

Memoria Grupo AHEP 2007

Versión provisional, 3 Enero 2008

Componentes del Grupo durante todo o parte del año 2007:

José W.F. Valle, Nuria Rius, Martin Hirsch, Sergio Pastor, Ricard Tomàs, Gennaro Miele, D.P. Roy, Satoru Kaneko, Stefano Morisi, Diego Aristizábal, Andreu Esteban, Urbano França, Teguayco Pinto, Albert Villanova, Massimiliano Lattanzi y Federica Bazzocchi, + colaboradores externos.

Más información en: <http://ahep.ific.uv.es>

(0) Organización de conferencias y participación en comités

- *Segunda reunión de la REd NAcional Temática de Astropartículas (RENATA 07)*
Valencia, 17-19 Septiembre 2007
J.W.F. Valle en el Comité Organizador

(1) Artículos publicados en revistas indexadas ISI en 2007

1. *Minimal supergravity threshold effects on the tri-bimaximal neutrino mixing pattern*
M. Hirsch, E. Ma, J.C. Romão, **J.W.F. Valle** y **A. Villanova del Moral**
Physical Review D **75** (2007) 053006 [arXiv: hep-ph/0606082]
2. *Thermal leptogenesis in extended supersymmetric seesaw*
M. Hirsch, **J.W.F. Valle**, M. Malinsky, J.C. Romão y U. Sarkar
Physical Review D **75** (2007) 011701 [arXiv: hep-ph/0608006]
3. *Ultrahigh Energy Neutrinos in the Mediterranean: Detecting ν_τ and ν_μ with a km^3 Telescope*
A. Cuoco, G. Mangano, G. Miele, **S. Pastor**, L. Perrone, O. Pisanti y P.D. Serpico
Journal of Cosmology and Astroparticle Physics **0702** (2007) 007 [arXiv: astro-ph/0609241]
4. *Flavor Symmetry and Vacuum Aligned Mass Textures*
S. Kaneko, H. Sawanaka, T. Shingai, M. Tanimoto y K. Yoshioka
Progress of Theoretical Physics **117** (2007) 161-181 [arXiv: hep-ph/0609220]
5. *Decay of Charged Higgs boson in TeV scale supersymmetric seesaw model*
G.C. Cho, **S. Kaneko** y A. Omote
Physics Letters B **652** (2007) 325-330 [arXiv: hep-ph/0611240]
6. *Soft leptogenesis in the inverse seesaw model*
J. Garayoa, M.C. González-García y **N. Rius**
Journal of High Energy Physics **0702** (2007) 021 [arXiv: hep-ph/0611311]
7. *Probing the internal solar magnetic field through g-modes*
T.I. Rashba, **V.B. Semikoz**, S. Turck-Chièze y **J.W.F. Valle**
Monthly Notices of the Royal Astronomical Society **377** (2007) 453-458 [arXiv: astro-ph/0611728]
8. *Just so Higgs boson*
F. Bazzocchi, M. Fabbrichesi y P. Ullio
Physical Review D **75** (2007) 056004 [arXiv: hep-ph/0612280]

