

Memoria Grupo AHEP 2012

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Organización de conferencias y participación en comités

- *2nd Workshop on Flavor Symmetries and consequences in Accelerators and Cosmology (FLASY)*
S. Morisi y **J.W.F. Valle** en el International Advisory Board
Dortmund (Alemania), 30 Junio – 4 Julio 2012
- *UNILHC 2012 : 2nd ITN School on Unification in the era of LHC*
Valencia, 27 Agosto - 6 Septiembre 2012
Comité organizador: I. Antoniadis E.M. Balli, **M. Hirsch**, L. Ibáñez, H.-P. Nilles, J.C. Romão, G. Ross, **J.W.F. Valle**, G. Zoupanos

Publicaciones en revistas indexadas ISI Web of Science en 2012

– Artículos teóricos

1. *Quark mixing in the discrete dark matter model*
R. de Adelhart Toorop, F. Bazzocchi y **S. Morisi**
Nuclear Physics B **856** (2012) 670-681 (arXiv:1104.5676)
2. *Conservative upper limits on WIMP annihilation cross section from Fermi-LAT γ -rays*
F. Calore, **V. de Romeri** y F. Donato
Physical Review D **85** (2012) 023004 (arXiv:1105.4230)
3. *Radio data and synchrotron emission in consistent cosmic ray models*
T. Bringmann, F. Donato y **R.A. Lineros**
Journal of Cosmology and Astroparticle Physics **01** (2012) 049 (arXiv:1106.4821)
4. *Running soft parameters in SUSY models with multiple $U(1)$ gauge factors*
R. Fonseca, **M. Malinský**, W. Porod y F. Staub
Nuclear Physics B **854** (2012) 28-53 (arXiv:1107.2670)
5. *Gravitino dark matter and neutrino masses with bilinear R -parity violation*
D. Restrepo, **M. Taoso**, **J.W.F. Valle** y O. Zapata
Physical Review D **85** (2012) 023523 (arXiv:1109.0512)
6. *The reactor mixing angle and CP violation with two texture zeros in the light of T2K*
P.O. Ludl, **S. Morisi** y **E. Peinado**
Nuclear Physics B **857** (2012) 411-423 (arXiv:1109.3393)
7. *Fermion masses and mixing with tri-bimaximal in $SO(10)$ with type-I seesaw*
G. Blankenburg y **S. Morisi**
Journal of High Energy Physics **01** (2012) 016 (arXiv:1109.3396)
8. *Dark matter and LHC phenomenology in a left-right supersymmetric model*
J.N. Esteves, **M. Hirsch**, W. Porod, J.C. Romão, F. Staub y A. Vicente
Journal of High Energy Physics **01** (2012) 095 (arXiv:1109.6478)

