

CURRICULUM VITAE

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Personal Data

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Education:

- PhD at the University of Sussex (Astronomy Centre), England, February 3, 1994 (equivalence to the Doctorate in Astronomy and Astrophysics of the University of Lisbon October 1994).
- Scientific and Pedagogical Expertise Habilitation, in accordance to the ECDU, 12 July 1988, the Department of Physics, Faculty of Science (approved with the grade of very good).
- Degree in Physics (Microphysics branch) of the Faculty of Sciences of Lisbon, in 1982, with the marking of 16 (out of 20).

Professional position:

- Professor Associado, Department of Physics, Faculty of Sciences of Lisbon.

Publications

- 1) Paulo Crawford & J. P. Mimoso, "On the Concept of Gravitational Energy in General Relativity", Proceedings of the 4th National Conference of Physics, SPF, Lisbon, pp. 702-703, (1984).
- 2) Paulo Crawford & J. P. Mimoso, "Cosmological solutions of Einstein equations with scalar fields", Proceedings of the XII Conference Luso-Spanish Mathematics, ed. E. Vaz, vol. III, p. 537-543, University of Minho (1987).
- 3) Mark S. Madsen, José P. Mimoso, Jackie Butcher & George F. R. Ellis, "*The evolution of the density parameter in Inflationary Cosmology Reexamined*", Phys. Rev. D 46, 1399-1415 (1992) [DOI: 10.1103/PhysRevD.46.1399].
- 4) José P. Mimoso & Paulo Crawford, "*Shear-free Anisotropic Cosmological Models*," Class. Quantum Grav. 10, 315-326 (1993) [DOI: 10.1088/0264-9381/10/2/013].
- 5) John D. Barrow, José P. Mimoso, Márcio & R. Garcia Maia, "*Amplification of gravitational waves in scalar-tensor theories of gravity*", Phys. Rev. D 48, 3630-3640 (1993) [DOI: 10.1103/PhysRevD.51.5967, 10.1103/PhysRevD.48.3630]; Erratum-ibid. D51 (1995) 5967 [<http://link.aps.org/doi/10.1103/PhysRevD.51.5967>]
- 6) José P. Mimoso, "Primordial cosmology in Jordan-Brans-Dicke theory: nucleosynthesis", in Classical and Quantum Gravity, Proceeds. of the 1st Iberian Meeting on Gravity, eds. M. C. Bento et al. Pp. 243-246, World Scientific: Singapore (1993).
- 7) João P. Abreu, Paulo Crawford & José P. Mimoso, "*Exact conformal scalar field cosmologies*," Class. Quantum Grav. 11, 1919-1939 (1994) [DOI: 10.1088/0264-9381/11/8/002].
- 8) John D. Barrow & José P. Mimoso, "*Perfect fluid scalar-tensor cosmologies*", Phys. Rev. D 50, 3746-3754 (1994) [DOI: 10.1103/PhysRevD.50.3746].
- 9) José P. Mimoso & David Wands, "*Massless scalar-tensor fields in cosmologies*", Phys. Rev. D 51, 477-489 (1995) [DOI:<http://dx.doi.org/10.1103/PhysRevD.51.477>].
- 10) José P. Mimoso & David Wands, "*Anisotropic scalar-tensor cosmologies*", Phys. Rev. D 52, 5612-5627 (1995) [DOI: <http://dx.doi.org/10.1103/PhysRevD.52.5612>].
- 11) João P. Abreu, Paulo Crawford & José P. Mimoso, "Stiff conformal radiation fluid and scalar field cosmologies," inhomogeneous Cosmological Models, proceeds. of "Encuentros Relativisticos Españoles --- ERE 94", eds. A. Molina & J. M. M. Senovilla, pp. 134-137, World Scientific, Singapore (1995).
- 12) José P. Mimoso & Ana Nunes, "*General relativity as a cosmological attractor of scalar-tensor gravity theories*," Phys. Lett. A 248, 325-331 (1998) [DOI: 10.1016/S0375-9601(98)00724-5].

- 13) José P. Mimoso & Ana Nunes, "*General relativity as a cosmological attractor of scalar-tensor gravity theories*," *Astrophys. and Space Sci* 261, 327-330 (1999) [DOI: 10.1023 / A: 100 202 550 568].
- 14) José P. Mimoso & Ana Nunes, "General Relativity an attractor to the Scalar-Tensor Gravity Theories," in *The Non-Sleeping Universe*, eds. M. T. V. T. Lago and A. Blanchard, pp. 327-330, Kluwer (1999).
- 15) José P. Mimoso & Ana Nunes, "The relaxation of generalized gravity theories," in *New Worlds in Astro-particle physics, Proceeds. of the Second International Workshop*, eds. A. M. Mourão et al. Pp. 337-341, World Scientific, Singapore (1999).
- 12) Tiago C. Charters, José P. Mimoso & Ana Nunes, "*Slow-roll inflation without fine-tuning*," *Phys. Lett. B* 427, 21-26 (2000) [DOI: 10.1016/S0370-2693 (99) 01362-3].
- 13) Ana Nunes & José P. Mimoso, "*On the scaling solutions yielding potentials*," *Phys. Lett. B* 488, 423-427 (2000) [DOI: 10.1016/S0370-2693 (00) 00919-9].
- 14) Ana Nunes, José P. Mimoso & Tiago C. Charters, "*Scaling solutions from interacting fluids*," *Phys. Rev. D.* 63: 083506 (2001) [DOI: 10.1103/PhysRevD.63.083506].
- 15) Tiago C. Charters, Ana Nunes & José Mimoso, "*Stability analysis of cosmological models through Liapunov's mehod*," *Class. Quantum Grav.* 18, 1-11 (2001) [DOI: 10.1088/0264-9381/18/9/307].
- 16) José P. Mimoso & Ana Nunes, "The density parameter in scalar field cosmologies", in *Astronomy and Astrophysics: Recent Developments. Proceedings of the 10th Meeting English*, eds. J. P. S. Lemos et al. Pp. 51-56, World Scientific, Singapore (2001).
- 17) José P. Mimoso, Ana Nunes & C. Tiago Charters, "The density parameter in cosmologies with interacting fluids," *New Worlds in Astro-particle physics, Proceeds. of the Third International Workshop*, eds. A. M. Mourão et al. Pp. 208-212, World Scientific, Singapore, (2001).
- 18) José P. Mimoso, Ana Nunes & C. Tiago Charters, "Attractor solutions in cosmologies with interacting fluids," in *Cosmology 2000*, eds. M. C. Bento, O. Bertolami and L. Teodoro, p. 14-20, <http://alfa.ist.utl.pt/~bento/cosmo2000/proc/proceedings.html>, Lisbon (2001).
- 19) José P. Mimoso & Ana Nunes, "*A Qualitative Analysis of the Attractor Mechanism of General Relativity*", *Astrophysics and Space Science* 283, 661-666 (2003) [DOI: <http://dx.doi.org/10.1023/A:1022524111413>].
- 20) José P. Mimoso, Ana Nunes and Diego Pavón, "*Scaling behavior in warm inflation*", *AIP Conference Proceedings Phi in the Sky*, p. 176-181, (2004) [DOI: 10.1063/1.1835189].
- 21) T.C. Charters, A. Nunes and J.P. Mimoso, "*Phase dynamics and particle production in reheating*", *Physical Review D* 71, 083515 (2005) [DOI: 10.1103/PhysRevD.71.083515]