9. *Model for fermion masses and lepton mixing in $SO(10) \times A_4$*
S. Morisi, M. Picariello y E. Torrente-Luján
 Physical Review D **75** (2007) 075015 [arXiv: hep-ph/0702034]
 10. *Predictive flavour symmetries of the neutrino mass matrix*
M. Hirsch, A.S. Joshipura, **S. Kaneko** y **J.W.F. Valle**
 Physical Review Letters **99** (2007) 151802 [arXiv: hep-ph/0703046]
 11. *Flavor Symmetry and Vacuum Aligned Mass Textures*
S. Kaneko, H. Sawanaka, T. Shingai, M. Tanimoto y K. Yoshioka
 International Journal of Modern Physics E **16** (2007) 1427-1436 [arXiv: hep-ph/0703250]
 12. *Quark masses and mixings in $E_6 \times S_3$: A Monte Carlo approach*
S. Morisi
 International Journal of Modern Physics A **22** (2007) 2921-2933
 13. *Probing non-standard neutrino interactions with supernova neutrinos*
A. Esteban-Pretel, **R. Tomàs** y **J.W.F. Valle**
 Physical Review D **76** (2007) 053001 (arXiv: 0704.0032 [hep-ph])
 14. *Insensitivity of leptogenesis with flavor effects to low energy leptonic CP violation*
 S. Davidson, J. Garayoa, F. Palorini y **N. Rius**
 Physical Review Letters **99** (2007) 161801 (arXiv: 0705.1503 [hep-ph])
 15. *Decaying warm dark matter and neutrino masses*
M. Lattanzi y **J.W.F. Valle**
 Physical Review Letters **99** (2007) 121301 (arXiv: 0705.2406 [astro-ph])
 16. *Exact relativistic beta decay endpoint spectrum*
 S.S. Masood, S. Nasri, J. Schechter, M.A. Tórtola, **J.W.F. Valle** y C. Weinheimer
 Physical Review C **76** (2007) 045501 (arXiv: 0706.0897 [hep-ph])
 17. *Decoherence in supernova neutrino transformations suppressed by deleptonization*
A. Esteban-Pretel, **S. Pastor**, **R. Tomàs**, G.G. Raffelt y G. Sigl
 Physical Review D **76** (2007) 125018 (arXiv: 0706.2498 [astro-ph])
 18. *Natural dark matter in SUSY GUTs with non-universal gaugino masses*
 S.F. King, J.P. Roberts y **D.P. Roy**
 Journal of High Energy Physics **0710** (2007) 106 (arXiv:0705.4219 [hep-ph])
 19. *Correlation of the Highest-Energy Cosmic Rays with Nearby Extragalactic Objects*
 The Pierre Auger Collaboration [incluye a **S. Pastor** y **T. Pinto**]
 Science **318** (2007) 938-943 (arXiv:0711.2256 [astro-ph])
- (1b) Preprints (todavía sin publicar en 2007)**
1. *Neutrino masses and electroweak symmetry breaking*
F. Bazzocchi y **J.W.F. Valle**
 arXiv: hep-ph/0609093

2. *Lepton asymmetries and the growth of cosmological seed magnetic fields*
V.B. Semikoz y **J.W.F. Valle**
arXiv: 0704.3978 [hep-ph]
3. *Variations on leptogenesis*
D. Aristizábal Sierra, M. Losada y E. Nardi
arXiv: 0705.1489 [hep-ph]
4. *Evidence for nearby universe structures in the ultra-high energy sky*
A. Cuoco, **G. Miele** y P.D. Serpico
arXiv: 0706.2864 [astro-ph]
5. *Fermion masses, Leptogenesis and Supersymmetric SO(10) Unification*
J.C. Romão, M.A. Tórtola, **M. Hirsch** y **J.W.F. Valle**
arXiv: 0707.2942 [hep-ph]
6. *A SUSY A_4 model for fermion masses and mixings*
F. Bazzocchi, **S. Kaneko** y **S. Morisi**
arXiv: 0707.3032 [hep-ph]
7. *High energy neutrino yields from astrophysical sources II: Magnetized sources*
M. Kachelriess, S. Ostapchenko y **R. Tomàs**
arXiv: 0708.3047 [astro-ph]
8. *CP violation and neutrino oscillations*
H. Nunokawa, S.J. Parke y **J.W.F. Valle**
arXiv:0710.0554 [hep-ph]
9. *Embedding $A(4)$ into left-right flavor symmetry: Tribimaximal neutrino mixing and fermion hierarchy*
F. Bazzocchi, **S. Morisi** y M. Picariello
arXiv:0710.2928 [hep-ph]
10. *Angular Signatures of Annihilating Dark Matter in the Cosmic Gamma-Ray Background*
A. Cuoco, J. Brandbyge, S. Hannestad, T. Haugbølle y **G. Miele**
arXiv:0710.4136 [astro-ph]
11. *Leptoquarks: Neutrino masses and accelerator phenomenology*
D. Aristizábal Sierra, **M. Hirsch** y S.G. Kovalenko
arXiv:0710.5699 [hep-ph]
12. *Disentangling neutrino-nucleon cross section and high energy neutrino flux with a km^3 neutrino telescope*
E. Borriello, A. Cuoco, G. Mangano, **G. Miele**, **S. Pastor**, O. Pisanti y P.D. Serpico
arXiv:0711.0152 [astro-ph]
13. *Constraining Non-Standard Neutrino-Electron Interactions*
J. Barranco, O.G. Miranda, C.A. Moura y **J.W.F. Valle**
arXiv:0711.0698 [hep-ph]

