Memoria Grupo AHEP 2006

Componentes del Grupo durante todo o parte del año 2006:
José W.F. Valle, Nuria Rius, Martin Hirsch, Werner Porod, Sergio Pastor, Ricard Tomàs, Diego Aristizábal, Andreu Esteban, Célio A. de Moura, Urbano França, Teguayco Pinto, María Amparo Tórtola, 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

- *Double Beta Decay 2006: ILIAS/N6 WG1 Collaboration meeting*
  Valencia, 28-29 Abril 2006
  Comité Organizador: **M. Hirsch, W. Porod** y **J.W.F. Valle**
- *Primera reunión de la REd NAcional Temática de Astropartículas (RENATA 06)*
  Cullera, 23-25 Octubre 2006
  Comité Organizador: J.J. Hernández, **M. Hirsch, S. Pastor** y **J.W.F. Valle**
- *Cosmology and Underground Laboratory Physics*
  Valencia, 6 Marzo 2006
  Comité Organizador: J.J. Gómez, M.C. González, P. Hernández, C. Peña y **N. Rius**
- *International School on Astro-Particle Physics*, European Doctorate School (ISAPP 2006): Neutrinos in Physics, Astrophysics and Cosmology
  Munich (Alemania), 23-31 Mayo 2006
  J.W.F. Valle en el Comité Científico Internacional

(1) Artículos publicados en 2006

1. *Are solar neutrino oscillations robust?*
   O.G. Miranda, **M.A. Tórtola** y **J.W.F. Valle**
   Journal of High Energy Physics **0610** (2006) 008 [arXiv: hep-ph/0406280]
2. *Physics interplay of the LHC and the IL*
   G. Weiglein et al (incluye a **W. Porod**)
   Physics Reports **426** (2006) 47-358 [arXiv: hep-ph/0410364]
3. *Ultra high energy tau neutrinos and fluorescence detectors: A Phenomenological approch*
   M.M. Guzzo y **C.A. Moura**
   Astroparticle Physics **25** (2006) 277-283 [arXiv: hep-ph/0504270]
4. *The aperture for UHE tau neutrinos of the Auger fluorescence detector using a Digital Elevation Map*
   G. Miele, **S. Pastor** y O. Pisanti
   Physics Letters B **634** (2006) 137-142 [arXiv: astro-ph/0508038]
5. *R-Parity violation assisted thermal leptogenesis in the seesaw mechanism*
   Y. Farzan y **J.W.F. Valle**
   Physical Review Letters **96** (2006) 011601 [arXiv: hep-ph/0509280]

6. *Dark energy, curvature and cosmic coincidence*
   U. França
   Physics Letters B **641** (2006) 351-356 [arXiv: astro-ph/0509177]

7. *Test of lepton flavor violation at LHC*
   A. Bartl, K. Hidaka, K. Hohenwarter-Sodek, T. Kernreiter, W. Majerotto y **W. Porod**
   The European Physical Journal C **46** (2006) 783-789 [arXiv: hep-ph/0510074]

8. *Determination of MSSM parameters from LHC and ILC observables in a global fit*
   P. Bechtle, K. Desch, **W. Porod** y P. Wienemann
   The European Physical Journal C **46** (2006) 533-544 [arXiv: hep-ph/0511006]

9. *On the treatment of threshold effects in SUSY spectrum computations*
   H. Baer, J. Ferrandis, S. Kraml y **W. Porod**
   Physical Review D **73** (2006) 015010 [arXiv: hep-ph/0511123]

10. *Supersymmetry parameter analysis: SPA convention and project*
    J.A. Aguilar-Saavedra et al (incluye a **M. Hirsch**, **W. Porod** y **J.W.F. Valle**)
    The European Physical Journal C **46** (2006) 43-60 [arXiv: hep-ph/0511344]

11. *Radiative zone solar magnetic fields and g-modes*
    T.I. Rashba, V.B. Semikoz y **J.W.F. Valle**
    Monthly Notices of the Royal Astronomical Society **370** (2006) 845-850 [arXiv: astro-ph/0511708]