- 22) José P. Mimoso, Ana Nunes & Diego Pavón, *Asymptotic behavior of the warm inflation scenario with viscous pressure*, Phys. Rev. D. 73:023502 (2006) [DOI: 10.1103/PhysRevD.73.023502].
- 23) P. Jorge, J. P. Mimoso and D. Wands, `` *On the dynamics of k-essence models*, " J.Phys.Conf. Ser. 66, 012031 (2007) [DOI: 10.1088/1742-6596/66/1/012031].
- 24) Tiago C. Charters, Ana Nunes & José P. Mimoso, *"Reheating Induced by Competing decay modes"*, Phys. Rev. D 78:083539 (2008) [DOI: 10.1103/PhysRevD.78.083539].
- 25) José P. Mimoso, Tiago C. Charters & Ana Nunes, *"Parametric resonance with multi-frequencies in preheating"*, AIP Conference Proceedings, Volume 1122, pp. 348-351 (2009), PHYSICS AND MATHEMATICS OF Gravitation: Proceedings of the Spanish Relativity Meeting 2008 [DOI: 10.1063/1.3141323].
- 26) Morgan Le Delliou & José P. Mimoso, *"Separating expansion from contraction and generalizing TOV condition in spherically symmetric models with pressure"*, AIP Conference Proceedings, Volume 1122, pp. 316-319 (2009), PHYSICS AND MATHEMATICS OF Gravitation: Proceedings of the Spanish Relativity Meeting 2008 [DOI: 10.1063/1.3141309].
- 27) José P. Mimoso, Morgan Le Delliou, Filipe C. Mena, *"Separating expansion from contraction in spherically symmetric models with a perfect-fluid: Generalization of the Tolman-Oppenheimer-Volkoff condition and application to models with a cosmological constant"*, Phys.Rev.D81: 123,514 (2010) [DOI: 10.1103 / PhysRevD.81.123514].
- 28) Tiago C. Charters, José P. Mimoso, *"Self-interacting scalar field cosmologies: unified exact solutions and Symmetries"*, JCAP 1008:022 (2010) [DOI: 10.1088/1475-7516/2010/08/022].
- 29) Morgan Le Delliou, José P. Mimoso, Filipe C. Mena, *"Separating expansion from contraction: Generalized TOV condition, LTB models with pressure and Lambda CDM"*, AIP Conf.Proc.1241 :1011-1015, (2010) [DOI: 10.1063/1.3462594].
- 20) José P. Mimoso, Francisco S. N. Lobo, *"An anti-Schwarzschild solution: wormholes and scalar-tensor solutions."* J.Phys.Conf.Ser.229: 012078 (2010) [DOI: 10.1088/1742-6596/229/1/012078].
- 31) José P. Mimoso, Tiago C. Charters, *"Unifying exact scalar field cosmologies,"* J.Phys.Conf.Ser.229: 012051 (2010) [DOI: 10.1088/1742-6596/229/1/012051].
- 32) Francisco. S. N. Lobo, José P. Mimoso, *"Possibility of hyperbolic tunneling"*, Phys.Rev.D82: 044034 (2010) [DOI: 10.1103/PhysRevD.82.044034].
- 33) N. M. Garcia, T. Harko, F. S. N. Lobo, J. P. Mimoso, *"Energy conditions in modified Gauss-Bonnet gravity"*, Phys. Rev. D83, 104032 (2011) [DOI: 10.1103/PhysRevD.83.104032].

- 34) M. L. Delliou, F. C. Mena, J. P. Mimoso, "The role of shell crossing on the Existence and stability of trapped matter shells in spherical inhomogeneous Lambda-CDM models", *Phys. Rev. D* 83, 103528 (2011) [DOI: 10.1103/PhysRevD.83.103528].
- 35) N. M. Garcia, T. Harko, F. S. N. Lobo, and J. P. Mimoso, "*f(G) modified gravity and the energy conditions*", *Journal of Physics: Conference Series*, Volume 314, p. 012 056 (2011) [DOI: 10.1088/1742-6596/314/1/012056].
- 36) José P. Mimoso,, Francisco S. N. Lobo, "The Variation of G in a negatively curved space-time", *FROM VARYING COUPLINGS TO FUNDAMENTAL PHYSICS Astrophysics and Space Science Proceedings*, 2011, 25-34, DOI: 10.1007/978-3-642-19397-2_4
- 37) Philippe Brax, José P. Mimoso & J. Nelson Nunes, "*Brane isotropization in an extra-dimensional Tolman-Bondi universe*", *Phys. Rev. D* 85, 123516 (2012) [DOI: 10.1103/PhysRevD.85.123516].
- 38) José P. Mimoso, Morgan Le Delliou, Filipe C. Mena, "Spherically symmetric models: separating expansion from contraction in models with Anisotropic Pressures", *AIP Conf.Proc.*1458 :487-490, (2012) [DOI: <http://dx.doi.org/10.1063/1.4734466>].
- 39) José P. Mimoso, Diego Pavón, " Entropy evolution of universes with initial and final de Sitter eras", *Phys. Rev. D* 87, 047302 (2013) 047302, DOI: 10.1103/PhysRevD.87.047302 .
- 40) José P. Mimoso, Morgan Le Delliou, Filipe C. Mena, "Local conditions separating expansion from collapse in spherically symmetric models with anisotropic pressures", *Phys. Rev. D* 88: 043501 (2013), arXiv:1302.6186 [gr-qc], URL: <http://link.aps.org/doi/10.1103/PhysRevD.88.043501>
- 41) Morgan Le Delliou, José P. Mimoso, Filipe C. Mena, Michele Fontanini, Daniel C. Guariento, Elcio Abdalla, "Separating expansion and collapse in general fluid models with heat flux", *Phys. Rev. D* 88, 027301, (2013), arXiv:1305.3475, DOI:10.1103/PhysRevD.88.027301.
- 42) P. Brax, J. P. Mimoso, N. J. Nunes, "On the isotropization of a 3-brane in an Extra-Dimensional Tolman-Bondi universe", in *Progress in Mathematical Relativity, Gravitation and Cosmology*, Springer Proceedings in Mathematics and Statistics, vol. 60, pp. 161, 2013, ISBN 978-3-642-40157-2,
- 43) Salvatore Capozziello, Francisco S. N. Lobo, José P. Mimoso, "Energy conditions in modified gravity", arXiv:1312.0784 [gr-qc], *Phys. Lett. B* 730 (2014) 280.
- 44) Salvatore Capozziello, Francisco S. N. Lobo, José P. Mimoso, "Generalized energy conditions in Extended Theories of Gravity", *Phys. Rev. D* 91 (2015) 124019.
- 45) J P Mimoso, F S N Lobo, and S Capozziello, "Extended Theories of Gravity with Generalized Energy Conditions", *J.Phys.Conf.Ser.* 600 (2015) 1, 012047.
- 46) T. Harko, F. S. N. Lobo, J. P. Mimoso and D. Pavón, "Gravitational induced particle production through a nonminimal curvature–matter coupling", *Eur. Phys. J. C* 75, 386 (2015).

47) Alan Maciel, Morgan Le Delliou, José P. Mimoso, “Dual null formalism for the collapse of fluids in a cosmological background”, *Phys. Rev. D* 92, 083525 (2015)

Books and Book Chapters:

- 1) Chapter 3: *From the Big Bang to Galaxies*, p. 81-108, the book *The Secret Code: Discovering the patterns of nature*, coord. Margarida Telo da Gama, Gradiva, Lisbon, (2004).
- 2) José P. Mimoso & Ana Nunes, "*A Qualitative Analysis of The Attractor Mechanism of General Relativity*", in *The Cosmology of Extra Dimensions and Varying Fundamental Constants*, ed. C. J. A. P. Martins, p. 661-666, Kluwer (2003).
- 3) J. P. Mimoso, A. Nunes and Diego Pavón, "*Bulk Viscosity on the Impact of Warm Inflation Scenario*," in *Proceedings of MG11-The Marcel Grossmann ElenvenMeeting: On Recent Developments in Theoretical and Experimental General Relativity, Gravitation and Relativistic Field Theories*, edited by Robert Hagen Kleinert & R. Jantzen, p. 1876, (World Scientific, Singapore, 2008) [astro-ph/0612581] [DOI: 10.1142/9789812834300_0275]
- 4) T. Charters, A. Nunes, J. P. Mimoso, "*Scalar Field Dynamics in Phase Preheating*" in *Proceedings of MG11-The Marcel Grossmann Elenventh Meeting: On Recent Developments in Theoretical and Experimental General Relativity, Gravitation and Relativistic Field Theories*, edited by Robert Hagen Kleinert & R. Jantzen, pp. 1881, (World Scientific, Singapore, 2008) [hep-ph/0701095] [DOI: 10.1142/9789812834300_0276].
- 5) Tiago C. Charters, Ana Nunes & P. Joseph Mimoso, "*Post-inflationary scalar field phase dynamics*", *DYNAMICS, AND GAMES Sience II*, Springer Proceedings in Mathematics, Volume 2, 243-246, (2011) [DOI: 10.1007/978-3-642-14788-3_18, 2011].
- 6) José P. Mimoso, "*The Dynamics of Scalar Fields in Cosmology*", *DYNAMICS, AND GAMES Sience II*, Springer Proceedings in Mathematics, Volume 2, 543-547, (2011) [DOI: 10.1007/978-3-642-14788-3_38, 2011].
- 7) José P. Mimoso & S. Francisco N. Lobo, "*The Variation of G in a Negatively Curved Space-Time*", *Astrophysics and Space Science Proceedings*, 25-34 (2011) [DOI: 10.1007/978-3-642-19397-2_4]
- 8) José P. Mimoso & Diego Pavón, "Entropy in universes evolving from initial to final de Sitter eras", *IAU Symposium 306*, 388, Cambridge University Press, Cambridge (2015)

Monographs:

- 1) José P. Mimoso, 1982. *"Bifurcation in perturbed Hamiltonian systems and quantification,"* Licenciatura Thesis, Faculty of Sciences of Lisbon, 1982.
- 2) José P. Mimoso, 1988. *"Applications of qualitative methods in homogeneous cosmological models,"* Thesis presented at the Scientific and Pedagogical Expertise habilitation, Faculty of Sciences of Lisbon, 1988
- 3) José P. Mimoso, 1993. *"Cosmological models of the early universe",* PhD thesis, University of Sussex, 1993.

Organization of congresses, conferences and seminars-

- 1) Einstein @ pt: Meeting on Gravitation and Cosmology, 27 and 28 June 2005 (URL: <http://cosmo.fis.fc.ul.pt/~einstein>)
- 2) IBERICOS - III Iberian Cosmology Meeting, Lisbon, 6 -7 March 2008 (URL: <http://ibericos.cii.fc.ul.pt/>)
- 3) AUGUSTOFEST - October 24, Interdisciplinary Complex, Lisbon, 2009 (URL: <http://www.ciul.ul.pt/augustofest/>)
- 4) Cosmo 11: International Conference on Particle Physics and Cosmology, (URL: <http://www.astro.up.pt/investigacao/conferencias/cosmo11/>)
- 5) IBERICOS VII - 7th Iberian Cosmology Meeting, 2-4 April 2012, University of Lisbon (URL: <http://ibericos2012.oal.ul.pt/>)
- 6) Modified Gravity Theories: Beyond Einstein's, WorSeptember 2013.
- 7) Organizer of the seminar at the Center for Theoretical and Computational Physics, University of Lisbon (CFTC) from 2005 to 2008.

Member of the Scientific Committee of the following conferences:

- 1) IVth Iberian Cosmology Meeting - IBERICOS 2009, Madrid, March 2010
- 2) Vth Iberian Cosmology Meeting - IBERICOS 2010, Porto, March 2010,
- 3) VIth Iberian Cosmology Meeting - IBERICOS 2011, Salamanca, April 18th-20th, 2011
- 4) IX Iberian Cosmology Meeting – IBERICOS 2014, Aveiro, April 2014

Session Convenor at the Spanish Relativity Meeting in Portugal, Guimarães, September 2012.

Participation as a guest speaker at meetings, conferences and seminars:

Oral Presentations by Invitation:

- 1) J. P. Mimoso, *"The dynamics of scalar fields in cosmology,"* Invited Lecture at the conference "Dynamics and Applications: in honor of Mauricio Peixoto and David Rand," Braga, 8-12 September 2008.

- 2) J. P. Mimoso, "*Cosmology and Extensions of General Relativity*", XI National Meeting of Astronomy and Astrophysics, Funchal, July 2001.

Oral communications and posters:

- 1) Paulo Crawford & José P. Mimoso, "On the concept of gravitational energy in general relativity", 4th National Conference on Physics, 1984 (Oral communication: PC).
- 2) Paulo Crawford & J. P. Mimoso, 1984. Gravitational energy and Bel-Robinson tensor in gravity and supergravity, IV Meeting In Mathematical Physics, Coimbra (Oral communication: PC).
- 3) José P. Mimoso, Paulo Crawford & José Sousa Ramos, 1986. Cosmological solutions with scalar field, 5th National Conference on Physics (poster).
- 4) Paulo Crawford & José P. Mimoso, 1987. Cosmological solutions of Einstein's equations with scalar fields, XII Luso-Spanish Mathematical Days (Oral communication: PC).
- 5) Paulo Crawford, José P. Mimoso, Reuben Mondaini & Alexandre Oliveira, 1987. *SO (n) scalar fields driving anisotropic stages of the Early Universe*, VI Latin American Symposium on Relativity and Gravitation (Oral communication: PC).
- 6) Paulo Crawford & José P. Mimoso, 1989. *SO (n) scalar fields and anisotropic fluids in cosmology*, GR 12 - 12th International Conference on General Relativity and Gravitation, Boulder, Colorado, USA, 1989 (poster).
- 7) José P. Mimoso & Paulo Crawford, 1989. *Cosmology and the new equation of state for the anisotropic stresses*, GR 12 - 12th International Conference on General Relativity and Gravitation, Boulder, Colorado, USA, 1989 (poster).
- 8) José P. Mimoso, 1991. *The Evolution of the density parameter in Inflationary Universes*, oral communication to the 1st National Astronomy Meeting, Porto, 1991.
- 9) José P. Mimoso, 1992. *The early universe in Jordan-Brans-Dicke cosmology: nucleosynthesis*, oral communication to the 2nd National Meeting of Astronomy, Lisbon, 1992.
- 10) José P. Mimoso, 1992. *Primordial cosmology in Jordan-Brans-Dicke theory: nucleosynthesis*, oral communication to the 1st Iberian Meeting on Gravity, 1992.
- 11) João P. Abreu, Paulo Crawford & José P. Mimoso, 1993. *Exact conformal scalar field cosmologies*, 3rd National Astronomy Meeting, Lisbon, 1993 (Oral communication: JPA).
- 12) José P. Mimoso, 1994. *Scalar-tensor cosmologies*, oral communication at the Workshop `` Theoretical and Particle Physics'', Madrid, Spain, 1994.

