Memoria Grupo AHEP 2004

Componentes del Grupo: J.W.F. Valle, N. Rius, M. Hirsch, E. Akhmedov, C. Hugonie, T. Rashba, D. Restrepo, D. Aristizábal, O. Kittel, J.A. López Pérez, M. Ramage, M.A. Tórtola, A. Villanova, S. Pastor, J.C. Romão, M. Maltoni, T. Kernreiter, F. Deppisch e I. Picardi.

Más información en: **http://ific.uv.es/ahep/**

(0) Introducción

El grupo de Astropartículas y Física de Altas Energías (AHEP) del IFIC ...

(1) Artículos publicados en 2004

1. *Neutrino oscillations in three- and four-flavor schemes*
   E.Kh. Akhmedov,
   Phys. Usp. **47** (2004) 117

2. *Neutrino properties before and after KamLAND*
   S. Pakvasa y J.W.F. Valle,
   Proc. Indian Natl. Sci. Acad. **70A** (2004) 189 [arXiv:hep-ph/0301061]

3. *Resonant origin for density fluctuations deep within the Sun: helioseismology and magneto-gravity waves*
   C.P. Burgess, N.S. Dzhalilov, T.I. Rashba, V.B. Semikoz y J.W.F. Valle
   Mon. Not. Roy. Astron. Soc. **348** (2004) 609-624 [arXiv:astro-ph/0304462].

4. *The SUSY seesaw model and lepton-flavor violation at a future electron positron linear collider*
   F. Deppisch, H. Päs, A. Redelbach, R. Ruckl y Y. Shimizu
   Phys. Rev. D **69** (2004) 054014 [arXiv:hep-ph/0310053].

5. *Cornering solar radiative-zone fluctuations with KamLAND and SNO salt*
   C.P. Burgess, N.S. Dzhalilov, M. Maltoni, T.I. Rashba, V.B. Semikoz, M.A. Tórtola y J.W.F. Valle
   JCAP **0401** (2004) 007 [arXiv:hep-ph/0310366].

6. *Constraining the neutrino magnetic moment with anti-neutrinos from the sun*
   O.G. Miranda, T.I. Rashba, A.I. Rez y J.W.F. Valle
   Phys. Rev. Lett. **93** (2004) 051304 [arXiv:hep-ph/0311014].

7. *Evolution and nucleosynthesis of primordial low mass stars*
   I. Picardi, A. Chieffi, M. Limongi, O. Pisanti, G. Miele, G. Mangano, O. Straniero y G. Imbriani
   Astrophys. J. **609** (2004) 1035-1044 [arXiv:astro-ph/0311580].

8. *Phenomenological tests of supersymmetric A4 family symmetry model of neutrino mass*
   M. Hirsch, J.C. Romão, S. Skadhauge, J.W.F. Valle y A. Villanova del Moral,
   Phys. Rev. D **69** (2004) 093006 [arXiv:hep-ph/0312265]

9. *CP sensitive observables in* $e^+e^- \to \tilde{\chi}_i^0 \tilde{\chi}_j^0$ *and neutralino decay into Z boson*
   A. Bartl, H. Fraas, O. Kittel y W. Majerotto
   Eur. Phys. J. C **36** (2004) 233-243 [arXiv:hep-ph/0402016].

10. *Current cosmological bounds on neutrino masses and relativistic relics*
P. Crotty, J. Lesgourgues and S. Pastor
Phys. Rev. D **69** (2004) 123007 [arXiv:hep-ph/0402049].

11. *Series expansions for three-flavor neutrino oscillation probabilities in matter*
E.Kh. Akhmedov, R. Johansson, M. Lindner, T. Ohlsson y T. Schwetz
JHEP **0404** (2004) 078 [arXiv:hep-ph/0402175].

12. *Probing neutrino masses with future galaxy redshift surveys*
J. Lesgourgues, S. Pastor and L. Perotto
Phys. Rev. D **70** (2004) 045016 [arXiv:hep-ph/0403296].

13. *A simple analytic three-flavour description of the day-night effect in the solar neutrino flux*
E.Kh. Akhmedov, M.A. Tórtola y J.W.F. Valle
JHEP **0405** (2004) 057 [arXiv:hep-ph/0404083].

14. *Supersymmetric origin of neutrino mass*
M. Hirsch y J.W.F. Valle
New J. Phys. **6** (2004) 76 [arXiv:hep-ph/0405015].

15. *Status of global fits to neutrino oscillations*
M. Maltoni, T. Schwetz, M.A. Tórtola y J.W.F. Valle
New J. Phys. **6** (2004) 122 [arXiv:hep-ph/0405172].

16. *Enhanced solar anti-neutrino flux in random magnetic fields*
O.G. Miranda, T.I. Rashba, A.I. Rez y J.W.F. Valle
PRD, in press [arXiv:hep-ph/0406066].

