Curriculum Vitae

PERSONAL DATA

Family name: Bouhmadi López Forename: Mariam
ID no: 75096321X Date of birth : 05/03/1976 Gender: Female
Nationality: Moroccan & Spanish
WoS Researcher ID: AAF-8174-2019
SCOPUS Author ID: 6508339470
ORCID ID: 0000-0002-1529-1889

PRESENT PROFESSIONAL POSITION

Institution: Ikerbasque
Faculty: Faculty of Science and Technology of the Basque Country
Department: Physics
Address: Leio Campus (Bilbao)
Post Cod: P.O. Box 644 Province: Vizcaya
Country: Spain
Telephone: +34 94 6012598
Fax: +34 94 6015399
E-mail: mariam.bouhmadi@gmail.com, mariam.bouhmadi@ehu.eus
Professional status: Ikerbasque Associate

PRESENT RESEARCH AREA

Brief summary (key words): Dark energy models, quantum cosmology and modified theories of gravity.

ACADEMIC BACKGROUND

Bachelor on Theoretical Physics

Date	Center	Center
16 July 1998	Faculty of Science of Granada	University of Granada

Ph.D. on Theoretical Physics

Date	Center	Thesis Supervisor
6 May 2003	University Autónoma of Madrid & IMAFF (CSIC)	Pedro Félix González Díaz

PAST SCIENTIFIC EXPERIENCE

Position	R&C Center	Institution	Start date	End date
Investigador FCT	CMA	UBI (Portugal)	01/07/2014	28/02/2017
Ikerbasque Fellow	UPV	UPV(Spain)	15/02/2013	20/06/2014
JAE Postdoc	IEM	CSIC (Spain)	01/04/2012	31/01/2013
FCT Postdoc	CENTRA	Instituto Superior Técnico (Portugal)	01/06/2006	31/03/2012
Postdoc	ICG	University of Portsmouth (UK)	01/07/2003	30/04/2006[1]
Postdoc	Dept. of Physics	University of Beira Interior (Portugal)	01/05/2003	30/06/2003
Ph.D. S.	IMAFF	CSIC	01/01/1999	30/04/2003

LANGUAGES (N = NORMAL, G = GOOD, P = PERFECTLY)

Language	Speaking	Reading	Writing
Arabic	P	P	P
English	P	P	P
French	P	P	P[2]
Portuguese	P	P	G
Spanish	P	P	P

PARTICIPATION IN RESEARCH PROJECTS

PROJECT TITLE: Gravitación y Física del Cosmos
FINANCIAL ENTITY: MINECO (Spain)
LENGTH: 4 years FROM: 2017 TO: 2021
PRINCIPAL INVESTIGATOR: Ruth Lazkoz.

PROJECT TITLE: Gravitación y Cosmología
FINANCIAL ENTITY: Gobierno Vasco
LENGTH: 5 years FROM: 2016 TO: 2021
PRINCIPAL INVESTIGATOR: José Maria Martín Senovilla.

PROJECT TITLE: Cosmology and Astrophysics Network for Theoretical Advances and Training Actions (CANTATA)
FINANCIAL ENTITY: COST (European Cooperation in Science and Technology)–Horizon 2020

[1] I had a two years post-doctoral fellowship financed by the Spanish Ministry of Education, Culture and Sport to work at the ICG. My fellowship was interrupted in August 2004 after I was involved in a car accident. I restarted my post-doctoral fellowship in June 2005. I would like as well to higlight that the webform to fill Form A did not allow me to include the dates as I am stating them here. In particular there was a gap between when I left England and I moved to Portugal and between when I left Madrid in 2013 and I joined UPV in 2013. I was not allowed to include those gaps on the electronic form.

[2] I did up to high school in Morocco in a bilingual system based on Arabic and French.

LENGTH: 5 years FROM: 2016 TO: 2020
PRINCIPAL INVESTIGATOR: Ruth Lazkoz.

PROJECT TITLE: Gravitación y Física del Cosmos
FINANCIAL ENTITY: MEC (Spain)
LENGTH: 3 years FROM: 2014 TO: 2017
PRINCIPAL INVESTIGATOR: Ruth Lazkoz.

PROJECT TITLE: Centro de Matemáticas e aplicaçoẽs da Universidade da Beira Interior
FINANCIAL ENTITY: Fundação para a Ciência e Tecnología (FCT-Portugal)
LENGTH: 2 years FROM: 2015 TO: 2017
PRINCIPAL INVESTIGATOR: Helena Maria Simões Ferreira.

PROJECT TITLE: Cosmología Relativista y Gravitación
FINANCIAL ENTITY: Gobierno Vasco
LENGTH: 3 years FROM: 2013 TO: 2015
PRINCIPAL INVESTIGATOR: Alexander Feinstein

PROJECT TITLE: Late-time acceleration of the Universe: modified theories of gravity and dark energy related singularities
FINANCIAL ENTITY: Fundação para a Ciência e Tecnología (FCT-Portugal)
LENGTH: 4 years FROM: 2011 TO: 2015
PRINCIPAL INVESTIGATOR: **Mariam Bouhmadi-López**

PROJECT TITLE: Cosmology and quantum phenomena in the Universe
FINANCIAL ENTITY: CSIC (Spain) - National Science Council of Taiwan
LENGTH: 3 years FROM: 2012 TO: 2013
PRINCIPAL INVESTIGATOR: âGuillermo Mena Marugán

PROJECT TITLE: Phenomenology of gravitational events in LHC II
FINANCIAL ENTITY: Fundação para a Ciência e Tecnología (FCT-Portugal)
LENGTH: 1 year FROM: 2009 TO: 2010
PRINCIPAL INVESTIGATOR: Andrea Nerozzi

PROJECT TITLE: Cosmological consequences of quantum theories of gravity
FINANCIAL ENTITY: Fundação para a Ciência e Tecnología
LENGTH: 5 years FROM: 2005 TO: 2008
PRINCIPAL INVESTIGATOR: Alfredo Barbosa Henriques

PROJECT TITLE: Quintaesencia, branas y holografía en modelos cosmológicos para el estudio de fenómenos astrofísicos
FINANCIAL ENTITY: MEC (Spain)
LENGTH: 3 years FROM: 1-1-2006 TO: 31-12-2008
PRINCIPAL INVESTIGATOR: Pedro Félix González Díaz

PROJECT TITLE: Investigación e introducción de nuevos métodos teóricos y matemáticos para el

estudio de fenómenos astrofísicos
FINANCIAL ENTITY: CSIC-CNRST (Morocco)
LENGTH: 2 years FROM: 1-1-2006 TO: 31-12-2007
PRINCIPAL INVESTIGATOR: Pedro Félix González Díaz

PROJECT TITLE: Quintaesencia y branas en cosmología
FINANCIAL ENTITY: MCYT
LENGTH: 3 years FROM: 1-1-2003 TO: 31-12-2005
PRINCIPAL INVESTIGATOR: Pedro Félix González Díaz

Reference Number: DGICYT PB98-0520
FINANCIAL ENTITY: MCYT
LENGTH: 3 years FROM: 01-12-1999 TO: 30-11-2002
PRINCIPAL INVESTIGATOR: Víctor Aldaya

PROJECT TITLE: Aspectos físicos de la gravedad cuántica
FINANCIAL ENTITY: DGICYT
LENGTH: 3 years FROM: 1998 TO: 2001
PRINCIPAL INVESTIGATOR: Pedro Félix González Díaz

PUBLICATIONS (Refereed)

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1. **"ΛCDM suitably embedded in $f(R)$ with a non-minimal coupling to matter "**
   M. Ortiz-Baños, M. Bouhmadi-López, R. Lazkoz and V. Salzano,
   arXiv:2103.01982 [gr-qc]
   doi:10.1140/epjc/s10052-021-09004-z
   Eur. Phys. J. C **81**, no.3, 237 (2021)

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2. **"Lessons from black hole quasinormal modes in modified gravity"**
   C. Y. Chen, M. Bouhmadi-López and P. Chen,
   arXiv:2103.01249 [gr-qc]
   doi:10.1140/epjp/s13360-021-01227-z
   Eur. Phys. J. Plus **136**, no.2, 253 (2021)

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3. **"Non-minimal Higgs inflation within holographic cosmology"**
   A. Bargach, F. Bargach, M. Bouhmadi-López and T. Ouali,
   arXiv:2012.04342 [gr-qc]
   doi:10.1103/PhysRevD.102.123540
   Phys. Rev. D **102**, 12 (2020)

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4. **"Regular Black Hole Interior Spacetime Supported by Three-Form Field,"**
M. Bouhmadi-López, C. Y. Chen, X. Y. Chew, Y. C. Ong and D. H. Yeom,
arXiv:2005.13260 [gr-qc]
doi:10.1140/epjc/s10052-021-09080-1
Eur. Phys. J. C **81**, no.4, 278 (2021)

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5. **"A consistent model of non-singular Schwarzschild black hole in loop quantum gravity and its quasinormal modes,"**
M. Bouhmadi-López, S. Brahma, C. Y. Chen, P. Chen and D. h. Yeom,
arXiv:2004.13061 [gr-qc]
doi:10.1088/1475-7516/2020/07/066
JCAP **07**, 066 (2020)

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6. **"Annihilation-to-nothing: a quantum gravitational boundary condition for the Schwarzschild black hole,"**
M. Bouhmadi-López, S. Brahma, C. Y. Chen, P. Chen and D. h. Yeom,
arXiv:1911.02129 [gr-qc]
doi:10.1088/1475-7516/2020/11/002
JCAP **11**, 002 (2020)