- 13) José P. Mimoso, *Homogeneous scalar-tensor cosmologies*, GR14, Florence, 1995 (poster).
- 14) José P. Mimoso & Ana Nunes, *General relativity as a cosmological attractor of scalar-tensor gravity theories*, oral communication in The non-sleeping universe, Porto, 1997.
- 15) José P. Mimoso & Ana Nunes, *The relaxation of scalar-tensor gravity theories*, oral communication at the conference New Worlds in Astroparticle physics, Faro, 1998.
- 16) José P. Mimoso, Multi-scalar fields cosmologies, Modern theories of structure formation, Porto, 1999 (poster).
- 17) José P. Mimoso, Ana Nunes & Tiago C. Charters, *Attractor solutions in cosmologies with interacting fluids*, oral communication at the conference Cosmology 2000, Lisbon, 2000.
- 18) José P. Mimoso & Ana Nunes, *The density parameter in scalar field cosmologies*, oral communication to the X-Conference National Meeting of Astronomy and Astrophysics, Lisbon, 2000.
- 19) José P. Mimoso, Ana Nunes & C. Tiago Charters, *The density parameter in cosmologies with interacting fluids*, oral communication conference to the New Worlds in Astroparticle Physics, Faro, 2000.
- 20) José P. Mimoso & Ana Nunes, *"A Qualitative Analysis of The Attractor Mechanism of General Relativity"*, Oral communication in The Cosmology of Extra Dimensions and Varying Fundamental Constants session of JENAAM - Joint European National Astronomy Meeting, Porto, 2002.
- 21) Tiago Charters, José P. Mimoso & Ana Nunes, *"Preheating for field interactions of the general form"*, GR17, 17th International Conference on General Relativity and Gravitation, Dublin 19th-23rd July 2004 (Poster).
- 22) José P. Mimoso, Ana Nunes and Diego Pavón, *"Scaling behavior in warm inflation"*, oral communication at the conference Phi in the Sky: The Quest for Cosmological Scalar Fields, Porto 2004.
- 23) José P. Mimoso, Pedro M Jorge. & David Wands, *"Dynamics of k-essence models"*, oral communication at the conference XXIX Spanish Relativity Meeting ERE- 2006 - Einstein's legacy: from the theoretical paradise to astrophysical observation ", Mallorca, 2006.
- 24) Tiago Charters, Ana Nunes & P. José Mimoso, *"Scalar field dynamics in preheating phase."* Presented at the 11th Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theories, Berlin, Germany, 23-29 Jul 2006 (oral communication made by TC)
- 25) José P. Mimoso, Ana Nunes & Diego Pavón, *"Bulk viscosity impact on the scenario of warm inflation"*. Presented at the 11th Marcel Grossmann Meeting on Recent

Developments in Theoretical and Experimental General Relativity, Gravitation, and Relativistic Field Theories, Berlin, Germany, 23-29 Jul 2006 (oral communication made by DP).

- 26) José P. Mimoso, Tiago Charters and Ana Nunes, "*Parametric resonance with multi-frequencies in preheating*," Oral Communication Conference ERE 2008 - Spanish Relativity Meeting: Physics and Mathematics of Gravitation, Salamanca, 15-19 September, 2008.
- 27) Morgan Le Delliou and J. P. Mimoso, "*Separating expansion from contraction and generalizing TOV condition in spherically symmetric models with pressure*," Oral Communication Conference ERE 2008 - Spanish Relativity Meeting: Physics and Mathematics of Gravitation, Salamanca, 15-19 September, 2008 (oral communication made by MLD).
- 28) Tiago Charters, Ana Nunes and JPMimoso, "*Post-Inflationary scalar field phase dynamics*", Invited Lecture at the conference "Dynamics and Applications: in honor of Mauricio Peixoto and David Rand," Braga, 8-12 September 2008 (oral communication made by TC).
- 29) José P. Mimoso, "*Black Regions in an Anti-Schwarzschild Solution*," Black Holes Workshop, Porto, Dec. 2008.
- 30) José P. Mimoso, "*Scalar Field Cosmologies: A unified qualitative analysis*", the Oral Communication "ENAA 2008 - National Meeting of Astronomy and Astrophysics", Évora, 18-19 September 2008.
- 31) José P. Mimoso, "*Exact scalar field cosmologies: a unified approach*," Oral Communication in Iberians 2009 - 4th Iberian Cosmology Meeting, Madrid, April 2009.
- 32) José P. Mimoso and Tiago Charters, "*The Classification of Exact Scalar field cosmologies and Their dualities*", poster, The Unity of the Universe, U. Portsmouth, June-July 2009.
- 33) José P. Mimoso and Tiago Charters, "*Unifying exact scalar field cosmologies*", oral communication, Spanish Relativity Meeting - ERE 2009: Gravitation in the Large, Bilbao, September 2009.
- 34) José P. Mimoso and Francisco Lobo, "*An Anti-Schwarzschild solution: wormholes and scalar-tensor solutions*," poster, Spanish Relativity Meeting - ERE 2009: Gravitation in the Large, Bilbao, September 2009.
- 35) José P. Mimoso and T. Charters, "*Exact Scalar-Tensor Cosmologies: Solutions, Asymptotic Behaviour and dualities*," oral communication, IBERICOS 2010 - 5th Iberian Cosmology Meeting, Porto, 2010.
- 36) José P. Mimoso and Francisco Lobo, "*The Variation of G in a Negatively Curved Space-Time*" Oral communication in the session The Cosmology of Extra

- Dimensions and Varying Fundamental Constants of JENAM - Joint European National Astronomy Meeting, Lisbon, September 2010.
- 37) José P. Mimoso and Francisco Lobo, "*f (G) modified gravity and the energy conditions*", oral communication, Spanish Relativity Meeting - ERE 2010: Gravity as a Crossroad in Physics, Granada, September 2010.
 - 38) José P. Mimoso and Tiago Charters, "*Scalar-tensor cosmologies: attractor mechanisms and dualities*," poster, COSMO / COSPA 2010 Tokyo, 2010.
 - 39) José P. Mimoso, "*Separating Expansion and Collapse in spherically symmetric Models*", oral communication, IBERICOS 2011 - 6th Iberian Cosmology Meeting, Salamanca, 2011.
 - 40) José P. Mimoso, M. le Delliou and F. C. Mena, "*Spherically Symmetric Models: Separating Expansion from Contraction in Models with Anisotropic Pressures*," Oral Communication in the Spanish Relativity Meeting - ERE 2011: Towards New Paradigms, Madrid, 2011.
 - 41) José P. Mimoso, "*Gravitation and Cosmology in Space-Times with Negative Curvature*", oral communication, ENAA XXI - National Meeting of Astrophysics astronomer and Coimbra 2011.
 - 42) José P. Mimoso, "*The classification of scalar tensor cosmologies and Their dualities*", oral communication, ENAA XXII - National Meeting and Astrophysics astronomer, Porto, 2012
 - 43) José P. Mimoso, Philippe Brax and Nelson Nunes, "*On the Isotropization of a 3-Extra-Dimensional Brane in Tolman-Bondi Universe*", oral communication, Spanish Relativity Meeting - ERE 2012: Progress in Mathematical Relativity, Gravitation and Cosmology, Guimarães, September 2012 .
 - 44) José P. Mimoso, "Dust solutions with pseudo-spherical curvature", VIIIth Iberian Cosmology Meeting IBERICOS 2013, Granada, April 24th-26th, 2013.
 - 45) José P. Mimoso & Daniel Raposo, "Cosmological solutions with a no-hair asymptotic behaviour in modified gravity theories reducible to the scalar-tensor class", ENAA XXIII - National Meeting of Astronomy and Astrophysics, Lisbon, 18th-19th July 2013.
 - 46) José P. Mimoso and Diego Pavón, " Entropy in Universes evolving from initial to final de Sitter eras", poster presented at the IAU Symposium 306 Statistical Challenges in 21st Century Cosmology, Lisbon, May 2014.
 - 47) José P. Mimoso, M. Le Delliou, F.C. Mena, "Dividing global expansion from local contraction in spherically symmetric models with anisotropic pressures", ENAA XXIII - National Meeting and Astrophysics astronomer, Lisbon, 18th-19th July 2013.

- 48) José P. Mimoso*, Philippe Brax and Nelson Nunes, "On the Isotropization of Tolman-Bondi Branes", oral communication, New Worlds in Astroparticle Physics, Braga, January 2014.
- 49) José P. Mimoso, Salvatore Capozziello and Francisco Lobo, "Energy Conditions and Modified Gravity", oral communication, IXth Iberian Cosmology Meeting, Aveiro, April 2014.
- 50) José P. Mimoso, Salvatore Capozziello and Francisco Lobo, "Extended theories of gravity with generalized Energy Conditions", oral communication, ERE2014 - Spanish Relativity Meeting: Almost 100 years after Einstein revolution", Valencia, Espanha, Setembro 2014.
- 51) José P. Mimoso, "Conformal Time and Radiation", oral communication, UBI, Covilhã, February 2015.04.15
- 52) José P. Mimoso, "Conformal Time and Radiation", oral communication, Xth Iberian Cosmology Meeting, Aranjuez, Spain, April 2015.
- 53) José P. Mimoso, Francisco S. N. Lobo and Salvatore Capozziello, "Generalized energy conditions in Extended Gravity re-examined: the modified Gauss-Bonnet theory case study, " Encontro Nacional de Astronomia e Astrofísica, XXV ENAA, IST, Lisboa, July 2015.
- 54) José P. Mimoso, T. Harko, F. S. N. Lobo and D. Pavón, "Particle production from a gravitational non-minimal curvature-matter coupling", oral communication, ERE2015 - Spanish Relativity Meeting: "Stepping into the second century", Palma de Mallorca, Spain, September 2015.
- 55) José P. Mimoso, "The cosmological divide: local collapse versus global expansion", oral communication, GR 100 Years, in Lisbon, December 2015.
- 56) José P. Mimoso, F.S. N. Lobo and N. J. Nunes, "Stabilization of the sign of the gravitational constant", oral communication, XIth Iberian Cosmology Meeting, Vila do Conde, Portugal, March 2016.

