CURRICULUM VITAE

Alfredo Macías

February 7, 2018

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1 STUDIES:

1. 1982–1985 *Master Degree in Physical Sciences* : Universidad Autónoma Metropolitana-Iztapalapa. Mexico City. Thesis: *Field Theory in Curved Space–Time. Two Examples.* Under the supervision of Dr. Luis F. Urrutia and Dr. Luis O. Pimentel.

2. October 1985–July 1991 *Ph.D.*: Universidad Autónoma Metropolitana–Iztapalapa. Mexico City. Thesis: *Supersymmetric Quantum Cosmol-*

ogy and Fermionic Sector of the Kaluza–Klein Theories. Under the supervision of Prof. Dr. Heinz Dehnen and Dr. O. Obregón.

3. *Languages:* English, German, Spanish.

2 EMPLOYMENT:

1. 1985 to August 1988: Collaborator in National Program for Formation and Actualization of Physics Teachers.

2. October 1985 to June 1991: Associated Professor "C". Physics Department, Universidad Autónoma Metropolitana–Iztapalapa.

3. July 1991 to December 1992: Titular Professor "B". Physics Department, Universidad Autónoma Metropolitana–Iztapalapa.

4. January 1993 up to date: Titular Professor "C". Physics Department, Universidad Autónoma Metropolitana–Iztapalapa.

5. *Sabbatical Years*:

   (a) Instituto de Ciencias Nucleares, UNAM, from April 1^{st} to September 30^{th}, 1999.

   (b) Centro de Investigación y Estudios Avanzados (CINVESTAV), IPN, from October 1^{st}, 1999 to August 31^{th}, 2000.

   (c) UAM–Iztapalpa, from Abril 24^{th} to May 15^{th}, 2012.

   (d) Centro de Investigación y Estudios Avanzados (CINVESTAV), IPN, from May 16^{th}, to September 15^{th}, 2012.

   (e) UAM –Iztapalapa from September 16^{th}, 2012 to Abril 23^{th}, 2014.

3 RESEARCH STAYS

1. Fakultät für Physik der Universität Konstanz, Germany. Prof. Dr. Heinz Dehnen, April 1989 to April 1991.

2. Instituto do Fisica, Universidade do São Paulo, Brasil. Prof. Dr. Victor O. Rivelles. Junio 1992.

3. Department of Applied Mathematics of the University of Waterloo, Canada. Prof. Ray G. MacLenahan, May 1993.

4. Instituto de Física, University of Guanajuato, Mexico. Prof. Octavio Obregón, February 1996.

5. Fakultät für Physik der Universität Konstanz, Germany. Prof. Dr. Heinz Dehnen, June 1996.

6. Institut für Theoretische Physik der Universität Köln, Germany. Prof. Dr. Friedrich W. Hehl, July 1996.

7. Fakultät für Physik der Universität Konstanz, Germany. P.D. Dr. Claus Lãmmerzahl, July 1997.

8. Institut für Theoretische Physik der Universität Köln, Germany. Prof. Dr. Friedrich W. Hehl, August 1997.

9. Institut für Theoretische Physik der Universität zu Köln, Germany. Prof. Dr. Friedrich W. Hehl, July 1998.

10. Fakultät für Physik der Universität Konstanz, Germany. P.D. Dr. Claus Lãmmerzahl, August 1998.

11. Fakultät für Physik der Universität Konstanz, Germany. Prof. Dr. Heinz Dehnen and P.D. Dr. Claus Lãmmerzahl, August 1999.

12. Institut für Theoretische Physik der Universität zu Köln, Germany. Prof. Dr. Friedrich W. Hehl, July 2000.

13. Fakultät für Physik der Universität Konstanz, Germany. Prof. Dr. Heinz Dehnen and P.D. Dr. Claus Lãmmerzahl, August 2000.