9. *Hefty MSSM-like light Higgs in extended gauge models*
M. Hirsch, M. Malinský, L. Reichert, W. Porod y F. Staub
 Journal of High Energy Physics **02** (2012) 084 (arXiv:1110.3037)
10. *Updated BBN bounds on the cosmological lepton asymmetry for non-zero θ_{13}*
 G. Mangano, G. Miele, **S. Pastor**, O. Pisanti, S. Sarikas
 Physics Letters B **708** (2012) 1-5 (arXiv:1110.4335)
11. *Galactic synchrotron emission from WIMPs at radio frequencies*
 N. Fornengo, **R.A. Lineros**, M. Regis y **M. Taoso**
 Journal of Cosmology and Astroparticle Physics **01** (2012) 005 (arXiv:1110.4337)
12. *Constraining neutrinoless double beta decay*
L. Doramé, D. Meloni, **S. Morisi**, **E. Peinado** y **J.W.F. Valle**
 Nuclear Physics B **861** (2012) 259-270 (arXiv:1111.5614)
13. *Heavy Sterile Neutrinos in Tau Decays and the MiniBooNE Anomaly*
 C. Dib, J.C. Helo, **M. Hirsch**, S. Kovalenko e I. Schmidt
 Physical Review D **85** (2012) 011301 (arXiv:1110.5400)
14. *Low-energy neutrino-electron scattering as a Standard Model probe: the potential of LENA as case study*
 E.A. Garcés, O.G. Miranda, **M.A. Tórtola** y **J.W.F. Valle**
 Physical Review D **85** (2012) 073006 (arXiv:1112.3633)
15. *Cosmological Radio Emission induced by WIMP Dark Matter*
 N. Fornengo, **R.A. Lineros**, M. Regis y **M. Taoso**
 Journal of Cosmology and Astroparticle Physics **03** (2012) 033 (arXiv:1112.4517)
16. *Supersymmetric mass spectra and the seesaw type-I scale*
C. Arbeláez, M. Hirsch y **L. Reichert**
 Journal of High Energy Physics **02** (2012) 112 (arXiv:1112.4771)
17. *Main sequence stars with asymmetric dark matter*
 F. Iocco, **M. Taoso**, F. Leclercq y G. Meynet
 Physical Review Letters **108** (2012) 061301 (arXiv:1201.5387)
18. *Split neutrinos, two Majorana and one Dirac, and implications for leptogenesis, dark matter, and inflation*
 A. Mazumdar y **S. Morisi**
 Physical Review D **86** (2012) 045031 (arXiv:1201.6189)
19. *Seesaw Scale in the Minimal Renormalizable $SO(10)$ Grand Unification*
 S. Bertolini, L. Di Luzio y **M. Malinský**
 Physical Review D **85** (2012) 095014 (arXiv:1202.0807)
20. *Enhancing $l_i \rightarrow 3l_j$ with the Z^0 -penguin*
M. Hirsch, F. Staub y A. Vicente
 Physical Review D **85** (2012) 113013 (arXiv:1202.1825)

21. *New neutrino mass sum rule from the inverse seesaw mechanism*
L. Doramé, S. Morisi, E. Peinado, A.D. Rojas y **J.W.F. Valle**
 Physical Review D **86** (2012) 056001 (arXiv:1203.0155)
22. *Predicting leptonic CP violation in the light of the Daya Bay result on θ_{13}*
 D. Meloni, **S. Morisi** y **E. Peinado**
 European Physical Journal C **72** (2012) 2160 (arXiv:1203.2535)
23. *Linear collider test of a neutrinoless double beta decay mechanism in left-right symmetric theories*
 J. Barry, **L. Doramé** y W. Rodejohann
 European Physical Journal C **72** (2012) 2023 (arXiv:1203.3365)
24. *Flavour in heavy neutrino searches at the LHC*
 J.A. Aguilar-Saavedra, F. Deppisch, O. Kittel, y **J.W.F. Valle**
 Physical Review D **85** (2012) 091301 (arXiv:1203.5998)
25. *Cosmological lepton asymmetry with a nonzero mixing angle θ_{13}*
 E. Castorina, **U. França**, M. Lattanzi, J. Lesgourgues, G. Mangano, A. Melchiorri y **S. Pastor**
 Physical Review D **86** (2012) 023517 (arXiv:1204.2510)
26. *Predictive discrete dark matter model and neutrino oscillations*
M.S. Boucenna, S. Morisi, E. Peinado, Y. Shimizu y **J.W.F. Valle**
 Physical Review D **86** (2012) 073008 (arXiv:1204.4733)
27. *Systematic study of the $d = 5$ Weinberg operator at one-loop order*
 F. Bonnet, **M. Hirsch**, T. Ota y W. Winter
 Journal of High Energy Physics **07** (2012) 153 (arXiv:1204.5862)
28. *Lepton asymmetries and primordial hypermagnetic helicity evolution*
 V.B. Semikoz, D.D. Sokoloff y **J.W.F. Valle**
 Journal of Cosmology and Astroparticle Physics **06** (2012) 008 (arXiv:1205.3607)
29. *Global status of neutrino oscillation parameters after Neutrino-2012*
D.V. Forero, M.A. Tórtola y **J.W.F. Valle**
 Physical Review D **86** (2012) 073012 (arXiv:1205.4018)
30. *Heavy neutrinos and lepton flavor violation in left-right symmetric models at the LHC*
 S.P Das, F.F. Deppisch, O. Kittel y **J.W.F. Valle**
 Physical Review D **86** (2012) 055006 (arXiv:1206.0256)
31. *Large neutrino mixing and the Cabibbo angle*
M.S. Boucenna, S. Morisi, M.A. Tórtola y **J.W.F. Valle**
 Physical Review D **86** (2012) 051301 (arXiv:1206.2555)
32. *Phenomenology of a supersymmetric $U(1)_{B-L} \times U(1)_R$ extension of the standard model with inverse seesaw mechanism*
M. Hirsch, L. Reichert, W. Porod y F. Staub
 Physical Review D **86** (2012) 093018 (arXiv:1206.3516)