Seminars:

- 1) "*A small part of the universe*", Department of Physics FCUL, on March 11, 1989.
- 2) "*Extended Inflation*", Group Theory of Gravitation CFMC, at Complexo II on April 18, 1990.
- 3) "*Cosmology in Jordan-Brans-Dicke Theory*", Centre for Astronomy, University of Sussex, 1992.
- 4) "*The density parameter in Scalar-Tensor Cosmologies*", Department of Physics IST on 30 November 1995.
- 5) "*Theories of gravity with variable G (Part I)*", Seminar in the MSc Course in Physics FCUL, on March 29, 1994.

- 6) *"Theories of gravity with variable G (Part II)"*, Seminar in the MSc Course, FCUL, on May 17, 1994.
- 7) *"Theories of gravity with variable G"*, Department of Physics, University of Évora, June 18, 1997.
- 8) *"General relativity as attractor for scalar-tensor theories of gravitation"*, Department Física do IST on 13 March 1998.
- 9) *"The expansion of the Universe Cosmologies with variable G"*, seminar given as part of the Master of Astronomy and Astrophysics, FCUL, April 17, 2002.
- 10) *"Cosmological Evolution for General Relativity"*, CFTC seminar, Interdisciplinary Complex of Lisbon University, February 12, 2003.
- 11) *"Scalar fields and matter: a dynamical bond"*, GATC, University of Beira Interior, May 16, 2001.
- 12) *"Einstein and dynamic universe"*, the International Year of Physics, FCUL April 18, 2005
- 13) *"The Evolving Universe"*, Army Geographic Institute, September 16, 2005.
- 14) *"Reheating Induced by non-homogeneous couplings"*, Institute of Cosmology and Gravitation, U. Portsmouth, May 16, 2008.
- 15) *"Reheating Induced by non-homogeneous couplings"*, Astronomy Centre, University of Sussex, May 18, 2008.
- 16) *"From the Big Bang to Galaxies"*, Seminar in the FSCE course "From Kepler to Fractals", 11 October 2009, FCUL.
- 17) *"From the Big Bang to Galaxies"*, Seminar in the FSCE course "From Kepler to Fractals", October 2010.
- 18) *"There Fundamental Constants?"*, Seminar, Department of Physics, Faculty of Science, University of Lisbon, March 16, 2011
- 19) *"From the Big Bang to Galaxies"*, Seminar in the FSCE course "From Kepler to Fractals", September 27, 2011, FCUL.
- 20) *"There are fundamental constants in the universe?"* Talk given in OAL, included in the Weekend of the Astronomical Week, 9 October 2011, Lisbon Astronomical Observatory.
- 21) *Ignite ("1,2,3, infinity and beyond")*, Lisbon Astronomical Observatory, July 2012.
- 22) *"Separating from Expansion Contraction in a spherically symmetric Universe"*, Institute of Cosmology and Gravitation, U. Portsmouth, July 11, 2012.
- 23) *"The cosmological divide: local collapse versus global expansion"*, EHU: Universidade do País Basco, Bilbao, October 15, 2014.

Member of national and international scientific organizations:

- Member of the Center for Nuclear Physics, University of Lisbon (CFNUL) from 1994 until 2002.
- Member of the Center for Theoretical and Computational Physics, University of Lisbon (UL-CFTC) from 2002 until 2009.
- Member of the Centre for Astronomy and Astrophysics, University of Lisbon since December 2009.
- Member of the Institute for Astrophysics and Space Science (IA), since 2014.
- Fellow of the Royal Astronomical Society since 1990.
- Member of the IAU
- Member of the Portuguese Society of Physics.
- Member of the Portuguese Society of Astronomy.

- Member of SEGRE - Society of Española Relativity (Since 2013 member of the Board of SEGRE).

Member of editorial boards and reviewer of scientific publications:

- Editor of the journal “Galaxies”.
- Referee of the journal General Relativity and Gravitation.
- Referee of Physical Review Letters.
- Referee of Physical Review D.
- Referee of the journal Classical and Quantum Gravity.
- Referee of the Journal of Cosmology and Astroparticles.
- Referee of the European Physical Journal C.
- Referee of the Acta Mathematicae Applicanda.

Reviewer of scientific research projects:

- Scientific Advisor to the Foundation for Research Support of the State of São Paulo (FAPESP).
- Scientific Reviewer of NRF – South Africa.

Outreach activities and dissemination of Science

- *Prism: In the light the physics*, the project coccyx-Computer Science and Culture in the Twenty-First Century, POCTI/DIV/2005/00096, member of the team that coordinated the development of e-learning contents that are found at URL: <http://cftc.cii.fc.ul.pt/PRISMA/>, and also contributed with texts.
- *Kepler to Fractals*: Participated in this discipline of FCSE (Cultural, Social and Ethical Formation), with contributed lectures on the Chapter 3 of the book: From the Big Bang to Galaxies (<http://cftc.cii.fc.ul.pt/KEPLER/>)
- Participation in “*Semana das Ciências de Sempre*”, Culturgest October 2012 (<http://www.culturgest.pt/actual/03-11-ciencias.html>).
- Interviewed in the Radio Program “*Science on Antena 2*” about the topic Dark Energy, (<http://www.rtp.pt/play/p783/e78114/antena2-ciencia>).
- Consultant of the magazine Visão; issue nº 978, 1 to 7 December 2011, on the theme “*12 new certainties of Science*” (<http://visao.sapo.pt/edicao-978=f636159>).
- “Contra-Tempwhos”, Talk given at the Whoniverso, meeting of fans of the Doctor Who science fiction Tv-Serial, November 21, 2014.
- Interviewed for the Newspaper Expresso Diário On-line edition, on the occasion of the 1st Century of Einstein’s presentation of the Theory of General Relativity to the Prussian Academy of Science, November 25, 2015.

Talks at Schools:

- 1) “*From the Big Bang to Galaxies*”, Secondary School Leal da Camara, February 14, 2006.
- 2) “*The elementary particles in the universe*”, European Masterclasses for Students of Secondary Education, U. Lisbon, March 17, 2007.
- 3) “*Physics and Chemistry of the Universe*”, Secondary School. José Cardoso Pires, November 12, 2007.

- 4) *"From the Big Bang to Galaxies"*, Maria Lamas Sec School, Torres Novas, November 22, 2007.
- 5) *"Contaminación Acustica,"* lecture / demonstration for students of the Primary cycle of the Spanish Institute o Giner de los Rios, Lisbon, May 20, 2009.
- 6) *"The Inverse Universe"*, Secondary School Jorge Peixinho, Montijo, on April 29, 2010.
- 7) *"The Shifting Universe"*, EB23 School Ferreira de Castro, Mem Martins, on 12 February 2010.
- 8) *"Relativity"*, Externato Marista, Lisbon, May 18, 2011
- 9) *"Einstein and the Dynamical Universe "*, Externato Marista, Lisbon, May 24, 2011
- 10) *"From the first second to the last ..."*, Secondary School Ferreira de Castro, Mem Martins, June 13, 2012.
- 11) *"From the Big Bang to Galaxies"*, Secondary School Josefa de Óbidos, November 11, 2015.