17. *Precise determination of the neutral Higgs boson masses in the MSSM*
B.C. Allanach, A. Djouadi, J.L. Kneur, W. Porod y P. Slavich
JHEP **0409** (2004) 044 [arXiv:hep-ph/0406166].

18. *Invisible Higgs Boson Decays in Spontaneously Broken R-Parity*
M. Hirsch, J.C. Romão, J.W.F. Valle y A. Villanova del Moral
Phys. Rev. **D 70** (2004) 073012 [hep-ph/0407269].

(2) Ponencias y comunicaciones a congresos

1. *Beyond the mass mechanism*
M. Hirsch
IPPP Workshop on Neutrinoless Double Beta Decay Phenomenology
Durham (RU), 21-23 Abril 2004

2. *Why solar anti-neutrino data are very sensitive to Majorana neutrino magnetic moment?* (Póster)
T.I. Rashba
XXI$^{\mathrm{th}}$ International Conference on Neutrino Physics and Astrophysics (Neutrino 2004)
París (Francia), 14-19 Junio 2004.

3. *Status of global fits to neutrino oscillations* (Póster)
   M.A. Tórtola
   XXI$^{\mathrm{th}}$ International Conference on Neutrino Physics and Astrophysics (Neutrino 2004)
   París (Francia), 14-19 Junio 2004.

4. *Lightest Supersymmetric Particle Decays and Neutrino Angles*
   M. Hirsch
   Int. Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY04)
   Tsukuba (Japón), 17-23 Junio 2004,

5. *Constraining neutrino magnetic moments with solar and reactor neutrino data*
   M.A. Tórtola
   International School on AstroParticle Physics (ISAPP 2004)
   Gran Sasso (Italia), 28 Junio a 9 Julio 2004.

6. *Neutrino mass and Cosmology: current bounds and future sensitivities*
   S. Pastor
   6th Int. Workshop on Neutrino Factories and Superbeams (NuFact04)
   Osaka (Japón), 26 Julio a 1 Agosto 2004.

7. *Three-flavour effects and CP- and T-violation in neutrino oscillations*
   E.Kh. Akhmedov
   The Nobel Symposium 129 – Neutrino Physics
   Haga Slott, Enköping (Suecia), 19-24 Agosto 2004

8. *Sneutrino production and decay in e^+e^- colliders*
   D. Restrepo
   2nd Workshop of the ECFA on Physics and Detectors for a Linear Collider
   Durham (RU), 1-4 Septiembre 2004.

9. *Invisible Higgs boson decays in spontaneously broken R-parity*
   A. Villanova del Moral
   2nd Workshop of the ECFA on Physics and Detectors for a Linear Collider
   Durham (RU), 1-4 Septiembre 2004.

10. *Three-flavour effects in neutrino oscillations*
    E.Kh. Akhmedov
    VIth Int. Conference on Cosmoparticle Physics (Cosmion-2004)
    Moscú (Rusia), 2-8 Septiembre 2004

11. *Solar neutrino day/night effect and θ_{13}*
    E.Kh. Akhmedov
    Neutrino Oscillation Workshop (NOW 2004)
    Otranto (Italia), 11-17 Septiembre 2004.

12. *Subleading effects in the 1-2 sector: Non–standard interactions*
    M.A. Tórtola
    Neutrino Oscillation Workshop (NOW 2004)
    Otranto (Italia), 11-17 Septiembre 2004.

13. *Neutrino decoupling including flavor oscillations* (Póster)
T. Pinto
School on neutrino physics: From the laboratory to the cosmos
Bad Honnef (Alemania), 19-24 Septiembre 2004.

14. *Probing the Earth with solar and supernova neutrinos*
E.Kh. Akhmedov
Workshop on Neutrinos and the Early Universe
Trento (Italia), 4-8 Octubre 2004.

15. *Relic neutrinos and cosmological lepton asymmetry*
S. Pastor
Workshop on Neutrinos and the Early Universe
Trento (Italia), 4-8 Octubre 2004.

16. *Invisible Higgs boson decays in spontaneously broken R-parity*
A. Villanova del Moral
EuroGDR Supersymmetry, 4th Meeting
Frascati (Italia), 25-27 Noviembre 2004.