12. *Probing neutrino masses with cmb lensing extraction*
    J. Lesgourgues, L. Perotto, **S. Pastor** y M. Piat
    Physical Review D **73** (2006) 045021 [arXiv: astro-ph/0511735]

13. *Constraining non-standard interactions in $\nu_e - e$ or $\bar{\nu}_e - e$ scattering*
    J. Barranco, O.G. Miranda, **C.A. Moura** y **J.W.F. Valle**
    Physical Review D **73** (2006) 113001 [arXiv: hep-ph/0512195]

14. *Geometric approach to condensates in holographic QCD*
    J. Hirn, **N. Rius** y V. Sanz
    Physical Review D **73** (2006) 085005 [arXiv: hep-ph/0512240]

15. *Production and decays of supersymmetric Higgs bosons in spontaneously broken R-parity*
    M. Hirsch, J.C. Romão, **J.W.F. Valle** y **A. Villanova del Moral**
    Physical Review D **73** (2006) 055007 [arXiv: hep-ph/0512257]

16. *Enhanced muon-electron conversion in nuclei in the inverse seesaw model*
    F. Deppisch, T.S. Kosmas y **J.W.F. Valle**
    Nuclear Physics B **752** (2006) 80-92 [arXiv: hep-ph/0512360]

17. *Right-handed sneutrinos as nonthermal dark matter*
    S. Gopalakrishna, A. de Gouvea y **W. Porod**
    Journal of Cosmology and Astroparticle Physics **0605** (2006) 005 [arXiv: hep-ph/0602027]

18. *Massive neutrinos and cosmology*
    J. Lesgourgues y **S. Pastor**
    Physics Reports **429** (2006) 307-373 [arXiv: astro-ph/0603494]

19. *Leptonic charged Higgs decays in the Zee model*
D. Aristizábal y D. Restrepo
Journal of High Energy Physics **0608** (2006) 036 [arXiv: hep-ph/0604012]

20. *Analysis of enhanced tanβ corrections in MFV GUT scenarios*
E. Lunghi, **W. Porod** y O. Vives
Physical Review D **74** (2006) 075003 [arXiv: hep-ph/0605177]

21. *Invisible neutralino decays from spontaneous R-parity violation*
M. Hirsch y **W. Porod**
Physical Review D **74** (2006) 055003 [arXiv: hep-ph/0606061]

22. *Stop Decay into Right-handed Sneutrino LSP at Hadron Colliders*
A. de Gouvea, S. Gopalakrishna y **W. Porod**
Journal of High Energy Physics **0611** (2006) 050 [arXiv: hep-ph/0606296]

23. *High energy neutrino yields from astrophysical sources I: Weakly magnetized sources*
M. Kachelriess y **R. Tomàs**
Physical Review D **74** (2006) 063009 [arXiv: hep-ph/0606406]

24. *Effects of non-standard neutrino-electron interactions on relic neutrino decoupling*
G. Mangano, G. Miele, **S. Pastor, T. Pinto**, O. Pisanti y P.D. Serpico
Nuclear Physics B **756** (2006) 100-116 [arXiv: astro-ph/0607267]

25. *Extended black box theorem for lepton number and flavor violating processes*
M. Hirsch, S. Kovalenko e I. Schmidt
Physics Letters B **642** (2006) 106-110 [arXiv: hep-ph/0608207]

26. *Experimental tests for the Babu-Zee two-loop model of Majorana neutrino masses*
D. Aristizábal y **M. Hirsch**
Journal of High Energy Physics **0612** (2006) 052 [arXiv: hep-ph/0609307]

(2) Ponencias y comunicaciones a congresos

1. *A Theory Perspective on Neutrino Oscillations*
J.W.F. Valle
III International Workshop on Neutrino Oscillations
Venecia (Italia), Febrero 2006

2. *SUSY spectrum codes*
W. Porod
LHC-D Workshop 2006 - SUSY und BSM
Aachen (Alemania), Abril 2006