Participation in Scientific Meetings

National Conferences

- Physics 84 - National Conference on Physics held at Evora in 1984.
- Physics 86 - National Conference on Physics held in Braga in 1986.
- First National Meeting of Astronomy and Astrophysics, Porto, 1991.
- Second National Meeting of Astronomy and Astrophysics, Lisbon, 1992.
- Third National Meeting of Astronomy and Astrophysics, Lisbon, 1993.
- X National Meeting of Astronomy and Astrophysics, Lisbon, 2000.
- XI National Meeting of Astronomy and Astrophysics, Funchal, 2001.
- XVIII National Meeting of Astronomy and Astrophysics, Évora, 2008 ..
- XXI National Meeting of Astronomy Astrophysics, Coimbra, 2011.
- The Multidisciplinary Universe, A Conference in Honor of Jorge Dias of God, IST, Lisbon, 14 July 2011.
- XXII National Meeting of Astronomy Astrophysics, Porto, 2012.
- ENAA XXIII - National Meeting of Astronomy and Astrophysics, Lisbon, 18th-19th July 2013
- ENAA XXV - National Meeting of Astronomy and Astrophysics, Lisbon, 23rd-24th July 2015.

Schools and International Conferences:

Schools

- 1) Summer School on Dynamical Systems, held at ICTP, Trieste, Italy, in August 1983.
- 2) V ECG - School of Cosmology and Gravitation, held in Rio de Janeiro, Brazil, in 1987.
- 3) SUSSP: Physics of the Early Universe, (NATO School), Edinburgh, UK, 1989.
- 4) XII Autumn School of CFMC: Cosmology and Particle, Lisbon, 1990.

International Conferences

- 1) Pensée La Physique en 1980, colloquium Foundation Louis de Broglie, Peyresc, France, 1980.

- 2) Mathematical Theory of Dynamical Systems and Microphysics - Geometry and Mechanics, Udine, Italy, 1981.
- 3) 26th Liège International Astrophysical Colloquium: Origin and Early History of the Universe, held in Liège, Belgium, in July 1986.
- 4) GR 11 - 11th International Conference on General Relativity and Gravitation, held in Stockholm, Sweden, in 1986.
- 5) XII Luso-Spanish Days of Mathematics, held in Braga in 1987.
- 6) Silarg VI - Latin American Symposium on Relativity and Gravitation', held in Rio de Janeiro, Brazil, in 1987.
- 7) GR 12 - 12th International Conference on General Relativity and Gravitation, held in Boulder, Colorado, USA, in 1989.
- 8) Texas / ESO / CERN Conference on Relativistic Astrophysics, held in Brighton, 1990.
- 9) 1st Iberian Meeting on Gravity, Evora, 1992.
- 10) Workshop `` Theoretical and Particle Physics'', Madrid, Spain, 1994.
- 11) GR14 - 14th International conference on General Relativity and Gravitation, Florence, 1995.
- 12) The Non-sleeping Universe, Porto, 1997.
- 13) New Worlds in Astroparticle Physics, Faro, 1998.
- 14) Modern Theories of Structure Formation, Porto, 1999.
- 15) Cosmology 2000, Lisbon, 2000.
- 16) New Worlds in Astroparticle Physics, Faro, 2000.
- 17) JENAM 2002 (Joint European and National Astronomy Meeting), Porto, 2002.
- 18) Phi in the sky, Porto, 2004.
- 19) Einstein at pt, Lisbon, 2005.
- 20) ERE 2006 - Spanish Relativity Meeting, Palma Mallorca, 2006.
- 21) Ist Iberian Cosmology Meeting, Porto, December 2006.
- 22) BICOS, April 2007, Bilbao, Spain, 2007.
- 23) 2nd Iberian Cosmology Meeting, Bilbao, 2007.
- 24) 3rd Iberian Cosmology Meeting, Lisbon, 2008.
- 25) ERE 2008 - Spanish Relativity Meeting, Salamanca, 2008.
- 26) Dynamics and Applications, Braga, September 2008.
- 27) Black-Holes Workshop, Porto 2008.
- 28) 4th Iberian Iberian Cosmology Meeting-2009, Madrid, April 2009.
- 29) Mathematical Relativity in Lisbon, Conference Homage to Mira Fernandes, Lisbon, June 18-19, 2009.
- 30) Sciamia Meeting, The Unity of the Universe, Portsmouth, June-July, 2009.
- 31) ERE 2009 - Spanish Relativity Meeting, Bilbao, 2009.
- 32) Black-Holes Workshop, Lisbon 2009.
- 33) 5th Iberian Cosmology Meeting - Ibericos 2010, Porto, 2010.
- 34) JENAM 2010 (Joint European and National Astronomy Meeting), Lisbon, 2010.
- 35) ERE 2010 - Spanish Relativity Meeting, Granada, 2010.
- 36) 6th Iberian Cosmology Meeting - Ibericos 2011, Salamanca, 2011.
- 37) ERE 2011 - Spanish Relativity Meeting, Madrid, 2011.
- 38) 7th Iberian Cosmology Meeting - Ibericos 2012, Lisbon.
- 39) ERE 2012 - Spanish Relativity Meeting, Guimarães, 2012.
- 40) IBERICOS 2013, VIIIth Iberian Cosmology Meeting Granada, April 24th-26th, 2013
- 41) New Worlds in Astroparticle Physics, Braga, January 2014.
- 42) IberiCOS 2014, IXth Iberian Cosmology Meeting, Aveiro, April 2014.

- 43) IAU Symposium 306 Statistical Challenges in 21st Century Cosmology, Lisbon, May 2014
- 44) ERE 2014 - Spanish Relativity Meeting, Valencia, 2014.
- 45) COSGRAV, Cosmology and Gravitation at the University of Beira Interior UBI, Covilhã, 2015.
- 46) IberCOS 2015, X th Iberian Cosmology Meeting, Aranjuez, 2015.
- 47) IeriCOS 2016, XI th Iberian Cosmology Meeting, Vila do Conde, 2016

Management of units or research centers

- Vice-President of the Physics Department of the Faculty of Science, University of Lisboa, since September 2012.
- Member of the Direction of the Center for Theoretical and Computational Physics of Univerdidade Lisbon, since its founding in 2002 until 2007.
- Vice-Director of CAAUL since 2011.

Coordination or management of research projects:

- *Cosmology with varying couplings*, CERN/FP/123618/2011, PI: José Pedro Mimoso
- *Cosmology with Coupled Components*, PTDC/FIS/102742/2008 - PI: José Pedro Mimoso.
- *The Primordial Universe and dark energy*, Pessoa Program 2010/2011 - Cooperation Portugal / France - IP of the Portuguese Team: José Pedro Mimoso.
- *Cosmology interacting with multi-components*, POCI/FNU/50216/2003 Project - Project Principal Investigator: José Pedro Mimoso.
- *Scalar fields cosmology*, POCTI/FNU/49511/2002 Project - Project Principal Investigator: José Pedro Mimoso.
- *Non-linear phenomena in celestial mechanics, astrophysics and cosmology*, PBICT/P/FIS/2215/95 Project - Project Principal Investigator: José Pedro Mimoso.

Participation in research projects and contracts:

- *Late-time cosmic acceleration: Dark energy and modified gravity*, CERN/FP/123615/2011 - PI: Francisco SN Lobo
- *Late-time cosmic acceleration: Dark energy and modified gravity*, CERN/FP/116398/2010 - PI: Francisco SN Lobo.
- *Recent acceleration of the universe: dark energy and modified gravity*, CERN/FP/109381/2009 Project - Project Principal Investigator: Francisco Lobo.
- Element of the project team: *COCCIX COMPUTER SCIENCE AND CULTURE IN SEC. XXI*, POCTI/DIV/2005/00096.
- Team member of several projects CERN: *Particle Physics, Relativity and Cosmology* (project renovated from 1989 to 2002, Principal Investigator: Prof. Augusto Barroso).
- Element of the project team PRAXIS: *Fundamental Interactions in Nuclear Physics, Particle Physics and Cosmology* (Principal Investigator: Prof.^a Ana Maria Eiró). Project PRAXIS/2/2.1/FIS/223/94.