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7. **"Classical and quantum fate of the little sibling of the big rip in $f(R)$ cosmology,"**
T. Borislavov Vasilev, M. Bouhmadi-López and P. Martín-Moruno,
arXiv:1907.13081 [gr-qc]
doi:10.1103/PhysRevD.100.084016
Phys. Rev. D **100**, no.8, 084016 (2019)

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8. **"Cosmological constraints of phantom dark energy models,"**
A. Bouali, I. Albarran, M. Bouhmadi-López and T. Ouali,
arXiv:1905.07304 [astro-ph.CO]
doi:10.1016/j.dark.2019.100391
Phys. Dark Univ. **26**, 100391 (2019)

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9. **"Phantom singularities and their quantum fate: general relativity and beyond—a CANTATA COST action topic,"**
M. Bouhmadi-López, C. Kiefer and P. Martín-Moruno,
arXiv:1904.01836 [gr-qc]
doi:10.1007/s10714-019-2618-y
Gen. Rel. Grav. **51**, no.10, 135 (2019)

---

10. **"Asymptotic non-flatness of an effective black hole model based on loop quantum gravity,"**
M. Bouhmadi-López, S. Brahma, C. Y. Chen, P. Chen and D. h. Yeom,
arXiv:1902.07874 [gr-qc]

doi:10.1016/j.dark.2020.100701
Phys. Dark Univ. **30**, 100701 (2020)

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11. **"An interacting holographic dark energy model within an induced gravity brane,"**
M. H. Belkacemi, Z. Bouabdallaoui, M. Bouhmadi-López, A. Errahmani and T. Ouali,
arXiv:1812.06782 [gr-qc]
doi:10.1142/S0218271820500662
Int. J. Mod. Phys. D **29**, no.09, 2050066 (2020)

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12. **"Eddington-inspired-Born–Infeld tensorial instabilities neutralized in a quantum approach,"**
I. Albarran, M. Bouhmadi-López, C. Y. Chen and P. Chen,
arXiv:1911.03935 [gr-qc]
doi:10.1140/epjc/s10052-019-7598-2
Eur. Phys. J. C **80**, no.1, 33 (2020)

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13. **"Probing Palatini-type gravity theories through gravitational wave detections via quasinormal modes"**
C. Y. Chen, M. Bouhmadi-López and P. Chen.
arXiv:1811.12494 [gr-qc]
DOI:10.1140/epjc/s10052-019-6585-y
Eur. Phys. J. C **79**, no. 1, 63 (2019)

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14. **"The interacting multiverse and its effect on the cosmic microwave background"**
M. Bouhmadi-López, M. Kraemer, J. Morais and S. Robles-Pérez.
arXiv:1809.09133 [gr-qc]
DOI:10.1088/1475-7516/2019/02/057
JCAP **1902**, 057 (2019)

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15. **"Quantum cosmology of Eddington-Born-Infeld gravity fed by a scalar field: the big rip case"**
I. Albarran, M. Bouhmadi-López, C. Y. Chen and P. Chen.
arXiv:1811.05041 [gr-qc]
DOI:10.1016/j.dark.2018.100255
Phys. Dark Univ. , 100255

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16. **"On the Consistency of the Wheeler-DeWitt Equation in the Quantized Eddington-inspired Born-Infeld Gravity"**
M. Bouhmadi-López, C. Y. Chen and P. Chen.
arXiv:1810.10918 [gr-qc]
DOI:10.1088/1475-7516/2018/12/032
JCAP **1812**, no. 12, 032 (2018), [JCAP **2018**, 032 (2020)]

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17. **"$f(R)$ quantum cosmology: avoiding the Big Rip"**
A. Alonso-Serrano, M. Bouhmadi-López, and P. Martín-Moruno.
arXiv:1802.03290 [gr-qc]
DOI:10.1103/PhysRevD.98.104004
Phys. Rev. D **98**, no. 10, 104004 (2018)

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18. **"Regular Instantons in the Eddington-inspired-Born-Infeld Gravity: Lorentzian Wormholes from Bubble Nucleations"**
M. Bouhmadi-López, C. Y. Chen, P. Chen and D. h. Yeom.
arXiv:1809.06579 [gr-qc]
DOI:10.1088/1475-7516/2018/10/056
JCAP **1810**, no. 10, 056 (2018)

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19. **"Quantum behavior of the "Little Sibling" of the Big Rip induced by a three-form field"**
M. Bouhmadi-López, D. Brizuela and I. Garay.
arXiv:1802.05164 [gr-qc]
DOI:10.1088/1475-7516/2018/09/031
JCAP **1809**, no. 09, 031 (2018)

---

20. **"Pre-inflation from the multiverse: Can it solve the quadrupole problem in the cosmic microwave background?"**
M. Bouhmadi-López, M. Kraemer, J. Morais and S. Robles-Pérez.
arXiv:1711.05138 [gr-qc]
DOI:10.1140/epjc/s10052-018-5698-z
Eur. Phys. J. C **78**, no. 3, 240 (2018)

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21. **"Black hole solutions in mimetic Born-Infeld gravity"**
C. Y. Chen, M. Bouhmadi-López and P. Chen.
arXiv:1710.10638 [gr-qc]
DOI:10.1140/epjc/s10052-018-5556-z
Eur. Phys. J. C **78**, no. 1, 59 (2018)

---

22. **"More on the holographic Ricci dark energy model: smoothing Rips through interaction effects?"**
M. Bouhmadi-López, A. Errahmani, T. Ouali and Y. Tavakoli.
arXiv:1707.07200 [gr-qc]
DOI:10.1140/epjc/s10052-018-5773-5
Eur. Phys. J. C **78**, no. 4, 330 (2018)

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23. **"What if gravity becomes really repulsive in the future?"**
I. Albarran, M. Bouhmadi-López and J. Morais.
arXiv:1706.01484 [gr-qc]

DOI:10.1140/epjc/s10052-018-5728-x
Eur. Phys. J. C **78**, no. 3, 260 (2018)

---

24. **"Self-acceleration and matter content in bicosmology from Noether Symmetries"**
M. Bouhmadi-López, S. Capozziello and P. Martín-Moruno.
arXiv:1610.07346 [gr-qc]
DOI:10.1007/s10714-018-2357-5
Gen. Rel. Grav. **50** (2018) no.4, 36

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25. **"Primordial Cosmology in Mimetic Born-Infeld Gravity"**
M. Bouhmadi-López, C. Y. Chen and P. Chen.
arXiv:1709.09192 [gr-qc]
DOI:10.1088/1475-7516/2017/11/053
JCAP **1711**, no. 11, 053 (2017)

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26. **"What if? Exploring the Multiverse through Euclidean wormholes"**
M. Bouhmadi-López, M. Krämer, J. Morais and S. Robles-Pérez.
arXiv:1708.00025 [gr-qc]
DOI:10.1140/epjc/s10052-017-5279-6
Eur. Phys. J. C **77**, no. 10, 718 (2017)

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27. **"Doomsdays in a modified theory of gravity: A classical and a quantum approach"**
I. Albarran, M. Bouhmadi-López, C. Y. Chen and P. Chen.
arXiv:1703.09263 [gr-qc]
DOI:10.1016/j.physletb.2017.07.053
Phys. Lett. B **772**, 814 (2017)

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28. **"Cosmic infinity: A dynamical system approach"**
M. Bouhmadi-López, J. Marto, J. Morais and C. M. Silva.
arXiv:1611.03100 [gr-qc]
DOI:10.1088/1475-7516/2017/03/042
JCAP **1703**, no. 03, 042 (2017)

---

29. **"Cosmological perturbations in an effective and genuinely phantom dark energy Universe"**
I. Albarran, M. Bouhmadi-López and J. Morais.
arXiv:1611.00392 [astro-ph.CO]
DOI:10.1016/j.dark.2017.04.002
Phys. Dark Univ. **16**, 94 (2017)

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30. **"Phantom Dark Ghost in Einstein–Cartan Gravity"**
Y. C. Chang, M. Bouhmadi-López and P. Chen.

arXiv:1507.07571 [gr-qc]
DOI:10.1140/epjc/s10052-017-4826-5
Eur. Phys. J. C **77**, no. 5, 278 (2017)

---

31. **"Constraints on tachyon inflationary models with an AdS/CFT correspondence"**
Z. Bouabdallaoui, A. Errahmani, M. Bouhmadi-López, T. Ouali.
arXiv:1610.01963 [hep-th]
DOI:10.1103/PhysRevD.94.123508
Phys. Rev. D **94**, no. 12, 123508 (2016)

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32. **"Towards the Quantization of Eddington-inspired-Born-Infeld Theory"**
M. Bouhmadi-López and C. Y. Chen.
arXiv:1609.00700 [gr-qc]
DOI:10.1088/1475-7516/2016/11/023
JCAP **1611**, no. 11, 023 (2016)

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33. **"Interacting 3-form dark energy models: distinguishing interactions and avoiding the Little Sibling of the Big Rip"**
J. Morais, M. Bouhmadi-López, K. Sravan Kumar, J. Marto and Y. Tavakoli.
arXiv:1608.01679 [gr-qc]
DOI:10.1016/j.dark.2016.11.002
Phys. Dark Univ. **15**, 7 (2017)

---

34. **"K-essence model from the mechanical approach point of view: coupled scalar field and the late cosmic acceleration"**
M. Bouhmadi-López, K. S. Kumar, J. Marto, J. Morais and A. Zhuk.
arXiv:1605.03212 [gr-qc]
DOI:10.1088/1475-7516/2016/07/050
JCAP **1607**, no. 07, 050 (2016)