33. *Probing neutralino properties in minimal supergravity with bilinear R-parity violation*
 F. de Campos, O.J.P. Éboli, M.B. Magro, W. Porod, D. Restrepo, **S.P. Das**, **M. Hirsch** y **J.W.F. Valle**
 Physical Review D **86** (2012) 075001 (arXiv:1206.3605)
34. *Constrained SUSY seesaws with a 125 GeV Higgs*
M. Hirsch, F.R. Joaquim y A. Vicente
 Journal of High Energy Physics **11** (2012) 105 (arXiv:1207.6635)
35. *Neutrino masses from R-parity violation with a Z_3 symmetry*
E. Peinado y A. Vicente
 Physical Review D **86** (2012) 093024 (arXiv:1207.6641)
36. *Neutrinoless Double Beta Decay and Physics Beyond the Standard Model*
 F.F. Deppisch, **M. Hirsch** y H. Päs
 Journal of Physics G **39** (2012) 124007 (arXiv:1208.0727)
37. *Sneutrino Dark Matter in Low-scale Seesaw Scenarios*
V. de Romeri y **M. Hirsch**
 Journal of High Energy Physics **12** (2012) 106 (arXiv:1209.3891)
38. *Neutrino Mass from Cosmology*
 J. Lesgourgues y **S. Pastor**
 Advances in High Energy Physics **2012** (2012) 608515 (arXiv:1212.6154)
- **Artículos de la colaboración Observatorio Pierre Auger**
39. *Search for signatures of magnetically-induced alignment in the arrival directions measured by the Pierre Auger Observatory*
 The Pierre Auger Collaboration [incluye a **S. Pastor**]
 Astroparticle Physics **35** (2012) 354-361 (arXiv:1111.2472)
40. *Description of atmospheric conditions at the Pierre Auger Observatory using the Global Data Assimilation System (GDAS)*
 The Pierre Auger Collaboration [incluye a **S. Pastor**]
 Astroparticle Physics **35** (2012) 591-607 (arXiv:1201.2276)
41. *A search for anisotropy in the arrival directions of ultra high energy cosmic rays recorded at the Pierre Auger Observatory*
 The Pierre Auger Collaboration [incluye a **S. Pastor**]
 Journal of Cosmology and Astroparticle Physics **04** (2012) 040 (arXiv:1210.3602)
42. *Measurement of the Proton-Air Cross Section at $\sqrt{s} = 57$ TeV with the Pierre Auger Observatory*
 The Pierre Auger Collaboration [incluye a **S. Pastor**]
 Physical Review Letters **109** (2012) 062002 (arXiv:1208.1520)
43. *Search for point-like sources of ultra-high energy neutrinos at the Pierre Auger Observatory and improved limit on the diffuse flux of tau neutrinos*
 The Pierre Auger Collaboration [incluye a **S. Pastor**]
 Astrophysical Journal Letters **755** (2012) L4 (arXiv:1210.3143)

44. *The rapid atmospheric monitoring system of the Pierre Auger Observatory*
The Pierre Auger Collaboration [incluye a **S. Pastor**]
Journal of Instrumentation **7** (2012) P09001 (arXiv:1208.1675)
45. *Antennas for the detection of radio emission pulses from cosmic-ray induced air showers at the Pierre Auger Observatory*
The Pierre Auger Collaboration [incluye a **S. Pastor**]
Journal of Instrumentation **7** (2012) P10011 (arXiv:1209.3840)
46. *Large scale distribution of arrival directions of cosmic rays detected above 10^{18} eV at the Pierre Auger Observatory*
The Pierre Auger Collaboration [incluye a **S. Pastor**]
Astrophysical Journal Supplement Series **203** (2012) 34 (arXiv:1210.3736)
47. *A Search for Point Sources of EeV Neutrons*
The Pierre Auger Collaboration [incluye a **S. Pastor**]
Astrophysical Journal **760** (2012) 148 (arXiv:1211.4901)