14. *Mu-tau neutrino refraction and collective three-flavor transformations in supernovae*
A. Esteban-Pretel, S. Pastor, R. Tomàs, G.G. Raffelt y G. Sigl
arXiv:0712.1137 [astro-ph]
15. *Probing a Supersymmetric Model for Neutrino Masses at Ultrahigh Energy Neutrino Telescopes*
M. Hirsch, D.P. Roy y J.W.F. Valle
arXiv:0712.1711 [hep-ph]
16. *Probing bilinear R-parity violating supergravity at the LHC*
F. de Campos, O.J.P. Eboli, M.B. Magro, W. Porod, D. Restrepo, **M. Hirsch y J.W.F. Valle**
arXiv:0712.2156 [hep-ph]

(2) Ponencias y comunicaciones a congresos

1. *Neutrinos and Cosmology*
S. Pastor
Neutrino Mass Measurements and their Implications
Durham (Reino Unido), Enero 2007
2. *Supernova Neutrino Sensitivity to Non-Standard Neutrino Interactions* (Póster)
A. Esteban-Pretel
Joint Indo-German School And Workshop 2007: Neutrinos in Physics, Astrophysics and
Cosmology
Mumbai (India), Febrero 2007
3. *High energy neutrinos from astrophysical sources: a self-consistent approach*
R. Tomàs
Joint Indo-German School And Workshop 2007: Neutrinos in Physics, Astrophysics and
Cosmology
Mumbai (India), Febrero 2007
4. *Precise calculation of the relic neutrino density*
S. Pastor
Joint Indo-German School And Workshop 2007: Neutrinos in Physics, Astrophysics and
Cosmology
Mumbai (India), Febrero 2007
5. *Dark energy and neutrino mass*
U. França
Workshop “Excursions in the Dark”
Perimeter institute, Waterloo (Canadá), Mayo 2007
6. *Neutrino mass models*
M. Hirsch
Int. Workshop on the Golden Channel at a Neutrino Factory
IFIC Valencia, Junio 2007
7. *Constraints on non-standard neutrino interactions*
N. Rius

Int. Workshop on the Golden Channel at a Neutrino Factory
IFIC Valencia, Junio 2007

8. *Non-standard neutrino interactions in cosmology*

S. Pastor

Int. Workshop on the Golden Channel at a Neutrino Factory
IFIC Valencia, Junio 2007

9. *Effects of non-standard neutrino-electron interactions on relic neutrino decoupling*

T. Pinto

13th Int. Symposium on Particles, Strings and Cosmology (PASCOS 07)
Londres (Reino Unido), Julio 2007

10. *Neutrinos: from Heaven to Earth and back*

J.W.F. Valle

Physics of Massive Neutrinos, Joint Annual Meeting of N4 IDEA and N6/WP1 ENTApP
Blaubeuren (Alemania), Julio 2007

11. *High energy neutrinos from astrophysical sources: a self-consistent approach*

R. Tomàs

ICRC 07

Mérida (México), Julio 2007

12. *Cosmological probes of the neutrino mass: current constraints and future sensitivities*

S. Pastor

NuMass workshop

Génova (Italia), Julio 2007

(3) Proceedings publicados

1. A. Villanova

Production and decays of supersymmetric Higgs bosons in spontaneously broken R-parity

14th International Conference on Supersymmetry and the Unification of Fundamental Interactions (SUSY 2006)