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35. **"Classical and quantum cosmology of the little rip abrupt event"**
I. Albarran, M. Bouhmadi-López, C. Kiefer, J. Marto and P. Vargas Moniz.
arXiv:1604.08365 [gr-qc]
DOI:10.1103/PhysRevD.94.063536
Phys. Rev. D **94**, no. 6, 063536 (2016)

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36. **"The late Universe with non-linear interaction in the dark sector: the coincidence problem"**
M. Bouhmadi-López, J. Morais and A. Zhuk.
arXiv:1603.06983 [gr-qc]
DOI:10.1016/j.dark.2016.08.001
Phys. Dark Univ. **14**, 11 (2016)

---

37. **"Coupled scalar fields in the late Universe: The mechanical approach and the late cosmic acceleration"**
A. Burgazli, A. Zhuk, J. Morais, M. Bouhmadi-López and K. Sravan Kumar.
arXiv:1512.03819 [gr-qc]
DOI:10.1088/1475-7516/2016/09/045
JCAP **1609**, no. 09, 045 (2016)

38. **"The quantum realm of the "Little Sibling" of the Big Rip singularity"**
I. Albarran, M. Bouhmadi-López, F. Cabral and P. Martín-Moruno.
arXiv:1509.07398 [gr-qc]
DOI: 10.1088/1475-7516/2015/11/044
JCAP **1511**, no. 11, 044 (2015)

---

39. **"Scalar perturbations in the late Universe: viability of the Chaplygin gas models"**
M. Bouhmadi-López, M. Brilenkov, R. Brilenkov, J. Morais and A. Zhuk.
arXiv:1509.06963 [gr-qc]
DOI: 10.1088/1475-7516/2015/12/037
JCAP **1512**, no. 12, 037 (2015)

---

40. **"Can $f(R)$ gravity contribute to (dark) radiation?"**
J. Morais, M. Bouhmadi-López and S. Capozziello.
arXiv:1507.02623 [gr-qc]
DOI: 10.1088/1475-7516/2015/09/041, 10.1088/1475-7516/2015/9/041
JCAP **1509**, no. 09, 041 (2015)

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41. **"Modified Eddington-inspired-Born-Infeld Gravity with a Trace Term"**
C. Y. Chen, M. Bouhmadi-López and P. Chen.
arXiv:1507.00028 [gr-qc]
10.1140/epjc/s10052-016-3879-1
Eur. Phys. J. C **76**, no. 1, 40 (2016)

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42. **"Quantisation of the holographic Ricci dark energy model"**
I. Albarran and M. Bouhmadi-López.
arXiv:1505.01353 [gr-qc]
DOI: 10.1088/1475-7516/2015/08/051
JCAP **1508**, no. 08, 051 (2015)

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43. **"Are dark energy models with variable EoS parameter w compatible with the late inhomogeneous Universe?"**
Ö. Akarsu, M. Bouhmadi-López, M. Brilenkov, R. Brilenkov, M. Eingorn and A. Zhuk.
arXiv:1502.04693 [gr-qc]
DOI: 10.1088/1475-7516/2015/07/038
JCAP **1507**, no. 07, 038 (2015)

---

44. **"Wormholes minimally violating the null energy condition"**
M. Bouhmadi-López, F. S. N. Lobo and P. Martín-Moruno.
arXiv:1407.7758 [gr-qc]
DOI: 10.1088/1475-7516/2014/11/007
JCAP **1411**, no. 11, 007 (2014)

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45. **"Cosmological singularities in Born-Infeld determinantal gravity"**
M. Bouhmadi-López, C. Y. Chen and P. Chen.
arXiv:1407.5114 [gr-qc]
DOI: 10.1103/PhysRevD.90.123518
Phys. Rev. D **90**, no. 12, 123518 (2014)

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46. **"The little sibling of the big rip singularity"**
M. Bouhmadi-López, A. Errahmani, P. Martín-Moruno, T. Ouali and Y. Tavakoli.
arXiv:1407.2446 [gr-qc]
DOI: 10.1142/S0218271815500789
Int. J. Mod. Phys. D **24**, no. 10, 1550078 (2015)

---

47. **"Eddington—Born—Infeld cosmology: a cosmographic approach, a tale of doomsdays and the fate of bound structures"**
M. Bouhmadi-López, C. Y. Chen and P. Chen.
arXiv:1406.6157 [gr-qc]
DOI: 10.1140/epjc/s10052-015-3257-4
Eur. Phys. J. C **75**, no. 2, 90 (2015)

---

48. **"Ghosts in the self-accelerating DGP branch with Gauss–Bonnet effect"**
Y. W. Liu, K. Izumi, M. Bouhmadi-López and P. Chen.
arXiv:1405.0850 [hep-th]
DOI: 10.1140/epjc/s10052-015-3463-0
Eur. Phys. J. C **75**, no. 6, 248 (2015)

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49. **"Resolution of type IV singularities in quantum cosmology"**
M. Bouhmadi-López, C. Kiefer and M. Krämer.
arXiv:1312.5976 [gr-qc]
DOI: 10.1103/PhysRevD.89.064016
Phys. Rev. D **89**, 064016 (2014)

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50. **"Tensor Perturbations from Brane-World Inflation with Curvature Effects"**
M. Bouhmadi-López, Y. -W. Liu, K. Izumi and P. Chen.
arXiv:1308.5765 [hep-th]
DOI: 10.1103/PhysRevD.89.063501
Phys. Rev. D **89**, 063501 (2014)

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51. **"Is Eddington-Born-Infeld theory really free of cosmological singularities?"**
M. Bouhmadi-López, C. -Y. Chen and P. Chen.
arXiv:1302.5013 [gr-qc]
DOI: 10.1140/epjc/s10052-014-2802-x
Eur. Phys. J. C **74**, 2802 (2014)

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52. **"The energy spectrum of gravitational waves in a loop quantum cosmological model"**
J. Morais, M. Bouhmadi-López and A. B. Henriques.
arXiv:1310.0023 [gr-qc]
DOI: 10.1103/PhysRevD.89.023513
Phys. Rev. D **89**, 023513 (2014)

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53. **"Tradeoff between Smoother and Sooner Little Rip"**
M. Bouhmadi-López, P. Chen and Y. -W. Liu.
arXiv:1302.6249 [gr-qc]
DOI: 10.1140/epjc/s10052-013-2546-z
Eur. Phys. J. C , 73: 2546 (2013)

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54. **"Why is the running vacuum energy more benign than the holographic Ricci dark energy?"**
M. Bouhmadi-López and Y. Tavakoli.
DOI: 10.1103/PhysRevD.87.023515
Phys. Rev. D **87**, 023515 (2013).

---

55. **"Slow-roll inflation preceded by a topological defect phase à la Chaplygin gas"**
M. Bouhmadi-López, P. Chen, Y. -C. Huang and Y. -H. Lin.
arXiv:1212.2641 [astro-ph.CO]
DOI: 10.1103/PhysRevD.87.103513
Phys. Rev. D **87**, 103513 (2013)

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56. **"Smoking guns of a bounce in modified theories of gravity through the spectrum of gravitational waves"**
M. Bouhmadi-López, J. Morais and A. B. Henriques.
arXiv:1210.1761 [astro-ph.CO]
DOI: 10.1103/PhysRevD.87.103528
Phys. Rev. D **87**, no. 10, 103528 (2013)

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57. **"Scalar perturbations from brane-world inflation with curvature effects"**
M. Bouhmadi-López, P. Chen, Y. -W. Liu, P. Chen and Y. -W. Liu.
arXiv:1206.5942 [gr-qc]
DOI: 10.1103/PhysRevD.86.083531
Phys. Rev. D **86**, 083531 (2012)

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58. **"The holographic induced gravity model with a Ricci dark energy: smoothing the little rip and big rip through Gauss-Bonnet effects?"**
M. -H. Belkacemi, M. Bouhmadi-López, A. Errahmani and T. Ouali.
arXiv:1112.5836 [gr-qc]
DOI: 10.1103/PhysRevD.85.083503
Phys. Rev. D **85**, 083503 (2012)

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59. **"The cosmology of an holographic induced gravity model with curvature effects"**
M. Bouhmadi-López, A. Errahmani and T. Ouali.
arXiv:1104.1181 [astro-ph.CO]
DOI: 10.1103/PhysRevD.84.083508
Phys. Rev. D **84**, 083508 (2011)

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60. **"Cosmological Imprints of a Generalized Chaplygin Gas Model for the Early Universe"**
M. Bouhmadi-López, P. Chen and Y. -W. Liu.
arXiv:1104.0676 [astro-ph.CO]
DOI: 10.1103/PhysRevD.84.023505
Phys. Rev. D **84**, 023505 (2011)

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61. **"Cosmography of f(R) - brane cosmology"**
M. Bouhmadi-López, S. Capozziello and V. F. Cardone.
arXiv:1010.1547 [gr-qc]
DOI: 10.1103/PhysRevD.82.103526
Phys. Rev. D **82**, 103526 (2010)

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62. **"k-essence in the DGP brane-world cosmology"**
M. Bouhmadi-López and L. P. Chimento.
arXiv:1007.4141 [astro-ph.CO]
DOI: 10.1103/PhysRevD.82.103506
Phys. Rev. D **82**, 103506 (2010)

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63. **"Black holes die hard: can one spin-up a black hole past extremality?"**
M. Bouhmadi-López, V. Cardoso, A. Nerozzi and J. V. Rocha.
arXiv:1003.4295 [gr-qc]
DOI: 10.1103/PhysRevD.81.084051
Phys. Rev. D **81**, 084051 (2010)