Ponencias y comunicaciones a congresos

1. *Higgs and soft SUSY masses in models with extended gauge groups*
M. Hirsch
4th International Workshop on High Energy Physics in the LHC Era
Valparaíso (Chile), 4-10 Enero 2012
2. *Towards to minimal SO(10) GUT*
M. Malinský
International Workshop on Grand Unified Theories (GUT 2012)
Kioto (Japón), 15-17 Marzo 2012
3. *BBN bounds on the cosmological lepton asymmetry for non-zero θ_{13}*
S. Pastor
6th MULTIDARK Consolider Workshop & RENATA meeting
Canfranc, 12-15 Abril 2012
4. *Radiowaves and Dark Matter*
R.A. Lineros
6th MULTIDARK Consolider Workshop & RENATA meeting
Canfranc, 12-15 Abril 2012
5. *Low-energy imprints of extended gauge symmetries*
M. Malinský
Phenomenology symposium: LHC Lights the Way to New Physics (PHENO '12)
Pittsburgh (Estados Unidos), 7-9 Mayo 2012
6. *Lepton flavour violation and neutrinos*
M. Hirsch
Rencontres de Physique des Particules (RPP-2012)
Montpellier (Francia), 14-16 Mayo 2012

7. *Lepton Flavour Violation*
M. Hirsch
XL International Meeting on Fundamental Physics (Flavour mini-workshop)
Benasque, 24 Mayo – 3 Junio 2012
8. *Neutrino physics (theory)*
M.A. Tórtola
XL International Meeting on Fundamental Physics
Benasque, 24 Mayo – 3 Junio 2012
9. *Extended $U(1)_{B-L} \times U(1)_R$ group: Higgs and SUSY spectrum*
L. Reichert
From the Planck scale to the electroweak scale (PLANCK 2012)
Varsovia (Polonia), 24 Mayo – 3 Junio 2012
10. *Light Dark Matter in the Lepton-Specific two-Higgs-doublet Model*
S. Boucenna
From the Planck scale to the electroweak scale (PLANCK 2012)
Varsovia (Polonia), 24 Mayo – 3 Junio 2012
11. *Discrete dark matter*
E. Peinado
18th Int. Symposium on Particles, Strings and Cosmology (PASCOS 2012)
Mérida (México), 3-8 Junio 2012
12. *Neutrino masses and mixing: evidences and implications*
J.W.F. Valle
18th Int. Symposium on Particles, Strings and Cosmology (PASCOS 2012)
Mérida (México), 3-8 Junio 2012
13. *RH sneutrino Dark Matter with non-standard Seesaws*
V. De Romeri
18th Int. Symposium on Particles, Strings and Cosmology (PASCOS 2012)
Mérida (México), 3-8 Junio 2012
14. *Constraining neutrinoless double beta decay*
L. Doramé
18th Int. Symposium on Particles, Strings and Cosmology (PASCOS 2012)
Mérida (México), 3-8 Junio 2012
15. *Neutrino searches at the Pierre Auger Observatory*
S. Pastor (representando a la Colaboración Pierre Auger)
XXV Int. Conference on Neutrino Physics and Astrophysics (Neutrino 2012)
Kioto (Japón), 3-9 Junio 2012
16. *Cosmological lepton asymmetry with a nonzero mixing angle θ_{13} (póster)*
U. França
XXV Int. Conference on Neutrino Physics and Astrophysics (Neutrino 2012)
Kioto (Japón), 3-9 Junio 2012