Irvine (Estados Unidos), Junio 2006

AIP Conference Proceedings **903** (2007) 137-140

2. R. Tomàs

Identifying the neutrino mass hierarchy with supernova neutrinos

IPM School and Conference on Lepton and Hadron Physics (IPM-LHP06)

Teheran (Irán), Mayo 2006

3. S. Pastor

Precision cosmology and neutrinos

Neutrino Oscillation Workshop (NOW 2006)

Otranto (Italia), Septiembre 2006

Nuclear Physics B (Proceedings Supplements) **168** (2007) 17-22

4. J.W.F. Valle
Concluding talk at NOW 2006
 Neutrino Oscillation Workshop (NOW 2006)
 Otranto (Italia), Septiembre 2006
 Nuclear Physics B (Proceedings Supplements) **168** (2007) 413-422
5. O.G. Miranda, M.A. Tórtola y J.W.F. Valle
Robustness of solar neutrino oscillations in the presence of non-standard physics
 VI Simposio Latinoamericano de Física de Altas Energías (SILAFEA)
 Puerto Vallarta (México), Noviembre 2006
 AIP Conference Proceedings **917** (2007) 100-107
6. S. Pastor
Cosmology and neutrino masses
 VI Simposio Latinoamericano de Física de Altas Energías (SILAFEA)
 Puerto Vallarta (México), Noviembre 2006
 AIP Conference Proceedings **917** (2007) 108-115
7. R. Tomàs
High energy neutrinos from optically thick sources
 VI Simposio Latinoamericano de Física de Altas Energías (SILAFEA)
 Puerto Vallarta (México), Noviembre 2006
 AIP Conference Proceedings **917** (2007) 116-121
8. T. Pinto
Effects of non-standard neutrino-electron interactions on relic neutrino decoupling
 13th Int. Symposium on Particles, Strings and Cosmology (PASCOS 07)
 Londres (Reino Unido), Julio 2007
 AIP Conference Proceedings **957** (2007) 433-436
9. E. Borriello, A. Cuoco, G. Mangano, G. Miele, S. Pastor, O. Pisanti y P.D. Serpico
Ultra-high energy neutrinos with a Mediterranean neutrino telescope
 ICRC 07
 Mérida (México), Julio 2007
10. R. Tomàs
High energy neutrinos from astrophysical sources: a self-consistent approach
 ICRC 07
 Mérida (México), Julio 2007

(4) Libros o Monografías

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(5) Cursos impartidos

1. *Cosmological Aspects of Neutrinos* (3 clases)
 S. Pastor
 Joint Indo-German School And Workshop 2007: Neutrinos in Physics, Astrophysics and

Cosmology
21-23 Febrero 2007, Mumbai (India)

(6) Seminarios impartidos

- *XXX*
R. Tomàs
Bangalore (India), Febrero 2007
- *XXX*
R. Tomàs
Noruega, Mayo 2007
- *Probing non-standard neutrino interactions with supernova neutrinos*
A. Esteban-Pretel
CERN, 9 Noviembre 2007
- *Supernova Neutrinos: A Phenomenological Overview*
R. Tomàs
DESY, Hamburgo (Alemania), 20 Noviembre 2007
- *Supernova Neutrinos: A Phenomenological Overview*
R. Tomàs
Univ. de Dortmund (Alemania), 6 Diciembre 2007

(7) Tesis doctorales

1. *Phenomenology of neutrino mass models*
Albert Villanova del Moral
Universidad de Valencia
Fecha lectura: XX Enero 2007
2. *Flavour violating signals of neutrino mass models*
Diego Aristizábal Sierra
Universidad de Valencia
Fecha lectura: 28 Junio 2007

(8) Trabajos de investigación o de máster

1. *Cosmology with mass-varying neutrinos*
Urbano Lopes França
Trabajo de investigación
Universidad de Valencia
30 Julio 2007
2. *Origen supersimétrico de la masa del neutrino*
Avelino Vicente Montesinos
Tesis de máster
Universidad de Valencia
16 Julio 2007