(3) Proceedings publicados

1. *NMSSM Higgs discovery at the LHC*
U. Ellwanger, J.F. Gunion, C. Hugonie y S. Moretti
3rd Les Houches Workshop: Physics at TeV Colliders
Les Houches (Francia), May 2003
Proceedings (Higgs working group), págs. 138-144

2. *SUSY parameter analysis at TeV and Planck scales*
B. Allanach, G. Blair, A. Freitas, S. Kraml, H. Martyn, G. Polesello, W. Porod y P. Zerwas
7th DESY Workshop on Elementary Particle Theory: Loops and Legs in Quantum Field Theory
Zinnowitz (Alemania), Abril 2004
Nucl. Phys. Proc. Suppl. **135** (2004) 107

3. *CP violation in production of neutralinos in e^+e^- collisions*
O. Kittel
Int. Workshop on Astroparticle and High Energy Physics, Valencia, Octubre 2003
Editores: M. Hirsch, M. Maltoni, S. Pastor y J.W.F. Valle
Journal of High Energy Physics (Conf. Proc.) (2004) PrHEP–AHEP2003/011

4. *Constraining neutrino magnetic moment with solar and reactor neutrino data*
M.A. Tórtola
Int. Workshop on Astroparticle and High Energy Physics, Valencia, Octubre 2003
Editores: M. Hirsch, M. Maltoni, S. Pastor y J.W.F. Valle
Journal of High Energy Physics (Conf. Proc.) (2004) PrHEP–AHEP2003/022

5. *Neutrino masses and GUT Baryogenesis*
J.A. López-Pérez y N. Rius
Int. Workshop on Astroparticle and High Energy Physics, Valencia, Octubre 2003

Editores: M. Hirsch, M. Maltoni, S. Pastor y J.W.F. Valle
Journal of High Energy Physics (Conf. Proc.) (2004) PrHEP–AHEP2003/048

6. *Neutrino oscillations, fluctuations and solar magneto-gravity waves*
   C.P. Burgess, N.S. Dzhalilov, M. Maltoni, T.I. Rashba, V.B. Semikoz, M.A. Tórtola y J.W.F. Valle
   Int. Workshop on Astroparticle and High Energy Physics, Valencia, Octubre 2003
   Editores: M. Hirsch, M. Maltoni, S. Pastor y J.W.F. Valle
   Journal of High Energy Physics (Conf. Proc.) (2004) PrHEP–AHEP2003/054

7. *MHD origin of density fluctuations deep within the sun and their influence on neutrino oscillation parameters in LMA MSW scenario*
   V.B. Semikoz, C.P. Burgess, N.S. Dzhalilov, T.I. Rashba y J. W. F. Valle
   4th Int. Conference on Nonaccelerator New Physics (NANP 03), Dubna (Rusia), Junio 2003
   Phys. Atom. Nucl. **67** (2004) 1147 [Yad. Fiz. **67** (2004) 1172]

8. *New ideas on SUSY searches at future linear colliders*
   S. Hesselbach, O. Kittel, G. Moortgat-Pick y W. Oller
   Int. Europhysics Conference on High-Energy Physics (HEP 2003), Aachen (Alemania), Julio 2003
   Eur. Phys. J. C **33** (2004) S746-S748

9. *Why solar anti-neutrino data are very sensitive to Majorana neutrino magnetic moment?* (Póster)
   O.G. Miranda, T.I. Rashba, A.I. Rez y J.W.F. Valle
   XXI$^{\mathrm{th}}$ International Conference on Neutrino Physics and Astrophysics (Neutrino 2004), París (Francia), 14-19 Junio 2004.
   NPB(PS), expected

(4) Libros o Monografías

- AHEP2003

(5) Cursos impartidos

1. *Introduction to supersymmetry*
   M. Hirsch
   IFIC 2004 (dentro del curso de Tercer Ciclo Fenomenología Avanzada de J.W.F. Valle)

2. *Neutrino Physics*
   E.Kh. Akhmedov
   IFIC 2004 (dentro del curso de Tercer Ciclo Fenomenología Avanzada de J.W.F. Valle)

(6) Seminarios impartidos

1. *Modelo con tripletes de Higgs y violacin bilineal de paridad-R que relaciona las propiedades de neutrinos con los experimentos de aceleradores*
   A. Villanova del Moral
   IFIC, Valencia, 30 Enero 2004

2. *Neutrino properties from cosmological observables*
S. Pastor
Scuola Normale Superiore, Pisa (Italia), 26 Febrero 2004

3. *Flavour Physics and Supersymmetry*
W. Porod
Univ. Karlsruhe (Alemania), 7 Mayo 2004

4. *Relic neutrinos: recent cosmological bounds on neutrino properties*
S. Pastor
Univ. Zurich (Suiza), 12 Mayo 2004

5. *Day-night effect in the solar neutrino flux and* U_{e3}
E.Kh. Akhmedov
IFT-UAM Madrid, 13 Mayo 2004

6. *Neutrinoless Double Beta Decay*
M. Hirsch
Univ. Zurich (Suiza), 26 Mayo 2004

7. *Double Beta Decay - A review*
M. Hirsch
Univ. Kanazawa (Japón), 25 Junio 2004

8. *Relic neutrinos: recent cosmological bounds on neutrino properties*
S. Pastor
INFN Padua (Italia), 14 Octubre 2004

9. *Studying the Sun with neutrinos and vice versa*
T.I. Rashba
Univ. Nápoles (Italia), 4 Noviembre 2004