3. *Lepton flavour and number violation at the LHC*
W. Porod
LHC-D Workshop 2006 - SUSY und BSM
Aachen (Alemania), Abril 2006

4. *Weighing neutrinos with cosmological observables*
S. Pastor
Double Beta Decay 2006: ILIAS/N6 WG1 Collaboration meeting
Valencia, Abril 2006

5. *Predicting neutrinoless double beta decay in an A4 flavour model*
A. Villanova
Double Beta Decay 2006: ILIAS/N6 WG1 Collaboration meeting
Valencia, Abril 2006

6. *High energy neutrino yields from astrophysical sources*
R. Tomàs
2nd Scandinavian Neutrino Workshop (SNOW 2006)
Estocolmo (Suecia), Mayo 2006

7. *Identifying the neutrino mass hierarchy with supernova neutrinos*
R. Tomàs
IPM School and Conference on Lepton and Hadron Physics
Teheran (Irán), Mayo 2006

8. *WG1 working group report*
W. Porod
Workshop on Flavour in the era of LHC
CERN, Ginebra (Suiza), Mayo 2006

9. *Production and decays of supersymmetric Higgs bosons in spontaneously broken R-parity*
A. Villanova
14th International Conference on Supersymmetry and the Unification of Fundamental Interactions (SUSY 2006)
Irvine (Estados Unidos), Junio 2006

10. *Phenomenology of neutrinoless double beta decay*
M. Hirsch
XXII International Conference on Neutrino Physics and Astrophysics
Santa Fe (Estados Unidos), Junio 2006

11. *RGE codes and the SPA project*
W. Porod
Workshop on Tools for SUSY and the New Physics
Annecy (Francia), Junio 2006

12. *Neutrinos in astroparticle physics*
J.W.F. Valle
International Workshop on The Dark Side of the Universe
Madrid, Junio 2006

13. *Double Beta Decay and the Extended Black Box Theorem*
M. Hirsch
372 WE-Heraeus-Seminar: Massive Neutrinos
Bad Honeff, Bonn (Alemania), Julio 2006

14. *Neutrino mass and theory beyond the standard model*
    J.W.F. Valle
    372 WE-Heraeus-Seminar: Massive Neutrinos
    Bad Honeff, Bonn (Alemania), Julio 2006

15. *Weighing neutrinos with cosmological observables*
    S. Pastor
    11th Summer Institute at Gran Sasso: Frontiers in Astroparticle Physics
    Lab. Nazionali del Gran Sasso (Italia), Julio 2006

16. *Neutrinos in astroparticle physics*
    J.W.F. Valle
    11th Summer Institute at Gran Sasso: Frontiers in Astroparticle Physics
    Lab. Nazionali del Gran Sasso (Italia), Julio 2006

17. *Constraints on the neutrino asymmetry of the Universe from cosmological data*
    M. Lattanzi
    Eleventh Marcel Grossmann Meeting
    Berlín (Alemania), Julio 2006

18. *Neutrinos in astroparticle physics*
    J.W.F. Valle
    2nd International Conference on Quantum Theories and Renormalization Group in Gravity and Cosmology (IRGAC 2006)
    Barcelona, Julio 2006

19. *Effect of cosmological neutrinos on the propagation of primordial gravitational waves*
    M. Lattanzi
    Eleventh Marcel Grossmann Meeting
    Berlín (Alemania), Julio 2006

20. *Neutrino physics overview*
    J.W.F. Valle
    7th International Workshop on Neutrino Factories and Superbeams
    Irvine (Estados Unidos), Agosto 2006

21. *Neutrino masses from cosmological observables*
    S. Pastor
    Workshop on Modern Cosmology, Inflation, CMB and LSS
    Benasque, Agosto 2006

22. *Precision cosmology and neutrinos*
    S. Pastor
    Neutrino Oscillation Workshop (NOW 2006)
    Otranto (Italia), Septiembre 2006