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64. **"Appeasing the Phantom Menace?"**
M. Bouhmadi-López, Y. Tavakoli and P. V. Moniz.
arXiv:0911.1428 [gr-qc]
DOI: 10.1088/1475-7516/2010/04/016
JCAP **1004**, 016 (2010)

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65. **"Stochastic gravitational waves from a new type of modified Chaplygin gas"**
M. Bouhmadi-López, P. Frazão d A. B. Henriques.
arXiv:0910.5134 [astro-ph.CO]
DOI: 10.1103/PhysRevD.81.063504
Phys. Rev. D **81**, 063504 (2010)

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66. **"On the quantum fate of singularities in a dark-energy dominated universe"**
M. Bouhmadi-López, C. Kiefer, B. Sandhoefer and P. V. Moniz.
arXiv:0905.2421 [gr-qc]
DOI: 10.1103/PhysRevD.79.124035
Phys. Rev. D **79**, 124035 (2009)

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67. **"Self-accelerating the normal DGP branch"**
M. Bouhmadi-López.
arXiv:0905.1962 [hep-th]
DOI: 10.1088/1475-7516/2009/11/011
JCAP **0911**, 011 (2009)

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68. **"Crossing the cosmological constant line in a dilatonic brane-world model with and without curvature corrections"**
M. Bouhmadi-López and A. Ferrera.
arXiv:0807.4678 [hep-th]
DOI: 10.1088/1475-7516/2008/10/011
JCAP **0810**, 011 (2008)

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69. **"Phantom-like behaviour in a brane-world model with curvature effects"**
M. Bouhmadi-López and P. V. Moniz.
arXiv:0804.4484 [gr-qc]
DOI: 10.1103/PhysRevD.78.084019
Phys. Rev. D **78**, 084019 (2008)

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70. **"On the generalised Chaplygin gas: Worse than a big rip or quieter than a sudden singularity?"**
M. Bouhmadi-López, P. F. González-Díaz and P. Martín-Moruno.
arXiv:0707.2390 [gr-qc]
DOI: 10.1142/S0218271808013856
Int. J. Mod. Phys. D **17**, 2269 (2008)

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71. **"Chaplygin DGP cosmologies"**
M. Bouhmadi-López and R. Lazkoz.
arXiv:0706.3896 [astro-ph]
DOI: 10.1016/j.physletb.2007.07.063
Phys. Lett. B **654**, 51 (2007)

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72. **"Worse than a big rip?"**
M. Bouhmadi-López, P. F. González-Díaz and P. Martín-Moruno.
gr-qc/0612135
DOI: 10.1016/j.physletb.2007.10.079
Phys. Lett. B **659**, 1 (2008)

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73. **"Quantisation of Parameters and the String Landscape Problem"**
M. Bouhmadi-López and P. Vargas Moniz.
hep-th/0612149
DOI: 10.1088/1475-7516/2007/05/005
JCAP **0705**, 005 (2007)

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74. **"Phantom-like behaviour in dilatonic brane-world scenario with induced gravity"**
M. Bouhmadi-López.
astro-ph/0512124
DOI: 10.1016/j.nuclphysb.2007.12.025
Nucl. Phys. B **797**, 78 (2008)

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75. **"Induced gravity with a non-minimally coupled scalar field on the brane"**
M. Bouhmadi-López and D. Wands.
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DOI: 10.1103/PhysRevD.71.024010
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76. **"Gravitational waves from brane-world inflation with induced gravity"**
M. Bouhmadi-López, R. Maartens and D. Wands.
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DOI: 10.1103/PhysRevD.70.123519
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77. **"FRW quantum cosmology with a generalized Chaplygin gas"**
M. Bouhmadi-López and P. Vargas Moniz.
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78. **"Escaping the big rip?"**
M. Bouhmadi-López and J. A. Jiménez Madrid.
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DOI: 10.1088/1475-7516/2005/05/005
JCAP **0505**, 005 (2005)

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79. **"On New gravitational instantons describing creation of brane worlds"**
M. Bouhmadi-López, P. F. González-Díaz and A. Zhuk.
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DOI: 10.1088/0264-9381/19/19/306
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80. **"Topological defect brane world models"**
M. Bouhmadi-López, P. F. González-Díaz and A. Zhuk.
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Grav. Cosmol. **8**, 285 (2002)

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81. **"Quantum behavior of FRW radiation filled universes"**
M. Bouhmadi-López, L. J. Garay and P. F. González-Díaz.
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DOI: 10.1103/PhysRevD.66.083504
Phys. Rev. D **66**, 083504 (2002)

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82. **"Brane worlds in quantum cosmology"**
M. Bouhmadi and P. F. González-Díaz.
DOI: 10.1103/PhysRevD.65.063510
Phys. Rev. D **65**, 063510 (2002).

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83. **"Comments on conformal stability of brane world models"**
M. Bouhmadi-López and A. Zhuk.
hep-th/0107227
DOI: 10.1103/PhysRevD.65.044009
Phys. Rev. D **65**, 044009 (2002)

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84. **"Creation of open universes and CFT/AdS duality"**
M. Bouhmadi, L. J. Garay and P. F. González-Díaz.
DOI: 10.1142/S021773230100367X
Mod. Phys. Lett. A **16**, 403 (2001).

Proceedings (with referee)

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1. **"The Third Quantization: To Tunnel or Not to Tunnel?"**
M. Bouhmadi-López, M. Krämer, J. Morais and S. Robles-Pérez.
DOI:10.3390/galaxies6010019
Galaxies **6**, no. 1, 19 (2018).

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2. **"The Avoidance of the Little Sibling of the Big Rip Abrupt Event by a Quantum Approach"**
I. Albarran, M. Bouhmadi-López, F. Cabral and P. Martín-Moruno.
DOI:10.3390/galaxies6010021
Galaxies **6**, no. 1, 21 (2018).

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3. **"The Mimetic Born-Infeld Gravity: The Primordial Cosmos and Spherically Symmetric Solutions"**
C. Y. Chen, M. Bouhmadi-López and P. Chen.
DOI:10.3390/galaxies5040087
Galaxies **5**, no. 4, 87 (2017).

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4. **"Quantum Cosmology of the Big Rip: Within GR and in a Modified Theory of Gravity"**
M. Bouhmadi-López, I. Albarran and C. Y. Chen.
DOI:10.3390/universe3020036
Universe **3**, no. 2, 36 (2017).

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5. **"Cosmological Perturbations in Phantom Dark Energy Models"**
I. Albarran, M. Bouhmadi-López and J. Morais.
DOI:10.3390/universe3010022
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6. **"3-Form Cosmology: Phantom Behaviour, Singularities and Interactions"**
J. Morais, M. Bouhmadi-López, and J. Marto.
DOI:10.3390/universe3010021
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7. **"Cosmological singularities in Eddington-inspired-Born-Infeld theory and its possible extension"**
C. Y. Chen, M. Bouhmadi-López and P. Chen.
arXiv:1606.06573 [gr-qc]
Conference and HEP entry
Chapter in proceeding book

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8. **"A novel approach to thin-shell wormholes and applications"**
F. S. N. Lobo, M. Bouhmadi-López, P. Martín-Moruno, N. Montelongo-García and M. Visser.
arXiv:1512.08474 [gr-qc]
HEP entry

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9. **"Dark Energy as a Holographic Ricci Component of the Universe"**
M. -H. Belkacemi, M. Bouhmadi-López, A. Errahmani and T. Ouali.

DOI:10.1016/j.nuclphysbps.2013.10.084
Nucl. Phys. Proc. Suppl. **246-247**, 187 (2014).

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10. **"Over spinning a black hole?"**
M. Bouhmadi-López, V. Cardoso, A. Nerozzi and J. V. Rocha.
DOI:10.1088/1742-6596/314/1/012064
J. Phys. Conf. Ser. **314**, 012064 (2011).

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11. **"Brane Cosmology with an $f(\mathbf{R})$ contribution"**
M. Bouhmadi-López.
DOI: 10.1007/978-3-642-19760-410
Springer Proc. Phys. **137**, 117 (2011).

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12. **"The Spectrum of Gravitational Waves in an $f(\mathbf{R})$ Model with a Bounce"**
M. Bouhmadi-López, J. Morais and A. B. Henriques.
DOI:10.1007/978-3-642-40157-2_16
Springer Proc. Math. Stat. **60**, 157 (2014).