14. Institut für Theoretische Physik der Universität zu Köln, Germany. Prof. Dr. Friedrich W. Hehl, August 2001.

15. Institut für Theoretische Physik der Universität zu Köln, Germany. Prof. Dr. Friedrich W. Hehl, August 2002.

16. Fakultät für Physik der Universität Konstanz, Germany. Prof. Dr. Heinz Dehnen, September 2002.

17. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, July 26 – August 14, 2004.

18. Michigan Centre for Theoretical Physics, Ann Arbor, USA. Prof. Michael Duff, December 5 – 11, 2004.

19. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, July 22 – August 19, 2005.

20. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, July 29 – August 21, 2006.

21. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, 6 – 20 April, 2007.

22. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, July 13 – August 10, 2007.

23. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, April 3 – 18, 2008.

24. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, April 10 – 24, 2009.

25. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, July 10 – 31, 2009.

26. Institut for Applied Physics der Universität Darmstadt, Germany. Prof. Reinhold Walser, April 10 – 23, 2010.

27. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, November 29 – December 10, 2010.

28. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, July 15 – August 13, 2011.

29. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, July 8 – 25, 2012.

30. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, April 27 – May 7, 2013.

31. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, June 29 – July 21, 2013.

32. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, July 14 – August 9, 2014.

33. ICRAnet Nice, France. Prof. Remo Ruffini, October 24 – 27,2014.

34. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, October 27 – November 5, 2014.

35. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, July 18 – August 5, 2015.

36. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, July 15 – August 4, 2016.

37. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, December 16 – 23, 2016.

38. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, April 11 – May 4, 2017.

39. ZARM der Universität Bremen, Germany. Prof. Claus Lämmerzahl, July 11 – August 17, 2017.

4 PUBLISHED–RESEARCH PAPERS:

1. O. Pimentel and A. Macías: "Klein–Gordon and Weyl Equations in Goedel Universe". *Phys. Lett.* **A117** (1986) 325–327.

2. A. Macías, O. Obregón, and M. P. Ryan Jr.: "Quantum Cosmology: The Supersymmetric Square Root". *Class. Quan. Grav.* **4** (1987) 1477–1486.

3. A. Macías and O. Obregón: "(Super) Cosmological Solution for Kasner Model". *Astrophysics and Space Science* **148** (1988) 297–304.

4. A. Macías and H. Dehnen: "Dirac Field in the 5–dimensional Kaluza–Klein Theory". *Class. Quan. Grav.* **8** (1991) 203–207.

5. A. Macías and H. Dehnen: "Dirac Field in the 5–dimensional Kaluza–Klein Theory with Scalar Field". *Int. J. Mod. Phys.* **A7** (1992) 5105–5113.

6. A. Macías and H. Dehnen: "Dirac Field in the 8–dimensional Kaluza–Klein Theory". *Mod. Phys. Lett.* **A7**, (1992) 103–116.

7. J. Socorro, O. Obregón, and A. Macías: "Supersymmetric microsuperspace quantization of the Taub Model". *Phys. Rev.* **D45** (1992) 2026–2032.

8. G. Germán, M. Lynker, and A. Macías: "The Static Quark–Antiquark Potential for the Nambu–Goto String occupied by Bose or Fermi Fields". *Phys. Rev.* **D46** (1992) 3640–3644.

9. G. Germán, A. Macías, and O. Obregón: "Kaluza–Klein Approach in Higher dimensional Theories of Gravity with Torsion". *Class. Quan. Grav.* **10** (1993) 1045–1053.

10. A. Macías, O. Obregón, and G.J. Fuentes–Martínez: "Dirac Field in the 5–dimensional Wesson's Theory". *Gen. Rel. Grav.* **25** (1993) 549–560.

11. A. Macías, O. Obregón, and J. Socorro: "Supersymmetric quantum cosmology". *Int. J. Mod. Phys.* **A8** (1993) 4291–4317.

12. C. Lämmerzahl and A. Macías: "On the Dimensionality of Space–Time". *J. Math. Phys.* **34** (1993) 4540–4552. Addendum: *J. Math. Phys.* **36** (1993) 2131.