17. *Status of global neutrino fits*
M.A. Tórtola
4th EUROnu Annual Meeting
París (Francia), 12-15 Junio 2012
18. *Cosmological lepton asymmetry with a nonzero mixing angle θ_{13}*
S. Pastor
Galileo Institute Workshop: What is ν ? From new experimental neutrino results to a deeper understanding of theoretical physics and cosmology
Florenca (Italia), 25-29 Junio 2012
19. *Neutrino Masses and Mixing: Evidences and Implications*
J.W.F. Valle
Workshop on Flavor Symmetries and consequences in Accelerators and Cosmology (FLASY 12)
Dortmund (Alemania), 30 Junio – 4 Julio 2012
20. *Dark Matter and Flavor Symmetry*
S. Morisi
Workshop on Flavor Symmetries and consequences in Accelerators and Cosmology (FLASY 12)
Dortmund (Alemania), 30 Junio – 4 Julio 2012
21. *Phenomenological aspects of discrete Dark Matter*
S. Boucenna
Workshop on Flavor Symmetries and consequences in Accelerators and Cosmology (FLASY 12)
Dortmund (Alemania), 30 Junio – 4 Julio 2012
22. *Pathways to small neutrino masses: The one-loop story*
M. Hirsch
Workshop on Flavor Symmetries and consequences in Accelerators and Cosmology (FLASY 12)
Dortmund (Alemania), 30 Junio – 4 Julio 2012
23. *2012 Status of Neutrino Oscillations: θ_{13} and Beyond*
M.A. Tórtola
Workshop on Flavor Symmetries and consequences in Accelerators and Cosmology (FLASY 12)
Dortmund (Alemania), 30 Junio – 4 Julio 2012
24. *Reactor mixing angle and flavor symmetries*
E. Peinado
Workshop on Flavor Symmetries and consequences in Accelerators and Cosmology (FLASY 12)
Dortmund (Alemania), 30 Junio – 4 Julio 2012
25. *Light neutrinos in Cosmology: a short review*
S. Pastor
ISAPP 2012: International School on Cosmic Microwave Background and High Energy Physics
La Palma, 16-24 Julio 2012
26. *Structure and prospects of the simplest $SO(10)$ GUTs*
M. Malinský
CETUP Workshop on Dark Matter, Grand Unification and Neutrinos
Lead (Estados Unidos), 19-21 Julio 2012

27. *Lepton flavor violation and non-unitary lepton mixing*
D.V. Forero
2nd ITN School on unification in the era of the LHC
Valencia, 27 Agosto – 6 Septiembre 2012
28. *Absolute neutrino mass scale from flavor symmetries*
S. Morisi
7th Neutrino Oscillation Workshop (NOW 2012)
Conca Specchiulla, Otranto (Italia), 9-16 Septiembre 2012
29. *New physics models in particle and astroparticle physics: consequences for neutrino physics, dark matter and LHC*
V. De Romeri
IDAPP 2-day meeting 2012
Ferrara (Italia), 29-31 Octubre 2012
30. *Phenomenology of a supersymmetric $U(1)_{B-L} \times U(1)_R$ extension of the standard model*
L. Reichert
IV Jornadas CPAN
Granada. 26-28 Noviembre 2012
31. *Unitary Violation in a Model with A_4 Flavor Symmetry*
D.V. Forero
DISCRETE 2012: The Third Symposium on Prospects in the Physics of Discrete Symmetries
Lisboa (Portugal), 3-7 Diciembre 2012
32. *El mundo de las astropartículas*
J.W.F. Valle
Conference on Extreme Science, elementary particles and the Universe
European Southern Observatory ESO, Santiago de Chile, 6 Diciembre 2012
33. *Neutrinos (theory)*
J.W.F. Valle
IX Latin American Symposium on High Energy Physics (SILAFEA 2012)
Sao Paulo (Brasil), 10-14 Diciembre 2012

Proceedings publicados

1. *Understanding and Probing Neutrinos*
J.W.F. Valle
XXIV Int. Conference on Neutrino Physics and Astrophysics (Neutrino 2010)
Atenas (Grecia) 14-19 Junio 2010
Nuclear Physics B (Proceedings Supplements) **229-232** (2012) 23-29
2. *Limits on the diffuse flux of ultra-high energy neutrinos using the Pierre Auger Observatory*
S. Pastor (representando a la Colaboración Pierre Auger)
4th Int. workshop on Acoustic and Radio EeV Neutrino detection Activities (ARENA 2010)
Nantes (Francia), Julio 2010
Nuclear Instruments and Methods in Physics Research A **662** (2012) S113-S117