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13. **"The holographic Ricci dark energy and its possible doomsdays"**
M. H. Belkacemi, M. Bouhmadi-López, A. Errahmani and T. Ouali.
arXiv:1302.0030 [gr-qc]
DOI: 10.1007/978-3-642-40157-2_12
Springer Proc. Math. Stat. **60**, 139 (2014)

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14. **"Constraints on single entity driven inflationary and radition eras"**
M. Bouhmadi-López, P. Chen and Y. -W. Liu.
arXiv:1203.2097 [astro-ph.CO]
DOI: 10.1063/1.4734426
AIP Conf. Proc. **1458**, 327 (2011)

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15. **"Defrosting the Big Freeze quantum mechanically?"**
M. Bouhmadi-López, C. Kiefer, B. Sandhoefer and P. V. Moniz.
arXiv:1002.4783 [gr-qc]
DOI: 10.1142/97898143745520241

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16. **"Gravitons production in a new type of GCG"**
M. Bouhmadi-López, P. Frazão and A. B. Henriques.
arXiv:1002.4785 [astro-ph.CO]
DOI: 10.1142/97898143745520242

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17. **"The Healthy DGP Branch in A State of Self-Acceleration"**
M. Bouhmadi-López.
arXiv:1002.4787 [hep-th]
DOI: 10.1142/97898143745520380

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18. **"f(R) brane cosmology"**
M. Bouhmadi-López.
arXiv:1001.3028 [astro-ph.CO]
DOI: 10.1088/1742-6596/229/1/012024
J. Phys. Conf. Ser. **229**, 012024 (2010)

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19. **"Late-time acceleration in a brane with curvature effects"**
M. Bouhmadi-López and P. V. Moniz.
arXiv:0905.4269 [astro-ph.CO]
DOI: 10.1063/1.3141257
AIP Conf. Proc. **1122**, 201 (2009)

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20. **"On the thermal boundary condition of the wave function of the Universe"**
M. Bouhmadi-López and P. Vargas Moniz.
gr-qc/0701068
DOI: 10.1142/97898128343000281

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21. **"Tensorial perturbations in a brane with induced gravity"**
M. Bouhmadi-López.
DOI: 10.1088/1742-6596/33/1/019
J. Phys. Conf. Ser. **33**, 203 (2006).

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22. **"Brane world states from a generalized Chaplygin gas"**
M. Bouhmadi-López and P. Vargas Moniz.
DOI: 10.1063/1.1835191
AIP Conf. Proc. **736**, 188 (2005).

Chapter in a book

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1. **"Exploring the dark side of the Universe in a dilatonic brane-world scenario"**
M. Bouhmadi-López. Published in *The Problem of Modern Cosmology*, pages 93-105, Tomsk State Pedagogical University Press, ISBN 978-5-89428-313-5
arXiv Entry: arXiv:0811.4069 [hep-th]

STAYS IN INTERNATIONALLY RECOGNIZED CENTRES

KEY: D=Ph.D student, P=postdoctoral. G= guest, S=staff, O=others (specify)

CENTRE: Universidade da Beira Interior
PLACE: Covilha COUNTRY: Taiwan YEAR: 2020
LENGTH: 5 weeks
TOPIC: Modified theory of gravity and dark energy KEY: G
Host: Prof. Joao Marto

CENTRE: Yangzhou University
PLACE: Yangzhou (China) COUNTRY: Taiwan YEAR: 2019
LENGTH: 2 weeks
TOPIC: Black hole physics KEY: G
Host: Prof. Yen Chin Ong

CENTRE: National University of Taiwan
PLACE: Taipei COUNTRY: Taiwan YEAR: 2019
LENGTH: 4 weeks
TOPIC: Modified theory of gravity: cosmology and black holes KEY: G
Host: Prof. Pisin Chen

CENTRE: National University of Taiwan
PLACE: Taipei COUNTRY: Taiwan YEAR: 2018
LENGTH: 4 weeks
TOPIC: Modified theory of gravity: cosmology and black holes KEY: G
Host: Prof. Pisin Chen

CENTRE: National University of Taiwan
PLACE: Taipei COUNTRY: Taiwan YEAR: 2017
LENGTH: 4 weeks
TOPIC: Modified theory of gravity: quantum cosmology KEY: G
Host: Prof. Pisin Chen

CENTRE: National University of Taiwan
PLACE: Taipei COUNTRY: Taiwan YEAR: 2015
LENGTH: 4 weeks
TOPIC: Modified theory of gravity and early universe KEY: G
Host: Prof. Pisin Chen

CENTRE: National University of Taiwan
PLACE: Taipei COUNTRY: Taiwan YEAR: 2014
LENGTH: 5 weeks
TOPIC: Modified theory of gravity and early universe KEY: G
Host: Prof. Pisin Chen

CENTRE: University of Cape Town
PLACE: Cape Town COUNTRY: South Africa YEAR: 2013
LENGTH: 1 week
TOPIC: Modified theory of gravity universe KEY: G
Host: Prof. Peter Dunsby

CENTRE: National University of Taiwan

PLACE: Taipei COUNTRY: Taiwan YEAR: 2013
LENGTH: 4 weeks
TOPIC: Modified theory of gravity and early universe KEY: G
Host: Prof. Pisin Chen

CENTRE: National University of Taiwan
PLACE: Taipei COUNTRY: Taiwan YEAR: 2012
LENGTH: 6 weeks
TOPIC: Modified theory of gravity and early universe KEY: G
Host: Prof. Pisin Chen

CENTRE: University of Cologne
PLACE: Cologne COUNTRY: Germany YEAR: 2012
LENGTH: 3 week
TOPIC: Modified theories of gravity KEY: G
Host: Prof. Claus Kiefer

CENTRE: University of Cologne
PLACE: Cologne COUNTRY: Germany YEAR: 2011
LENGTH: 2 week
TOPIC: Quantum Cosmology and Dark energy related singularities KEY: G
Host: Prof. Claus Kiefer

CENTRE: National University of Taiwan
PLACE: Taipei COUNTRY: Taiwan YEAR: 2011
LENGTH: 6 weeks
TOPIC: Gravitational waves & inflation KEY: G
Host: Prof. Pisin Chen

CENTRE: National University of Taiwan
PLACE: Taipei COUNTRY: Taiwan YEAR: 2010
LENGTH: 2 months
TOPIC: Gravitational waves and inflation KEY: G
Host: Prof. Pisin Chen

CENTRE: University of the Basque Country
PLACE: Bilbao COUNTRY: Spain YEAR: 2010
LENGTH: 1 week
TOPIC: Modified theories of gravity KEY: G
Host: Prof. Ruth Lazkoz

CENTRE: University of São Paulo
PLACE: São Paulo COUNTRY: Brazil YEAR: 2009
LENGTH: 1 month
TOPIC: Dark matter and dark energy KEY: G
Host: Prof. Elcio Abdalla

CENTRE: University of Cologne
PLACE: Cologne COUNTRY: Germany YEAR: 2008
LENGTH: 1 month
TOPIC: Quantum Cosmology and Dark energy related singularities KEY: G
Host: Prof. Claus Kiefer

CENTRE: University of the Basque Country
PLACE: Bilbao COUNTRY: Spain YEAR: 2008

LENGTH: 1 week
TOPIC: Dark energy models KEY: G
Host: Prof. Ruth Lazkoz

CENTRE: University of the Basque Country
PLACE: Bilbao COUNTRY: Spain YEAR: 2007
LENGTH: 1 month
TOPIC: Dark energy models KEY: G
Host: Prof. Ruth Lazkoz

CENTRE: CSIC-IMAFF
PLACE: Madrid COUNTRY: Spain YEAR: 2007
LENGTH: 2 weeks
TOPIC: Dark energy models KEY: G
Host: Prof. Pedro F. González-D íaz

CENTRE: University of Beira Interior
PLACE: Covilhã COUNTRY: Portugal YEAR: 2007
LENGTH: 1 week
TOPIC: Quantum Cosmology and Brane-worlds models KEY: G
Host: Prof. Paulo Vargas Moniz

CENTRE: University of Beira Interior
PLACE: Covilhã COUNTRY: Portugal YEAR: 2006
LENGTH: 1 week
TOPIC: Quantum Cosmology and Brane-worlds models KEY: G
Host: Prof. Paulo Vargas Moniz

CENTRE: University of Portsmouth
PLACE: Portsmouth COUNTRY: UK YEAR: 2003-2006
LENGTH: 3 years
TOPIC: Brane-world models, cosmological perturbations KEY: P
Supervisor: Prof. David Wands

CENTRE: University of Beira Interior
PLACE: Covilhã COUNTRY: Portugal YEAR: 2003
LENGTH: 2 months
TOPIC: Chaplygin gas model KEY: P
Supervisor: Prof. Paulo Vargas Moniz

CENTRE: The Imperial College
PLACE: London COUNTRY: UK YEAR: 2001
LENGTH: 10 weeks
TOPIC: Quantum Cosmology and closed timelike curves KEY: D
Host and supervisor: Prof. Jonathan Halliwell

CENTRE: The Institute of Cosmology, University of Tufts
PLACE: London COUNTRY: USA YEAR: 2000
LENGTH: 10 weeks
TOPIC: Quantum Cosmology and instantons KEY: D
Host and supervisor: Prof. Alexander Vilenkin

CENTRE: The Department of Applied Mathematics and Theoretical Physics, University of Cambridge
PLACE: Cambridge COUNTRY: UK YEAR: 1999
LENGTH: 7 weeks

TOPIC: Quantum Cosmology and instantons KEY: D
Host and supervisor: Prof. Stephen W. Hawking

PRESENTATIONS IN CONGRESSES

AUTHORS: **M. Bouhmadi-López**
TITLE: The recent speed up of the Universe TYPE OF PRESENTATION: Invited talk
CONGRESS: Beyond the Standard Model 2021
MEETING PLACE: Cairo, Egypt (online conference)
YEAR: 2021

AUTHORS: **M. Bouhmadi-López**
TITLE: Eddington-inspired-Born-Infeld tensorial instabilities neutralized in a quantum approach
TYPE OF PRESENTATION: Oral presentation
CONGRESS: VI Cosmology and the Quantum Vacuum
MEETING PLACE: Averiro, Portugal (online)
YEAR: 2021

AUTHORS: **M. Bouhmadi-López**
TITLE: 3-forms driving the late-time acceleration of the Universe
TYPE OF PRESENTATION: Invited talk
CONGRESS: VI Cosmology and the Quantum Vacuum
MEETING PLACE: Barcelona, Spain
YEAR: 2020