13. A. Macías and H. Dehnen: "Fermionic Sector of the 8–dimensional Kaluza–Klein Theory". *Rev. Mex. Fís.* **39** (1993) s54–s63.

14. A. Macías, O. Obregón, and G.J. Fuentez–Martínez: "Weyl Equation in a 5D Quasistatic Spherical Symmetric Gravitational Field". *Rev. Mex. Fís.* **39** (1993) s64–s71.

15. T. Matos and A. Macías: "Black Holes from Generalized Chatterjee Solutions in Dilaton Gravity". *Mod. Phys. Lett.* **A9** (1994) 3707–3712.

16. O. Pimentel, A. Camacho, and A. Macías: "Weyl Equation in Gödel Type Universes". *Mod. Phys. Lett.* **A9** (1994) 3703–3706.

17. A. Macías, A. Camacho, and T. Matos: "Higher–Dimensional Theories, Dilaton Fields and Spontaneous Symmetry Breaking". *Int. J. Mod. Phys.* **D4** (1995) 617–637.

18. A. Macías, E.W. Mielke, H. Morales–Técotl, and R. Tresguerres: "Torsion and Weyl Covector in Metric–Affine Models of Gravity". *J. Math. Phys.* **36** (1995) 5868–5876.

19. E.W. Mielke, E.W, A. Macías, and H.A. Morales–Técotl: "Chiral fermions coupled to chiral gravity", *Phys. Lett.* **A215** (1996) 14–20.

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21. A. Macías: "Chiral (N=1) supergravity". *Class. Quantum Grav.* **13** (1996) 3163–3174.

22. E.W. Mielke, O. Obregón, and A. Macías: "Second–order reconstruction of inflationary dynamics compatible with recent COBE data". *Phys. Lett.* **B391** (1997) 281–286.

23. A. García, A. Macías, and E.W. Mielke: "Stewart–Lyth second–order approach as an Abel equation for reconstructing inflationary dynamics". *Phys. Lett.* **A229** (1997) 32–36.

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25. A. Macías and E.W. Mielke: "Recovering an effective Weinberg–Salam–Glashow model from higher dimensions", *Gravitation and Cosmology* **3** (1997) 89–96.

26. A. Macías, E.W. Mielke, and J. Socorro: "Supersymmetric quantum cosmology: the physical states", *Phys. Rev.* D57 (1998) 1027–1033.

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29. E. Hernández and A. Macías: "Induced masses and spin self–iteraction from five–dimensional Einstein–Cartan–Dirac–dilaton theory", *Int. J. Mod. Phys.* **A13** (1998) 169–182.

30. A. García, F.W. Hehl, C. Lämmerzahl, A. Macías, and J. Socorro: "Plebański–Demiański solution in metric–affine gravity", *Class. Quantum Grav.* **15** (1998) 1793–1799.

31. J. Socorro, C. Lämmerzahl, A. Macías, and E.W. Mielke: "Multipole solutions in metric–affine gravity". *Phys. Lett.* **A244** (1998) 317–323.

32. F. Gronwald, U. Muench, A. Macías, and F. W. Hehl: "Volume elements of spacetime and a quartet of scalar fields", *Phys. Rev.* **D58** (1998) 084021.

33. A. Macías, E.W. Mielke, and J. Socorro: "Supersymmetric quantum cosmology for Bianchi class A models", *Int. J. Mod. Phys.* **D7** (1998) 701–712.

34. N. Bretón, A. García, A. Macías, and G. Yáñez: "Colliding plane waves in terms of Jacobi functions". *J. Math. Phys.* **39** (1998) 6051–6065.

35. J. Socorro, A. Macías, and F.W. Hehl: "Computer algebra in gravity: Reduce–Excalc programs for (non–) Riemannian spacetimes I", *Computer Physics Communications* **115** (1998) 264–283.