23. *Concluding Talk*
    J.W.F. Valle
    Neutrino Oscillation Workshop (NOW 2006)
    Otranto (Italia), Septiembre 2006

24. *High energy neutrinos from optically thick sources*
    R. Tomàs
    DESY Theory Workshop The Dark Universe
    DESY, Hamburgo (Alemania), Septiembre 2006

25. *Testing the Babu-Zee model with collider experiments*
    D. Aristizábal
    International Linear Collider workshop (ILC-ECFA and GDE Joint meeting)
    Valencia, Noviembre 2006

26. *High energy neutrinos from optically thick sources*
    R. Tomàs
    VI Simposio Latinoamericano de Física de Altas Energías (SILAFAE)
    Puerto Vallarta (México), Noviembre 2006

27. *Cosmology and neutrino masses*
    S. Pastor
    VI Simposio Latinoamericano de Física de Altas Energías (SILAFAE)
    Puerto Vallarta (México), Noviembre 2006

28. *Inclined neutrino showers: simulation update*
    T. Pinto
    Auger Collaboration meeting
    Malargüe (Argentina), Noviembre 2006

29. *Soft leptogenesis and the inverse seesaw*
    N. Rius
    Neutrino Microworkshop
    Madrid, Noviembre 2006

30. *Experimental tests for the Babu-Zee model*
    D. Aristizábal
    3rd Vienna Central European Seminar on Particle Physics and Quantum Field Theory
    Viena (Austria), Diciembre 2006

31. *Double Beta Decay as a Black Box*
    M. Hirsch
    3rd Annual Meeting European Network on Theoretical Astroparticle Physics (ILIAS/N6)
    París (Francia), Diciembre 2006

(3) Proceedings publicados

1. J.W.F. Valle
   Neutrino masses and oscillations
   11th International Symposium on Particles, Strings and Cosmology (PASCOS 2005)
   Gyeongju (Corea), Junio 2005
   AIP Conference Proceedings **805** (2006) 128-134

2. M. Hirsch
   Collider signals of gravitino dark matter in bilinearly broken R-parity
   International Europhysics Conference on High Energy Physics (HEP2005)
   Lisboa (Portugal), Julio 2005
   Proceedings of Science (HEP2005) (2006) 343

3. S. Pastor
   Neutrino masses and cosmology
   International Europhysics Conference on High Energy Physics (HEP2005)
   Lisboa (Portugal), Julio 2005
   Proceedings of Science (HEP2005) (2006) 165

4. C.A. Moura
   Detection of ultra-high energy tau-neutrino by double-bang event
   Advanced summer school in physics 2005: Frontiers in Contemporary Physics (EAV 2005)
   México DF (México), Julio 2005
   AIP Conference Proceedings **809** (2006) 190-192

5. M. Lattanzi, R. Ruffini y G. Vereshchagin
   Do WMAP data constrain the lepton asymmetry of the Universe to be zero?
   Albert Einstein's Century Meeting
   París (Francia), Julio 2005
   AIP Conference Proceedings **861** (2006) 912-919

6. J.W.F. Valle
   Neutrino Physics Overview
   Corfu Summer Institute on Elementary Particle Physics
   Corfú (Grecia), Septiembre 2005
   Journal of Physics: Conference Series **53** (2006) 473-505

7. R. Tomàs
   Identifying the neutrino mass hierarchy with supernova neutrinos
   9th Int. Conference on Topics in Astroparticle and Underground Physics (TAUP 2005)
   Zaragoza, Septiembre 2005
   Journal of Physics: Conference Series **39** (2006) 297-299

8. J.W.F. Valle
   A Theory Perspective on Neutrino Oscillations
   III International Workshop on Neutrino Oscillations
   Venecia (Italia), Febrero 2006
   Actas del congreso (Ed. Papergraf, 2006) págs. 247-259

9. M. Kachelriess y R. Tomàs
   High energy neutrino yields from astrophysical sources
   2nd Scandinavian Neutrino Workshop (SNOW 2006)
   Estocolmo (Suecia), Mayo 2006
   Physica Scripta **T127** (2006) 16-18