AUTHORS: **M. Bouhmadi-López**
TITLE: From Valletta to the early Universe
TYPE OF PRESENTATION: Invited public talk presentation
CONGRESS: Cosmology and Astrophysics Network for Theoretical Advances and Training Actions
MEETING PLACE: Madrid, Malta
YEAR: 2019

AUTHORS: **M. Bouhmadi-López**
TITLE: From Serrano street to the current Universe
TYPE OF PRESENTATION: Invited presentation
CONGRESS: Travelling through Pedro's universes: from Spectroscopy to Cosmology
MEETING PLACE: Madrid, Spain
YEAR: 2018

AUTHORS: **M. Bouhmadi-López**
TITLE: The recent acceleration of the Universe: a phenomenological approach.
TYPE OF PRESENTATION: Invited presentation

CONGRESS: FUture Gravitational Alternatives Meeting (FUGA)
MEETING PLACE: Valencia, Spain
YEAR: 2018

AUTHORS: **M. Bouhmadi-López**
TITLE: On the late-time acceleration of the Universe: within GR and beyond
TYPE OF PRESENTATION: Oral presentation
CONGRESS: V Workshop on COSMOLOGY AND THE QUANTUM VACUUM
MEETING PLACE: Benasque, Spain
YEAR: 2018

AUTHORS: **M. Bouhmadi-López**
TITLE: Classical and quantum approach to the little sibling of the big rip
TYPE OF PRESENTATION: Oral presentation
CONGRESS: 13th Iberian Cosmology Meeting
MEETING PLACE: Lisbon, Portugal
YEAR: 2018

AUTHORS: **M. Bouhmadi-López**
TITLE: Digging into the dark side of the universe: from GR to extended theories of gravity
TYPE OF PRESENTATION: Invited presentation
CONGRESS: 7rd LeCosPA Symposium
MEETING PLACE: Taipei, Taiwan
YEAR: 2017

AUTHORS: **M. Bouhmadi-López**
TITLE: On the late-time acceleration of the Universe
TYPE OF PRESENTATION: Invited presentation
CONGRESS: 2nd Working Group meeting of COST Action CA15117 “Cosmology and Astrophysics Network for Theoretical Advances and Training Actions (CANTATA)”
MEETING PLACE: Frankfurt, Germany
YEAR: 2017

AUTHORS: **M. Bouhmadi-López**
TITLE: Cosmological perturbations of the late-time Universe
TYPE OF PRESENTATION: Invited presentation
CONGRESS: IV Cosmology and the Quantum Vacuum
MEETING PLACE: Segovia, Spain
YEAR: 2017

AUTHORS: **M. Bouhmadi-López**
TITLE: Smoking guns of a bounce in modified theories of gravity
TYPE OF PRESENTATION: Oral presentation
CONGRESS: 7th Iberian Gravitational Waves Meeting
MEETING PLACE: Bilbao, Spain
YEAR: 2017

AUTHORS: **M. Bouhmadi-López**
TITLE: Hunting the dark Universe: Are dark energy doomsdays avoidable? And what are observations telling us?

TYPE OF PRESENTATION: Oral presentation
CONGRESS: 12th Iberian Cosmology Meeting
MEETING PLACE: Valencia, Spai
YEAR: 2017

AUTHORS: **M. Bouhmadi-López**
TITLE: Hunting the dark Universe: Are dark energy doomsdays avoidable? And what are observations telling us?
TYPE OF PRESENTATION: Invited presentation
CONGRESS: Beyond the Concondance Model II
MEETING PLACE: Cape Town, South Africa
YEAR: 2016

AUTHORS: **M. Bouhmadi-López**
TITLE: État actuel des singularités d'énergie noire.
TYPE OF PRESENTATION: Invited presentation
CONGRESS: First International Conference on Theoretical Physics and High Energy Physics @Casa
MEETING PLACE: Casablanca, Morrocco
YEAR: 2016

AUTHORS: **M. Bouhmadi-López**
TITLE: Current status of dark energy singularities: A Quantum analysis.
TYPE OF PRESENTATION: Oral presentation and invited convener
CONGRESS: VARCOSMOFUN'16
MEETING PLACE: Szczecin, Poland
YEAR: 2016

AUTHORS: **M. Bouhmadi-López**
TITLE: Towards the quantisations of Eddington-Born-Infeld theory.
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Iberian Cosmology Meeting
MEETING PLACE: Vila do Conde, Portugal
YEAR: 2016

AUTHORS: **M. Bouhmadi-López**
TITLE: Possible doomsday behaviours for the Universe: classical versus quantum.
TYPE OF PRESENTATION: Invited talk
CONGRESS: Iberian Cosmology Meeting
MEETING PLACE: Aranjuez, Spain
YEAR: 2015

AUTHORS: **M. Bouhmadi-López**
TITLE: A tale of cosmic doomsdays: from modified theories of gravity to quantum cosmology
TYPE OF PRESENTATION: Invited talk
CONGRESS: 569. Wilhelm and Else Heraeus Seminar Quantum Cosmology. Congress Physikzentrum
MEETING PLACE: Bad Honnef, Germany
YEAR: 2014

AUTHORS: **M. Bouhmadi-López**

TITLE: Resolution of type IV singularities in quantum cosmology
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Ninth Iberian Cosmology Meeting
MEETING PLACE: Aveiro, Portugal
YEAR: 2014ââââ

AUTHORS: **M. Bouhmadi-López**
TITLE: Is Eddington-Born-Infeld theory really free of cosmological singularities?
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Eight Iberian Cosmology Meeting
MEETING PLACE: Granada, Spain
YEAR: 2013

AUTHORS: M.-H. Belkacemi, **M. Bouhmadi-López**, A. Errahmani & T. Ouali
TITLE: Dark energy as an holographic Ricci component of the universe
TYPE OF PRESENTATION: Invited talk
CONGRESS: CosPA Asia Pacific conference 2012
PUBLICATION: published in Nuclear Physics B Proc.
MEETING PLACE: Taipei, Taiwan
YEAR: 2012

AUTHORS: M.-H. Belkacemi, **M. Bouhmadi-López**, A. Errahmani & T. Ouali
TITLE: The hologrpahic Ricci dark energy and its possible doomsdays
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Spanish and Portuguese Relativity meeting 2012
MEETING PLACE: Guimaraes, Portugal
YEAR: 2012

AUTHORS: **M. Bouhmadi-López**
TITLE: The holographic induced gravity model with a Ricci dark energy: smoothing the little rip and big rip through Gauss Bonnet effects
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Seventh Iberian Cosmology Meeting
MEETING PLACE: Lisbon, Portugal
YEAR: 2012

AUTHORS: **M. Bouhmadi-López**, P. Chen & Y.-W. Liu
TITLE: Cosmological Imprints of a Generalized Chaplygin Gas Model for the Early Universe
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Spanish Relativity meeting 2011
PUBLICATION: AIP, Conference Proceedings
MEETING PLACE: Madrid, Spain
YEAR: 2011

AUTHORS: **M. Bouhmadi-López**, V. Cardoso, A. Nerozzi & J. V. Rocha
TITLE: Over spinning a black hole?
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Spanish Relativity meeting 2010
PUBLICATION: published in J. Phys. Conf. Ser.

MEETING PLACE: Granada, Spain
YEAR: 2011

AUTHORS: **M. Bouhmadi-López**
TITLE: Towards self-acceleration in extra-dimensional models
TYPE OF PRESENTATION: Invited talk
CONGRESS: Beyond the Concordance model
MEETING PLACE: Stellenbosch, South Africa
YEAR: 2010

AUTHORS: **M. Bouhmadi-López**
TITLE: Brane Cosmology with an f(R) contribution
TYPE OF PRESENTATION: Invited talk
CONGRESS: Cosmology, the Quantum Vacuum and Zeta Functions
PUBLICATION: published in Springer proceedings of physics 137
MEETING PLACE: Barcelona, Spain
YEAR: 2010

AUTHORS: **M. Bouhmadi-López**
TITLE: The quantum fate of the big freeze singularity
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Cosmology, the Quantum Vacuum and Zeta Functions
MEETING PLACE: Covilhã, Portugal
YEAR: 2010

AUTHORS: **M. Bouhmadi-López**
TITLE: Some advantages of extra-dimensions to explain the late-time speed up of the universe
TYPE OF PRESENTATION: Invited talk
CONGRESS: Deuxième Rencontre Nationale de Physique Teórique
MEETING PLACE: Oujda, Morocco
YEAR: 2009

AUTHORS: **M. Bouhmadi-López**
TITLE: f(R) brane cosmology
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Spanish Relativity Meeting 2009
PUBLICATION: J. Phys. Conf. Ser. **229**, 012024 (2010)
MEETING PLACE: Bilbao, Spain
YEAR: 2009

AUTHORS: **M. Bouhmadi-López**, P. Frazão & A. B. Henriques
TITLE: Gravitons production in a new type of Generalized Chaplygin gas
TYPE OF PRESENTATION: Oral presentation
CONGRESS: 12th Marcel Grossmann meeting
PUBLICATION: published in the proceedings of 12th Marcel Grossmann Meeting
MEETING PLACE: Paris, France
YEAR: 2009

AUTHORS: **M. Bouhmadi-López**

TITLE: Self-accelerating the normal DGP branch
TYPE OF PRESENTATION: Oral presentation
CONGRESS: 12th Marcel Grossmann meeting
PUBLICATION: published in the proceedings of 12th Marcel Grossmann Meeting
MEETING PLACE: Paris, France
YEAR: 2009