36. A. García, A. Macías, and J. Socorro: "Electrovacuum sector of the MAG theories". *Class. Quantum Grav.* **16** (1999) 93–100.

37. F. Burgbacher, C. Lãmmerzahl, and A. Macías: "Is there a stable hydrogen atom in higher dimensions?". *J. Math. Phys.* **40** (1999) 625–634.

38. A. Macías: "The ideas behind the different approaches to quantum cosmology". *Gen. Rel. Grav.* **31** (1999) 653–672.

39. E. W. Mielke and A. Macías: " Chiral supergravity and anomalies". *Ann. d. Physik* (Leipzig) **8** (1999) 301–317.

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41. F. W. Hehl and A. Macías: "Metric–affine theory of gravity II. Exact solutions". *Int. J. of Mod. Phys.* **D8** (1999) 339–416.

42. E. Ayón–Beato, A. García, A. Macías, and H. Quevedo: "Uniqueness theorems for static black holes in metric–affine gravity". *Phys. Rev.* **D61** (2000) 084017.

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44. A. Macías, C. Lämmerzahl, and A. García: "A class of colliding waves in metric–affine gravity, nonmetricity and torsion shock waves". *J. Math. Phys.* **41** (2000) 6369–6380.

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47. E. Ayón–Beato, A. García, A. Macías, and H. Quevedo: "Static black holes of metric–affine gravity in the presence of matter". *Phys. Rev.* **D64** (2001) 024026.

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49. A.. Macías: "Black holes in metric-affine gravity". *Gravitations & Cosmology* **8** (2002) 87–92.

50. A. Macías, C. Lämmerzahl, and L.O. Pimentel: "Matching conditions in metric–affine gravity". *Phys. Rev.* **D66** (2002) 104013.

51. A. Macías and E. Lozano: "Plane–fronted waves from 5D Chern–Simons gravity". *Phys. Rev.* **D67** (2003) 085009.

52. A. García, C. Heinicke, F.W. Hehl, and A. Macías: "Exact vacuum solution of a $(1+2)$–dimensional Poincaré gauge theory: BTZ solution with torsion". *Phys. Rev.* **D67** (2003) 124016.

53. A. Macías: " (4+1)–dimensional Topological Supergravity". *Rev. Mex. Fis.* **49** (2003) s2 67 – 71.

54. A. García, C. Heinicke, F.W. Hehl, and A. Macías: "The Cotton tensor in Riemannian spacetimes". *Class. Quantum Grav.* **21** (2004) 1099–1118.

55. A. Camacho and A. Macías: "New experimental proposals for testing Dirac equation". *Phys. Lett.* **B582** (2004) 229–236.

56. A. Sánchez, A. Macías, and H. Quevedo: "Generating Gowdy cosmological models". *J. Math. Phys.* **45** (2004) 1849–1858.

57. C. Lämmerzahl, A. Macías, and H. Müller, "Lorentz invariance violation and charge (non–)conservation: A general theoretical frame for extensions of the Maxwell equations". *Phys. Rev.* **D71** (2005) 025007.

58. A. Macías and A. Camacho: "Kerr–Schild metric in Topological Massive (2+1) Gravity". *Gen. Rel. Grav.* **37** (2005) 759–768.

59. A. Camacho and A. Macías: "Space-time torsion contribution to quantum interference phases". *Phys. Lett.* **B617** (2005) 118–123.

60. A. Macías, H. Quevedo, and A. Sánchez: "On the local Lorentz invariance in $N = 1$ supergravity". *Phys. Rev.* **D73** (2006) 027501.

61. A. Camacho and A. Macías: " Deformed dispersion relations and the degree of the coherence function". *Gen. Rel. Grav.* **38** (2006) 547–551.

62. C. Lãmmerzahl, A. Macías, and H. Müller, "Limits to differences in active and passive charges". *Phys. Rev.* **A75** (2007) 052104.