10. J.W.F. Valle
    Neutrinos in astroparticle physics
    International Workshop on The Dark Side of the Universe
    Madrid, Junio 2006
    AIP Conference Proceedings **878** (2006) 369-384

(4) Libros o Monografías

- E. Accomando et al (incluye a W. Porod en los editores)
  Report of the Workshop on CP studies and non-standard Higgs physics
  ha aparecido como un CERN Yellow book, CERN-2006-009 [arXiv: hep-ph/0608079]

(5) Cursos impartidos

1. *Neutrino physics and cosmology* (2 clases)
   S. Pastor
   Particle Physics and Cosmology: the Fabric of Spacetime
   Les Houches Summer School - Session 86
   1-2 Agosto 2006, Les Houches (Francia)

2. *Cosmological Aspects of Neutrino Physics* (3 clases)
   S. Pastor
   Neutrinos in Particle Physics, Astrophysics and Cosmology
   61st Scottish universities Summer School in Physics
   21-23 Agosto 2006, St Andrews (R. Unido)

3. *Fenomenología Avanzada*
   J.W.F. Valle
   Universitat de València (Facultat de Física), Tercer Ciclo 2005/06

(6) Seminarios impartidos

- *R-parity violation at colliders*
  M. Hirsch
  Universidad Técnica Federico Santa María, Viña del Mar, Chile, 6 Marzo 2006

- *Predicting neutrinoless double beta decay in an A_4 flavour symmetry model*
  A. Villanova
  Niels Bohr Institute, Copenhague, Dinamarca, 7 Marzo 2006

- *Weighing neutrinos with cosmological observables*
  S. Pastor
  Institut d'Estudis Espacials de Catalunya, Barcelona, 1 Marzo 2006
  Instituto de Física Teórica (UAM/CSIC), Madrid, 23 Mayo 2006
  Universidad de Granada, 25 Mayo 2006
  Universidad de Santiago de Compostela, 4 Octubre 2006

- *Phenomenological Aspects of Supernova Neutrinos*
  R. Tomàs
  IFIC, Valencia, 1 Marzo 2006
  Institutt for fysikk, Trondheim, Noruega, 8 Mayo 2006
  Universidad de Antioquia, Medellín, Colombia, 2 Octubre 2006
  Departamento de Física, CINVESTAV, México, 15 Noviembre 2006

- *Particle Physics Aspects of Double Beta Decay*
  M. Hirsch
  Instituto de Estructura de la Materia, Madrid, 23 Marzo 2006

- *Neutrinos in astroparticle physics*
  J.W.F. Valle
  Universidad Libre de Bruselas, Bélgica, 4 Mayo 2006

- *Lepton flavour violation in supersymmetric models*
  W. Porod
  IFIC, Valencia, 10 Mayo 2006

- *Flavourphysik supersymmetrischer Modelle*
  W. Porod
  Universidad de Viena, Austria, 1 Junio 2006

- *Higgs Bosons in spontaneously broken R-Parity: production modes and invisible decays*
  A. Villanova
  University of California, Riverside, USA, 7 Junio 2006

- *Der neutrinolose Doppelbetazerfall: Teilchenphysik jenseits des Standardmodells*
  M. Hirsch
  Tübingen, Alemania, 20 Julio 2006

- *Lepton number violation with and without accelerators*
  M. Hirsch
  University of Sussex, Brighton, Reino Unido, 27 Julio 2006

- *Relic neutrino decoupling including flavour oscillations and non-standard neutrino-electron interactions*
  T. Pinto
  Departamento de Física, CINVESTAV, México, 9 Agosto 2006

- *High Energy Neutrinos from optically thick sources*
  R. Tomàs
  Universidad de Antioquia, Medellín, Colombia, 3 Octubre 2006

- *Electroweak Symmetry Breaking and Neutrino Masses*
  F. Bazzocchi
  CFTP, Instituto Superior Técnico, Lisboa, Portugal, 18 Diciembre 2006