3. *Analysis of non-standard neutrino-quark interactions*
 F.J. Escrivuela
 2011 CINVESTAV Advanced Summer School
 México DF (México), 25-29 Julio 2011
 AIP conference Proceedings **1420** (2012) 97-101

4. *Probing particle physics with the global 21-cm signal*
 U. França
 2011 CINVESTAV Advanced Summer School
 México DF (México), 25-29 Julio 2011
 AIP conference Proceedings **1420** (2012) 102-106

5. *Dark matter stability from non-Abelian discrete flavor symmetries (póster)*
 E. Peinado
 12th Int. conference on Topics in Astroparticle and Underground Physics (TAUP 2011)
 Munich (Alemania), 5-9 Septiembre 2011
 Journal of Physics: Conference Series **375** (2012) 012043

6. *Reviewing the status of neutrino NSI with quark parameters*
 F.J. Escrivuela
 12th Int. conference on Topics in Astroparticle and Underground Physics (TAUP 2011)
 Munich (Alemania), 5-9 Septiembre 2011
 Journal of Physics: Conference Series **375** (2012) 012046

7. *Galactic synchrotron emission from astrophysical electrons*
 R.A. Lineros, T. Bringmann and F. Donato
 12th Int. conference on Topics in Astroparticle and Underground Physics (TAUP 2011)
 Munich (Alemania), 5-9 Septiembre 2011
 Journal of Physics: Conference Series **375** (2012) 012037

8. *Dark matter synchrotron emission and radio observations*
 M. Taoso
 12th Int. conference on Topics in Astroparticle and Underground Physics (TAUP 2011)
 Munich (Alemania), 5-9 Septiembre 2011
 Journal of Physics: Conference Series **375** (2012) 012036

9. *Constraining the cosmic radiation density due to lepton number with BBN*
 S. Pastor and S. Sarikas
 12th Int. conference on Topics in Astroparticle and Underground Physics (TAUP 2011)
 Munich (Alemania), 5-9 Septiembre 2011
 Journal of Physics: Conference Series **375** (2012) 032004

10. *Neutrinos and dark matter*
 J.W.F. Valle
 7th International workshop Dark Side of the Universe (DSU 2011)
 KITPC, Beijing (China), 26-30 Septiembre 2011
 Journal of Physics: Conference Series **384** (2012) 012022

11. *Towards to new minimal $SO(10)$ unification*
S. Bertolini, L. Di Luzio y M. Malinský
International Workshop on Grand Unified Theories (GUT 2012)
Kioto (Japón), 15-17 Marzo 2012
AIP conference Proceedings **1467** (2012) 37-44

Seminarios impartidos

- *Dark Matter synchrotron emission in galaxies*
R.A. Lineros
IFT Madrid, 9 Enero 2012
- *Some aspects on non-Abelian discrete flavor symmetries*
E. Peinado
LNF, Frascati (Italia), 18 Abril 2012
- *Grand Unification approaching forties*
M. Malinský
Univ. Würzburg (Alemania), 26 Abril 2012
- *Low-energy imprints of extended gauge symmetries*
M. Malinský
Center for Cosmology and Particle Physics, New York University (Estados Unidos), 3 Mayo 2012
- *How much can we learn from Grand Unification?*
M. Malinský
Maryland Center for Fundamental Physics (Estados Unidos), 15 Mayo 2012
- *Radio emission from galactic and extragalactic dark matter*
R.A. Lineros
LAPTH Annecy-le-Vieux (Francia), 31 Mayo 2012
- *Double beta decay and the LHC*
M. Hirsch
Univ. Bonn (Alemania), 17 Diciembre 2012

Tesis doctorales

1. *Cosmological implications of some nonstandard particle physics scenarios*
Urbano Lopes França
Universidad de Valencia
Dirigida por Sergio Pastor
Fecha lectura: 3 Octubre 2012