63. A. Camacho and A. Macías: "Thermodynamics of a photon gas and deformed dispersion relations". *Gen. Rel. Grav.* **39** (2007) 1175 – 1183.

64. A. Macías, A. Camacho, J. Kunz, and C. Lãmmerzahl: " Midisuperspace Supersymmetric Quantum Cosmology". *Phys. Rev.* **D77** (2008) 064009.

65. A. Macías, A. Camacho: "On the incompatibility between Quantum Theory and General Relativity". *Phys. Lett.* **B663** (2008) 99–102.

66. M. Maceda and A. Macías: "Supersymmetric constraint for (class A) Bianchi models". *Phys. Rev.* **D78** (2008) 044044.

67. M. Maceda, A. Macías, and L.O. Pimentel: " Homogeneous noncommutative quantum cosmology". *Phys. Rev.* **D78** (2008) 064041.

68. M. Maceda and A. Macías: " The noncommutative Landau problem in Podolskys generalized electrodynamics". *Phys. Rev.* **D79** (2009) 087703.

69. E. Göklü, C. Lämmerzahl, A. Camacho, and A. Macías, "Space–time fluctuations and the spreading of wavepackets". *Class. Quantum Grav.* **26** (2009) 225010.

70. A. Macías, A. Camacho, L.F. Barragán–Gil, and C. Lãmmerzahl, "Is the non-physical states conjecture valid?" *Gen. Rel. Grav.* **42** (2010) 489 – 508.

71. A. Camacho, L.F. Barragán–Gil, and A. Macías, "Alternative method for the measurement of the temperature of a Bose-Einstein condensate". *Cent. Eur. J. Phys.* **8** (2010) 717 – 725. DOI: 10.2478/s11534-009-0155-0.

72. M. Maceda and A. Macías: "$S^1 \times S^2$ Gowdy supersymmetric constraint". *Phys. Rev.* **D83** (2011) 047502.

73. M. Maceda and A. Macías: "Noncommutative Killing vectors". *Phys. Rev.* **D84** (2011) 064002.

74. M. Maceda and A. Macías: "Birefringence and Noncommutative Structure of Space-time". *Phys. Lett.* **B705** (2011) 157–160.

75. A. García, E. Hackmann, C. Lämmerzahl, and A. Macías: "No-hair conjecture for Einstein–Plebański nonlinear electrodynamics static black holes". *Phys. Rev.* **D86** (2012) 024037.

76. M. Maceda and A. Macías: "A Noncommutative Model of BTZ Spacetime". *Euro. Phys. J* **C73** (2013) 2383.

77. I. Cabrera–Munguía, C. Lämmerzahl, and A. Macías: "Exact solution for a binary system of unequal counter–rotating black holes". *Class. Quantum Grav.* **30** (2013) 175020.

78. I. Cabrera-Munguia, C. Lämmerzahl, L.A. López, and A. Macías: "Opposite charged two-body system of identical counter-rotating black holes". *Phys. Rev.* **D88** (2013) 084062.

79. I. Cabrera-Munguia, C. Lämmerzahl, L.A. López, and A. Macías: "Generalized black diholes". *Phys. Rev.* **D90** (2014) 024013.

80. E. Castellanos, C. Escamilla-Rivera, A. Macías, and D. Núñez "Scalar Field as a Bose-Einstein Condensate?". *JCAP* **11** (2014) 034.

81. A. Garcia, E. Hackmann, J. Kunz, C. Lämmerzahl, and A. Macías: "Motion of test particles in a regular black hole spacetime". *J. of Math. Phys.* **56** (2015) 032501.

82. I. Cabrera-Munguia, C. Lämmerzahl, and A. Macías: "Asymmetric black dyonic holes". *Phys. Lett.* **B743** (2015) 357.

83. S. Britze, A. Eckart, C. Lammerzahl, J. Roland, M. Brockamp, E. Hackmann, J. Kunz, A. Macias, R.Malchow, N. Sabha, and B. Shahzamanian: "Jet signatures of black holes: From Sgr A* to active galactic nuclei". *Astron.Nachr.* /AN **336** (2015) 471–476.

