in Technological Physics Engineering (Engenharia Física Tecnológica) at Instituto Superior Técnico

## ADVANCED COURSES

2011 Botanical course “Curso de Botânica - Morfologia e Identificação”, 1 week, Portuguese Botanical Society, Parque de Noudar, Barrancos.

2007 Preferences Methods – State of the Art Modelling, Department of Forest Economics, SLU-Umeå, Sweden.

2007 Fourth international tele-course on Dynamic Energy Budget Theory, 10 weeks, IST, Lisboa.

2002 School in Applications of Effective Field Theories, February 3rd-8th 2003, Milan, Italy

2001 ICTP Summer School on Particle Physics, 3 weeks, Trieste, Italy.

## PUBLICATIONS

A. Lorena, G. M. Marques, T. Sousa, S. A. L. M. Kooijman, (2010). Stylized facts in microalgal growth - interpretation in a DEB context. Phil. Trans. R. Soc. B, 363(1502): 522 2453–2464, 2010.

G. M. Marques, A. Lorena, J. Magalhães, T. Sousa, S.A.L.M. Kooijman and T. Domingos, (2010). Life Engine - creating artificial life for scientific and entertainment purposes. Proceedings of the 10th European Conference of Artificial Life (ECAL 2009), Vol. LNCS/LNAI 5777, 5778, Springer Verlag, 2010.

T. Sousa, G. M. Marques, T. Domingos, (2009). Comment on «Energy Uptake and Allocation During Ontogeny». Science, 325, 1206-b.

R. Gonzalez Felipe, G. M. Marques and J. E. Ribeiro (2006). Vacuum structure and fermion condensation in a magnetic field. Nucl. Phys. A 778 (2006) 30 [arXiv:hep-th/0307290].

P. Bicudo and G. M. Marques, (2004) The  $\Theta^+(1540)$  as a heptaquark with the overlap of a pion, a kaon and a nucleon. Phys. Rev. D 69 (2004) 011503 [arXiv:hep-ph/0308073].

P. Bicudo and G. Marques, (2004). Chiral symmetry breaking with scalar confinement. Phys. Rev. D 70 (2004) 094047 [arXiv:hep-ph/0305198].

P. Bicudo, M. Faria, G. M. Marques and J. E. Ribeiro, (2004). Microscopic derivation of N ( $\Delta$ ) pi scattering lengths. Nucl. Phys. A 735 (2004) 138 [arXiv:nucl-th/0106071].

## **PROJECTS**

*MEDIADEB "Modeling the ecophysiology of planktonic and benthic diatoms with DEB theory"*, funded by Pessoa program (FCT)

*Life Engine – Development of Biological Realism in Computer Games*, funded by the Portuguese Agency for Innovation (2008-12).

## **CONFERENCES (SELECTED)**

Was part of the Organizing Committee on the DEB2011 Symposium - 2nd International Symposium on Dynamic Energy Budget Theory. April 13 - 15 2011, Lisbon, Portugal.

2nd International Symposium on Dynamic Energy Budget Theory. April 13 - 15 2011, Lisbon, Portugal.  
Presentation: Life Engine and DEBlib – Assembling a Generalized DEB Model for the organism and freeing it into an ecosystem

ECAL09 – European Conference on Artificial Life 09, September 13 - 16 2009, Budapest, Hungary  
Presentation: Life Engine - creating artificial life for scientific and entertainment purposes

1st International Symposium on Dynamic Energy Budget Theory: 30 years of research for metabolic organization. April 19 - 22 2009, Brest, France.

Presentation: Life Engine - Construction of a DEB module for videogames

First Lisbon Colloquium for the Philosophy of Science, “Unity of Science. Non-Traditional Approaches”, 25-28 de Outubro de 2006, Lisboa, Portugal.

Quark confinement and the hadron spectrum V, September 21-25, 2004, Villasimius, Italy.

Poster: The  $\Theta^+$  (1540) as a Heptaquark

3º Encontro Nacional de Física Hadrónica, April 2, 2004, LIP, Lisbon, Portugal

Oral presentation: The  $\Theta^+$  (1540) as a Heptaquark

Quark confinement and the hadron spectrum IV, September 10-14, 2002, Gargnano, Italy.

XIVth Summer School, "Understanding the structure of Hadrons", July 9-13, 2001, Prague, Czech Republic.

XVIII CFIF Autumn School on Topology of Strongly Correlated Systems, October 8-13, 2000, Lisbon, Portugal.

Oral presentation: ( $\Delta$ ) N- $\pi$  scattering in a quark model

### **TEACHING AND SUPERVISION**

2009 – 2011 Course of Applied Ecology in Environmental Engineering at IST (2009/10 and 2010/11)

2011 Sixth DEB telecourse. Responsible for the Lisbon group and assistant in the practical component that took place in Lisbon.

2010 – ... Currently is supervising Sara Cruz, MSc student of Informatics Engineering at IST.

2009 Fifth DEB telecourse. Responsible for the Lisbon group

2007 – 2008 Supervised the MSc of António Lorena in Environmental Engineering at IST.

### **PRIZES AND SCHOLARSHIPS**

UTL/Deloitte 2009 Young Researcher Award

Post-doc grant

from the Fundação para a Ciência e a Tecnologia with reference SRFH/BPD/27174/2006 (3 years – 2006/09)

PhD grant

from the Fundação para a Ciência e a Tecnologia with reference SRFH/BD/984/2000 (4 years – 2000/04)

Scientific Research Initiation Grant

from the Fundação para a Ciência e a Tecnologia; Project J559 (9 months – 1999/2000)