AUTHORS: **M. Bouhmadi-López**, C. Kiefer, B. Sandhoefer & P. Vargas Moniz
TITLE: Defrosting the big freeze quantum mechanically
TYPE OF PRESENTATION: Oral presentation
CONGRESS: 12th Marcel Grossmann meeting
PUBLICATION: published in the proceedings of 12th Marcel Grossmann Meeting
MEETING PLACE: Paris, France
YEAR: 2009

AUTHORS: **M. Bouhmadi-López**
TITLE: Defrosting the big freeze quantum mechanically
TYPE OF PRESENTATION: Invited talk
CONGRESS: International Conference on Quantum Information Theory: Theoretical Foundations and Applications
MEETING PLACE: Rabat, Morocco
YEAR: 2009

AUTHORS: **M. Bouhmadi-López**
TITLE: Future singularities in a dark energy dominated Universe
TYPE OF PRESENTATION: Invited talk
CONGRESS: Fourth Iberian Cosmology Meeting
MEETING PLACE: Madrid, Spain
YEAR: 2009

AUTHORS: **M. Bouhmadi-López**
TITLE: Quantum defrost of the big freeze singularity
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Fourth Iberian Cosmology Meeting
MEETING PLACE: Madrid, Spain
YEAR: 2009

AUTHORS: **M. Bouhmadi-López**
TITLE: f(R) brane cosmology
TYPE OF PRESENTATION: Oral presentation
CONGRESS: PASC Winter School
MEETING PLACE: Sesimbra, Portugal
YEAR: 2008

AUTHORS: **M. Bouhmadi-López** & P. Vargas Moniz
TITLE: Late-time acceleration in a brane with curvature effects
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Spanish Relativity Meeting 2008
PUBLICATION: AIP Conf. Proc. **1122**, 201 (2009)

MEETING PLACE: Salamanca, Spain
YEAR: 2008

AUTHORS: **M. Bouhmadi-López**
TITLE: On late-time acceleration in a brane-world model with curvature effects
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Third Iberian Cosmology Meeting
MEETING PLACE: Lisbon, Portugal
YEAR: 2008

AUTHORS: **M. Bouhmadi-López**
TITLE: On phantom-like behaviour on the brane
TYPE OF PRESENTATION: Invited talk
CONGRESS: Le Rencontre Nationale De Physique Théorique
PUBLICATION: Contribution to the proceeding of the "Le Rencontre Nationale De Physique Théorique"
MEETING PLACE: Fez, Morocco
YEAR: 2007

AUTHORS: **M. Bouhmadi-López**
TITLE: Chaplygin DPG cosmologies
TYPE OF PRESENTATION: Oral presentation
CONGRESS: The annual school of the EU Research and Training network "UniverseNet"
MEETING PLACE: Mytilene, Greece
YEAR: 2007

AUTHORS: **M. Bouhmadi-López** & A. Ferrera
TITLE: Crossing the phantom divide in a dilatonic brane-world model with induced gravity
TYPE OF PRESENTATION: Oral presentation
CONGRESS: The Sixth International Workshop on New Worlds in Astroparticle Physics
PUBLICATION: Proceedings of the Sixth International Workshop on New Worlds in Astroparticle Physics
MEETING PLACE: Faro, Portugal
YEAR: 2007

AUTHORS: **M. Bouhmadi-López**
TITLE: Crossing the Phantom Divide with a Chaplygin Gas
TYPE OF PRESENTATION: Oral presentation
CONGRESS: 394th WE-Heraeus Seminar: Cosmology of Fundamental Interactions
MEETING PLACE: Bad Honnef, Germany
YEAR: 2007

AUTHORS: **M. Bouhmadi-López**
TITLE: On the big freeze singularity and the Chaplygin gas
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Bilbao Encounter On New Standard Cosmology
MEETING PLACE: Bilbao, Spain
YEAR: 2007

AUTHORS: **M. Bouhmadi-López**

TITLE: On the thermal boundary condition of the wave function of the Universe and the string landscape
TYPE OF PRESENTATION: Invited talk
CONGRESS: XII IFT-UAM/CSIC CHRISTMAS WORKSHOP
MEETING PLACE: Madrid, Spain
YEAR: 2006

AUTHORS: **M. Bouhmadi-López**
TITLE: On the thermal boundary condition of the wave function of the Universe and the string landscape
TYPE OF PRESENTATION: Oral presentation
CONGRESS: First Iberian Cosmology meeting
MEETING PLACE: Porto, Portugal
YEAR: 2006

AUTHORS: **M. Bouhmadi-López**
TITLE: On the thermal boundary condition of the wave function of the Universe and the string landscape
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Brane-World Gravity: Progress and Problems
MEETING PLACE: Portsmouth, UK
YEAR: 2006

AUTHORS: **M. Bouhmadi-López** & P. Vargas Moniz
TITLE: On the thermal boundary condition of the wave function of the Universe
TYPE OF PRESENTATION: Oral presentation
CONGRESS: 11th Marcel Grossmann Meeting On General Relativity
PUBLICATION: Contribution to the proceedings of the Marcel Grossmann Meeting on General Relativity (pages 1898-1900)
MEETING PLACE: Berlin, Germany
YEAR: 2006

AUTHORS: **M. Bouhmadi-López**
TITLE: Phantom-like behaviour in dilatonic brane-world scenario with induced gravity
TYPE OF PRESENTATION: Oral presentation
CONGRESS: XLIst Rencontres de Moriond, Cosmology: Contents and Structures of the Universe
PUBLICATION: Contribution to the proceedings of the XLIst Rencontres de Moriond, Cosmology: Contents and Structures of the Universe (pages 145-148)
MEETING PLACE: La Thuile, Italy
YEAR: 2006

AUTHORS: **M. Bouhmadi-López**
TITLE: On Brane-World Induced Gravity
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Aspects of Quantum Gravity
MEETING PLACE: Covilhã, Portugal
YEAR: 2005

AUTHORS: **M. Bouhmadi-López**

TITLE: On Brane-World Induced Gravity
TYPE OF PRESENTATION: Oral presentation
CONGRESS: UK Cosmology Meeting
MEETING PLACE: Durham, UK
YEAR: 2005

AUTHORS: **M. Bouhmadi-López**
TITLE: On Brane-World Induced Gravity
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Fourth Meeting on Constrained Dynamics and Quantum Gravity
PUBLICATION: J. Phys. Conf. Ser. **33**, 203 (2006)
MEETING PLACE: Cerdenia, Italy
YEAR: 2005

AUTHORS: **M. Bouhmadi-López**
TITLE: On Brane-World Induced Gravity
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Pomeranian Workshop in Fundamental Cosmology
MEETING PLACE: Pobierowo, Poland
YEAR: 2005

AUTHORS: **M. Bouhmadi-López**
TITLE: On Brane-World Induced Gravity
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Cosmology Meeting 2005
MEETING PLACE: Granada, Spain
YEAR: 2005

AUTHORS: **M. Bouhmadi-López**
TITLE: Induced Brans-Dicke Brane-World Model
TYPE OF PRESENTATION: Oral presentation
CONGRESS: GR17
MEETING PLACE: Dublin, Ireland
YEAR: 2005

AUTHORS: **M. Bouhmadi-López**
TITLE: On New Gravitational Instantons Describing Creation of Brane-Worlds
TYPE OF PRESENTATION: Oral presentation
CONGRESS: CP Violation, Fermion Masses and Physics in Extra Dimensions
MEETING PLACE: Covilhã, Portugal
YEAR: 2002

AUTHORS: **M. Bouhmadi-López**
TITLE: On New Gravitational Instantons Describing Creation of Brane-Worlds
TYPE OF PRESENTATION: Oral presentation
CONGRESS: CP Violation, Fermion Masses and Physics in Extra Dimensions
MEETING PLACE: Covilhã, Portugal
YEAR: 2002

AUTHORS: **M. Bouhmadi-López**

TITLE: Sobre las propiedades térmicas del espacio-tiempo de de Sitter
TYPE OF PRESENTATION: Oral presentation
CONGRESS: Métodos matemáticos sobre la gravitación
MEETING PLACE: Carchuna (Granada), Spain
YEAR: 1999

Teaching experience

- Quantum Physics (Undergraduate course): Septermber 2014-January 2015
  - Brief Syllabus: photoelectric effect, Compton scattering, photons, Franck-Hertz experiment, the Bohr atom, electron diffraction, de Broglie waves, and the wave-particle duality of matter and light. Introduction to wave mechanics: Schrödinger's equation, wave functions, wave packets, probability amplitudes, stationary states, the Heisenberg uncertainty principle, and zero-point energies. Solutions to Schrödinger's equation in one dimension: transmission and reflection at a barrier, barrier penetration, potential wells, the simple harmonic oscillator. Schrödinger's equation in three dimensions: central potentials and introduction to hydrogenic systems.
  - Third year of Biomedical science (optional course)
- General Physics (Undergraduate course): Septermber 2014-January 2015, Septermber 2015-January 2016
  - Brief Syllabus: Unities; Kinematics; Newtonian mechanics; Kinetic and potential energy; Momentum and its conservation; Rotation; Gravity, projectile motion and satellite orbit; Electrostatics; Electric current and circuits; Magnetism.
  - First year of Biochemistry (Septermber 2014-January 2015 and Septermber 2015-January 2016)
  - First year of Industrial Chemistry (Septermber 2015-January 2016)
- Computational Mathematics (undergraduate course): September 2015-January 2016, February 2015-April 2016, September 2016-January 2017
  - Brief Syllabus: Mathematical methods for real functions in one dimension: limits, continuity, derivations and integration. Series.
  - First year of Computational Engineering
- Mathematical methods (undergraduate course): April 2018- May 2018
  - Brief Syllabus: Probability and statistics
  - Second year of Electronic Engineering and Physics
- "Aulas de la experiencia" (undergraduate course): February 2018- April 2018
  - Brief Syllabus: Outreach lectures in Cosmology
  - Second year of the degree "SOCIEDAD, CIENCIA Y TECNOLOGÍA"
- Inflationary Cosmology (PhD course): November 2015-December 2015

  - Brief Syllabus: Motivation of inflation and shortcomings of the big bang theory; Slow-roll inflation; Cosmological perturbations with a matter content corresponding to a minimally coupled scalar field; Definition of different gauge invariant quantities and conservation of some of this quantities on large scale; Definition of the power spectrum of the matter perturbations and curvature related quantities; Quantization of a massless scalar field in de Sitter neglecting the back reaction on the geometry. Full quantization (up to first order) taking into account the curvature perturbations together with the scalar field perturbations; Power spectrum on large scale, definition of the tilt and the running; Primordial gravitational waves and the consistency relation. Current "state of the art" in what refers to observations.