Supervision of academic work:

Supervision of post-doctoral and doctoral students:

- 1) PhD thesis, Tiago Gorjão Clara Charters de Azevedo, May 2006, University of Lisbon (supervision in collaboration with Prof. Ana Nunes).
- 2) Supervision of PhD Student Miguel Angelo Oliveira, co-supervised by Dr. Aleksandar Mikovic on "Quantum Gravity 'Loops' and formalism of spinfoams"
- 3) Supervision of the postdoc Dr. Morgan Le Delliou, from 1 April 2005 to 31 March 2008, BPD Grant from FCT at the CFTC.
- 4) Supervision of postdoc of Dr. António Manuel Cardoso, from 2010 to 2011.
- 5) Supervision of postdoc of Dr. Marina Vinhas Cortês, from 1 October 2012
- 6) Supervision of Post-Doc work of Ippocratis Saltas, since October 1st, 2014
- 7) Supervision of Post-Doc work of Aberto Rozas Fernandez, since December 1st, 2014

Supervision of MSc students

- 1) "Dynamics of cosmological models and conditions of inflation," Master's thesis of Tiago Gorjão Clara Charters de Azevedo, February 2000, Department of Physics, Faculty of Science, U. Lisbon (directed in collaboration with Prof. Ana Nunes).
- 2) Supervision of the Master thesis "Baryogenesis in Scalar-Tensor Cosmologies" João Ferraz (2010/2011, 2011/2012- at present writing up thesis).
- 3) Supervision of BII-student João Baptista da Gama, on "LATTICEEASY after reheating and Inflation", in the academic year 2008/2009, the CFTC
- 4) Supervision of the project of Ruben Vicente Olavo, "Structure Formation by Gravitational Instability", July 2007, Department of Physics FCUL.

Transfer of Knowledge:

- Training Course in the Department of Physics on "Modern Physics in Secondary Education": Participation as a trainer with a module on "From the Big Bang to Galaxies".

Awards, scholarships and grants:

- Grant from the University of Lisbon, April to July 1989, University of Sussex.
- Doctoral grant the INIC October 1989 to April 1993, University of Sussex.

Visits to research centers and universities of international prestige:

- Member of the Astronomy Centre, University of Sussex October 1989 to March 1993, where he worked with Prof. John D. Barrow.
- Visiting Researcher at the Institute for Structure de la Materia CSIC in Madrid, integrated in the group of Prof. Mariano Quirós, from 1 October 1994 to 28 February 1995 and 1 October 1995 to 29 February 1996.
- Visiting at the Department of Theoretical Physics and History of Science at the University of the Basque Country, Bilbao, March-April 2008.
- Visitor at the Institute of Cosmology and Gravitation, University of Portsmouth, in May 2008.
- Visitor at the Astronomy Center of the University of Sussex in May 2008.

- Visitor at the Institute of Cosmology and Gravitation, University of Portsmouth, in June 2009.
- Visitor at the Statistical Physics Department of the Autonomous University of Barcelona in March 2011.
- Visitor at the Institute of Cosmology and Gravitation, University of Portsmouth in July 2012.
- Visitor at the Statistical Physics Department of the Autonomous University of Barcelona in December 2012.
- Visitor at the Department of Theoretical Physics and History of Science at the University of the Basque Country, Bilbao, October and December 2014.
- Visitor at the Statistical Physics Department of the Autonomous University of Barcelona in November 2015.

Teaching:

As a Teaching Assistant, Department of Mathematics, Faculty of Science and Technology, New University of Lisbon, was in charge of the practice (exercises) classes of the following subjects:

- 1) Linear Algebra and Analytic Geometry, (1982-83,1983-84)
- 2) Mathematics II (1982-83,1983-84)
- 3) Complements of Mathematics (1983-1984).

As Assistant Trainee and then as Assistant Department of Physics, Faculty of Science, University of Lisbon, he has been in charge of the exercise practice classes (TP) and laboratory practice classes (P) of the following disciplines:

- 1) Elements of Physics II (P-Course Biology, 1983-1984),
- 2) Laboratory of Physics I (P, 1983-84),
- 3) General Physics I (TP, 1984-85),
- 4) General Physics II (TP 0.1984-85)
- 5) Mathematical Methods of Physics I (TP ,1984-85 ,1985-86, 1986-87, 1987-88, 1988-89),
- 6) Quantum Theory (TP, 1984-85),
- 7) Applied Mechanics II (TP, 1984-85),
- 8) Electromagnetism I (TP, 1985-86, 1986-87, 1987-88, 1988-89),
- 9) Electromagnetism II (TP, 1984-85),
- 10) Dynamical Systems (TP, 1985-86),
- 11) Analytical Mechanics (TP, 1986-87),
- 12) Techniques of Mathematical Physics II (TP, 1987-88),
- 13) Thermodynamics (TP, 1992-93, 1993-94),
- 14) Elements of Physics for Geologists (P, 1992-93, 1993-94).

As a Professor Auxiliar, and Professor Associado of the Department of Physics, Faculty of Science, University of Lisbon, he was in charge of the problem solving classes (TP) and laboratory practices (P) of the following disciplines:

- 1) General Physics III (TP, 1994-95,1995-96)
- 2) Experimental Physics I (P, 1994-95),
- 3) Experimental Physics III (P 1998-99,1999-2000)
- 4) Statistical Physics (TP, 1998-99),
- 5) General Physics (P and TP - Biology course, 1992-93,2002-03)
- 6) Mathematical Methods of Physics I and II (TP 2001-02,2002-03)
- 7) Continuum Mechanics I (TP, 2001-02,2002-03)
- 8) Numerical Methods and Programming (TP, 2003-04),
- 9) Physics (TP - Computer Course 2003-04),
- 10) Continuum Mechanics (TP-2008-2009)
- 11) Experimental Physics (Dept.. Computing-P-2008-2009)
- 12) Mechanics and Waves (Dept.. DEGGE-P-2008-2009).
- 13) Física/PhysicsA (Dept. Informatics, TP-2013-2014)

And was in charge of the undergraduate subjects

- 1) Relativity and Cosmology (T - 1995-1996, 1996-1997,1997-1998, 2001-2002, 2004-2005,2005-2006,2010-2011,2011-2012,2012-2013,2013-2014,2014-2015)
- 2) Mathematical Methods of Physics II (T-- 2002-03,2003-2004)
- 3) Statistical Physics (T and TP - 2001-2002, 2002-2003, 2003-2004, 2004-2005, 2005-2006,2006-2007)
- 4) Analytical Mechanics (T and TP - 2006-2007)
- 5) Elements of Physics for Geologists (T and TP - 2008-2009,2009-2010,2010-2011,2011-2012,2012-2013, ,2013-2014,2014-2015, 2015-2016, Labs: 2014-2015, 2015-2016)
- 6) Continuum Mechanics (T & TP: 2009-2010,2010-2011,2011-2012)
- 7) Física A/Physics A (Dept. Informatics, TP-2013-2014)
- 8) Electromagnetic Field Theory, (T & TP: 2015-2016)

And Masters courses on

- 1) Early Universe, Inflation and Training Structure (2009-2010,2010-2011,2011-2012)
- 2) Physical Cosmology (2010-2011,2011-2012)
- 3) Seminar Masters in Physics (1997-98, 1998-99).