- Since 2017, I am teaching at EHU/UPV, the full list of the disciplines I am teaching can be found on my Ikerbasque webpage

SUPERVISED STUDENTS AND POSTDOCS

1. Master Students

   - Imanol Albarran, "Cuantización del Modelo holográfico de la energía oscura" (Bilbao, UPV, Spain, September 2014).
   - Che-Yu Chen, "Eddington-born-infeld cosmology : a cosmographic approach, a tale of doomsdays and the fate of bound structure" (Taipei, NTU, Taiwan, June 2014). In collaboration with Pisin Chen.
   - Yu-Chien Huang, "Slow-roll inflation preceded by a topological defect phase à la chaplygin gas" (Taipei, NTU, Taiwan,, June 2013). In collaboration with Pisin Chen.
   - João Morais, "Smoking guns of a bounce in modified theories of gravity through the spectrum of gravitational waves" (Lisbon, IST, Portugal, October 2012). In collaboration with Alfredo B. Henriques.
   - Pedro Frazão, "Stochastic Gravitational Waves from a new type of modified Chaplygin Gas" (Lisbon, IST, Portugal, November 2009). In collaboration with Alfredo B. Henriques.

2. Phd students

   - Past students:
     - João Morais, "A phenomenological exploration within Theoretical Cosmology: from the Early to the Late Universe" (Bilbao, UPV, Spain, October 2018).
     - Yen-Wei Liu, "Randall-sundrum inspired brane-world cosmology with curvature effects: the early and late universe" (Taipei, NTU, Taiwan, June 2014). In collaboration with Pisin Chen.
     - Yaser Tavakoli, "Astrophysical and cosmological doomsdays" (Covilhã, UBI, Portugal, December 2013). In collaboration with Paulo Moniz.
     - Moulay-Hicham Belkacemi, "Univers Holographique en Cosmologie non Standard". In collabation with Taoufik Ouali (Oujda, University of Oujda, Morocco, 2019).
     - Zahra Bouabdallaoui, "Description Holographique de l'Univers Inflationnaire" (In collabation with Taoufik Ouali Oujda, University of Oujda, Morocco, 2019).
     - Che-Yu Chen, "Modified theories of gravity: cosmology and astrophysics" (Taipei, University of Taiwan, Taipei, October2019). In collaboration with Pisin Chen.
     - Farida Bargach, "Systèmes dynamiques en cosmologie primordiale et tardive". In collabation with Taoufik Ouali (Oujda, University of Oujda, Morocco, 2020).
     - Aatifa Bargach, "Inflation holographique des modèles à gravité induite : Aspects théoriques et contraintes observationnelles". In collabation with Taoufik Ouali (Oujda, University of Oujda, Morocco, 2020).
     - Imanol Albarran, "The recent acceleration of the Universe: Exploring the hidden essence of the Cosmos" (Covilhã, UBI, Portugal,2021).
   - Current students:
     - Amine Bouali, "Contraintes observationnelles des modèles d'énergie noire fantôme" (Oujda, University of Oujda, Morocco). Expected date of defence: end of 2021-beginning of 2022

– Teodor Borislavov Vasilev, "On modified theories of gravity" (Madrid, Universidad Complutense de Madrid). Expected date of defence: 2024. In collaboration with Prado Martín-Moruno

3. Postdocs

- Prado Martín-Moruno: 01/12/2013-31/05/2014 (Lisbon, IST, Portugal).
- Nihan Katirci: starting from next fall, the current pandemia has delayed her position with us.

Outreach activities

- Mariam Bouhmadi López has recently opened her youtube channel, a facebook account and a twitter account to carry science outreach, particularly in cosmology and gravitation through a STEM educational project hoping to enhance the visibility of minorities doing science like (i) women (ii) arabic women in particular and (iii) Lgbti+ people. All these pages can be found under the name mariam.cosmology. The videos are in 5 languages: Arabic, French, English, Portuguese and Spanish.
- Outreach public talk "From Valletta to the early Universe" @ Valletta (Malta) on the framework of the COST action Cosmology and Astrophysics Network for Theoretical Advances and Training Actions in March 2019.
- Outreach public talk "Aceleración tardía del Universp" @ Bilbao on the framework of Pint of Science in March 2018.
- Outreach public talk "História da Cosmologia, o Andalus e mais além" on the framework of outreach activities at "Observatório Lago Alqueva" @ Monsaraz (Portugal) in October 2017.
- Outreach public talk "Cosmologia: de onde viemos? e para onde poderíamos ir?" on the framework of outreach activities at "Escola Quinta das Palmeiras" @ Covilhã (Portugal) in March 2017.

OTHER ACHIEVEMENTS

- I am currently involved in outreach activities through my youtube channel mariam.cosmology
- I am referee for the following international journals: Physical Review Letters, Physical Review D, Journal of Cosmology and Astroparticle Physics, Physics of the Dark Universe, Journal of Cosmology and Gravitation, Physics Letter B, Classical and Quantum Gravity, General Relativity and Gravitation, New Journal of Physics, Europhysics Letters, Journal of Physics A: Mathematical and Theoretical, Physics Letter B, European Physical journal C, FACETS, Universe.
- I delivered more than 20 seminars in Universities all around the world.
- I am an evaluator of MINECO (Spain), NRF (South Africa) and CONICYT (Chile).
- I have coordinated with R. Lazkoz The Iberian Cosmology meeting of 2019 which took place at the University of the Basque Country in Bilbao in April 2019.
- I have coordinated with P. Martín-Moruno the meeting on memory of Prof. Pedro González-Díaz "Travelling through Pedro's universes" which took place at Complutense University in Madrid in December 2018.

- I have co-roganised with R. Lazkoz and D. Sáez-Gomez the mini-workshop Research Encounter for Synergetic Acvances in Cosmology and Astrophysics (RESACA), held in Bilbao, Spain, from 16th to 18th of July 2018.
- I co-rganized with R. Lazkoz the mini-workshop on Cosmology and Gravitation 2017, held in Bilbao, Spain, from 15th to 17th of November 2017
- I have co-organised the fourth Iberian Cosmology meeting which took place at CSIC in April 2009.
- I have coordenated the "primeiro encontro de cosmologia e gravitação à beira da serra da estrela" which took place at UBI (Portugal) in February 2015.
- I have coordinated the "segundo encontro de cosmologia e gravitação à beira da serra da estrela" which took place at UBI (Portugal) in February 2017.
- I have co-organised the fourth Iberian Cosmology meeting which took place at CSIC in April 2009.
- Organiser of the Seminar of Theoretical Physics at the University of Beira Interior (Portugal) from September 2014 till June 2016.
- Organiser of the Lunchtime meetings at The Institute of Cosmology and Gravitation of the University of Portsmouth, UK, during the period 2004-April 2006.
- Computing Skills: User of Linux, UNIX and WINDOWS operating systems, user of Maple and Mathematica packages and user of Latex, Beamer among other packages.

Other grants and awards

- November 2016: Work higlighted in New Scientist. This had a domino effect and our work was highlithed in about 20 outreach journals all around the world and in several languages.
- I have been member of PhD thesis tribunals in Portugal, Spain, Taiwan and Morrocco.
- February 2013: Accredited by ANECA as *profesor universitario contratado (profesor contratado doctor, profesor ayudante doctor y profesor de universidad privada).*
- December 2013: 5 years FCT Investigator fellowship (development grant).
- May 2012: 5 years Ikerbasque fellowship.
- July 2011: 3 years JAE fellowship at CSIC (Madrid).
- July 2011: PI of an FCT grant of almost 90000 Euros.
- January 2009: A 3-years distinguished assistant fellow position at LeCosPA in the National Taiwan University. I declined the offer for personal reasons.
- July 2006: Marcel Grossmann Fellowship to attend the Eleventh Marcel Grossmann Meeting on General Relativity.
- March 2006: Grant to attend the XLIst Rencontres de Moriond, Cosmology: Contents and Structures of the Universe.

- April 2003: (An abroad) Postdoctoral grant from the Spanish Ministry of Science and Technology.
- 1999-2002: Three Grants for "short stays abroad" of the Spanish Ministry of Science and Technology.
- 1999: Grant of CIEMAT (Madrid, Spain) for a Master on Nuclear Energy. I declined the offer to start my PhD.
- 1998: Grant of the International University of Andalusia for a Master on "Especialista universitario en tratamiento de residuos" (Waste treatment) and a project on "Gestión Mundial de los residuos radiactivos de atla actividad" (International management of nuclear waste).