Innovative School Experiences

- Participated in the conception and writing up of e-learning scientific contents of “*Prisma – in the light of Physics*” (URL: <http://cftc.cii.fc.ul.pt/PRISMA/>)
- *Porquê* - During 2005-2006 and 2006-2007 was responsible for putting in practice and coordinating this action aimed at explaining Physics to school children aged between 10 and 12 years. (http://fisica.fc.ul.pt/noticias_porque.html)

Participation in the training of the teaching staff of the institution and other institutions:

Supervision of Secondary School teachers:

- School EBS Fragata do Tejo, Moita, during the academic year of 2001-2002 (2 students),
- Secondary School Fernando Lopes Graça, Parede, during the academic year 2002-2003 (3 students),
- Secondary School Padre Alberto Neto, during Queluz, the 2006-2007 academic year (3 students).

Membership of the Juris of Theses

PhD Thesis

- 1) "Homogeneous Cosmologies: Analysis of Observational Parameters", PhD Thesis of Paul Aguiar, May 2004.
- 2) Violating Conditions Energy Solutions in General Relativity: Traversable Wormholes and 'Warp Drive' spacetimes ", PhD Thesis of Francisco Sabélio Nóbrega Lobo, University of Lisbon, July 7, 2005.
- 3) "Dynamics of Cosmological Models", PhD thesis of Tiago Charters de Azevedo, University of Lisbon, May 2006.
- 4) "Cosmological Parameters Estimation with Cosmic Shear," PhD thesis of Ismael Tereno, July 18, 2007.
- 5) "Domain Walls in Cosmology: Network Evolution and Dark Energy Scenarios", PhD thesis Joana Oliveira, Universidade do Porto, July 17, 2007.
- 6) "Unified Dark Energy Models", PhD Thesis Luis Beça, University of Porto, March 14, 2008 (external examiner).
- 7) "*Cosmología No Estándar: Presente y Futuro del Universo*", PhD Thesis of Maria del Prado Martin-Moruno, Institute for Fundamental Physics, CSIC and Universidad Autónoma de Madrid, July 19, 2010 (external examiner).
- 8) "Cosmic Models and Holography", PhD Thesis Alberto Rozas-Fernandez, Institute for Fundamental Physics, CSIC and Universidad Autónoma de Madrid, March 11, 2011 (external examiner).
- 9) "The Interaction of Dark Energy and Dark Matter", PhD Thesis of Paulo Miguel Torres Cachão Salgado, Instituto Superior Técnico, July 15, 2011 (external examiner).
- 10) "Universe and Multiverse quantum", PhD Thesis Salvador Robles-Perez, CSIC and Universidad Autónoma de Madrid, 2011 (external examiner).
- 11) External examiner of the thesis Javier Peña Rubio, "Higgs Cosmology From the Early to the Late Universe", Institute for Fundamental Physics, Autonomous University of Madrid, June 2011.
- 12) "Strings and Brane Networks in Higher Dimensions", PhD Thesis of Lara Sousa, University of Porto, November 18, 2011.
- 13) "On the future stability of cosmological solutions of the Einstein-nonlinear scalar field system", PhD thesis of Artur Alho, University of Minho, December 4, 2012
- 14) "Trajectory Anomalies in Interplanetary Spacecraft", PhD thesis of Frederico André Branco dos Reis Francisco, December 2014, IST, University of Lisboa (Reporter).
- 15) "Correlaciones en espaciotiempos cuánticos: falsabilidad del multiverso", PhD thesis of Ana Alonso Serrano, Universidad Complutense de Madrid, June 26, Madrid, Spain.

Master Thesis

- 1) "FLRW cosmological solutions in the presence of scalar fields," Master's thesis in physics João Pedro Abreu, Department of Physics, Faculty of Science, University of Lisbon, 1995.
- 2) "Schwarzschild black holes and cosmological applications," Master's thesis in physics Rosa Doran, Department of Physics, Faculty of Science, University of Lisbon, 1997.
- 3) "Relativistic Cosmology, inflation and dark matter," Master's thesis in Physics of the of Maria da Assunção Figueiredo da Silva, Department of Physics, University of Évora, 1998.
- 4) "Wormholes Lorentzianos," Master's thesis in physics Francisco S. N. Lobo, Department of Physics, Faculty of Science, University of Lisbon, 1999.
- 5) "A qualitative study of a three-component cosmological fluid," Master's thesis in physics, Ana Margarida Afonso, Department of Physics, Faculty of Science, University of Lisbon, 1999.
- 6) "Space-time with static spherical symmetry," Master's thesis in physics Tereno Ismael, Department of Physics, Faculty of Science, University of Lisbon, 1999.
- 7) "Dynamics of cosmological models and conditions of inflation," Master's thesis of Tiago Charters de Azevedo, Department of Physics, Faculty of Science, University of Lisbon, February 2000.
- 8) "Observational Constraints on Dark Matter from Cosmic Strings", Master Thesis of Nuno Miguel Rodrigues Guerreiro, December 18, 2008, FC-Porto University.
- 9) "The History of the Universe from the Observation of Cosmic Microwave Background: From Vision to Newtonian equations of General Relativity", Master Thesis, André Machado Murtinheira Martins, University of Lisbon, December 4, 2009.
- 10) "Stochastic Gravitational Waves from a new type of modified Chaplygin Gas", Master Thesis of Pedro António Pinto Frazão, Instituto Superior Técnico, November 11, 2009.
- 11) "Dynamics of perfect fluids in nonminimally coupled gravity," Master Thesis of António Martins, Instituto Superior Técnico, 2012.
- 12) "The Two Scalar Field Model for the Interaction of Dark Energy and Dark Matter", Master Thesis of Pedro Carrilho, Instituto Superior Técnico, September 2012.
- 13) "The effects of a bounce on the spectrum of the Gravitational Waves in the metric $f(R)$ gravity", Master Thesis of João André Viegas Moraes, Instituto Superior Técnico, 17 October 2012.
- 14) "Geometrical methods in electromagnetism and gravitation. Gravitomagnetism and gravity with torsion (with cosmological applications)", Master Thesis of Francisco Tenreiro Oliveira Cabral, Faculty of Science, University of Lisbon, December 2012.
- 15) "Inércia, Espaço e Tempo (com uma aplicação teórica que dispensa a Matéria Escura)", Master Thesis of Manuel Baroso Xavier, Faculty of Science, University of Lisbon, June 17, 2015.

Advanced Training Course

- 1) Advanced Training Course Hugo Galhardas Messias, "Galaxies in extremely vermelhas GOODS-South," July 17, 2008, Faculty of Science, University of Lisbon.

Relevant activities to the mission of the university:

Academic positions and functions:

- Representative of the “Assistentes” in the Scientific Council of the Department of Physics, Faculty of Science, University of Lisbon from 1986 to 1989.
- Representative of the “Assistentes” in the Coordinating Board of the Department of Physics in the period 1988 -1989.
- Member of “Assembleia de Representantes” of the Faculty of Science, University of Lisbon from 2003 to 2007.
- Member of the Coordinating Board (vice- Coordinator) of the Center for Theoretical and Computational Physics, University of Lisbon (CFTC) from 2002 until 2008; from May 2009 to December 2009, PI of the line of Particle Physics and Cosmology of the CFTC.
- Vice-Director of the Center for Astronomy and Astrophysics (CAAUL), as PI of the line Galaxies and Evolution of the Universe, from April 28, 2011 to November 2014.
- Vice-Chairman of the Department of Physics, Faculty of Science, University of Lisbon from September 1, 2012 to August 31, 2015.

Cultural Extension Activity:

- Participation in the exhibition *Física à Solta*, from the 22nd to 27th November, 2005, at the Exhibition Center of CCB.
- Participation in the exhibition *Futurália* – Feira do Ensino, FIL, 10 to 12 December, 2008.
- Participation in the *VII Jornadas de Orientación* of the Instituto Español Giner de Los Rios, April 27, 2009.
- Participation in the exhibition *Futurália* – Feira do Ensino, FIL, March, 2014.
- Participation in the exhibition *Futurália* – Feira do Ensino, FIL, 11 to 14 March, 2015.
- Participation in the *X Jornadas de Orientación* of the Instituto Español Giner de Los Rios, March 13, 2013.
- Participation in the Dias Abertos (Open day) of the Faculty of Science in 2005, 2013, 2014.