84. E. Castellanos, C. Escamilla–Rivera, C. Laemmerzahl, and A. Macías: "Scalar field as a Bose–Einstein condensate in a Schwarzschild–de Sitter spacetime". *Int. J. Mod. Phys.* **D26**(2017) 1750032.

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5 CHAPTERS IN BOOKS

86. E.W. Mielke, P. Baekler, F.W. Hehl, A. Macías, and H.A. Morales–Técotl: "Yang–Mills–Clifford form of the chiral Einstein action", in: *Gravity, Particles and Space–Time, (Ivanenko Memorial)*, ed. by P. Pronin and G. Sardanashvily (World Scientific, Singapore, 1996), pp. 217–254. (ISBN 81–02–2668–3)

87. A. Macías, E.W. Mielke, H. Morales–Técotl, and R. Tresguerres: "Projectively Invariant Metric–Affine Models of Gravity", in: New Perspectives in Gravitation. Ed. G. Sardanashvily. Hadronic Press Inc. (USA) (1996), pp. 243–255. (ISBN 0–911767–96–7).

88. A. Macías, E.W. Mielke, and H. Morales–Técotl: "Gravitational–Geometric Phases and Translations", in: New Perspectives in Gravitation. Ed. G. Sardanashvily. Hadronic Press Inc. (USA) (1996), pp. 227–241. (ISBN 0–911767–96–7).

89. A. García and A. Macías: "Black holes as solutions of the Einstein–Maxwell equations of Petrov type D", in: Black Holes: Theory and Observations. F.W. Hehl, C. Kiefer and R.J.K. Metzler, eds. Lecture Notes in Physics. Vol. 514 (Springer Verlag 1998) pp. 203–224. (ISBN 3–540–65158–6).

90. F.W. Hehl, A. Macías, E. W. Mielke, and Yu. N. Obukhov: "On the structure of the energy–momentum and the spin currents in Dirac's electron theory", in: On the Einstein's Path. Festschrift for E. Schucking 70^{th} birthday. Ed. A. Harvey. (Springer Verlag 1999) pp. 257–274. (ISBN 0–387–98564–6).

91. G. Amelino–Camelia, C. Lämmerzahl, A. Macías, and H. Müller: "The Search for Quantum Gravity Signals", in: Gravitation and Cosmology.

A. Macías, C. Lämmerzahl, and D. Núñez eds. (American Institut of Physics 2005) **758** pp. 30–80. **ISBN 0-7354-02043-4**.

92. A. Macías and H. Quevedo: "Time paradox in quantum gravity", in: Quantum Gravity – Mathematical models and experimental bounds. B. Fauser, J. Tolksdorf, E. Zeidler eds., (Birkhaeuser, Basel, 2006) pp. 41–60. **ISBN 978-3-7643-7977-3**

93. A. Camacho, A. Macías, and A. Camacho–Galván: "Canonical and Grand–Canonical Ensembles for trapped Bose Gases", in: New trends in statistical physics: Festschrift in honor of Leopoldo García–Colín's 80^{th} birthday. A. Macías and L. Dagdug eds., (World Scientific, Singapore, 2010) pp. 3 – 14. (ISBN 13 978-981-4307-53-6).

94. E. Hackmann, C. Lämmerzahl, and A. Macías, "Complete classification of geodesic motion in fast Kerr and Kerr–(anti-)de Sitter space–times", in: New trends in statistical physics: Festschrift in honor of Leopoldo García–Colín's 80^{th} birthday. A. Macías and L. Dagdug eds., (World Scientific, Singapore, 2010)pp. 301 – 322. (ISBN 13 978-981-4307-53-6).

6 Books

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7 BOOKS EDITED

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97. "Recent developments in gravitation and mathematical physics. *Proceedings of the* 2^{nd} *mexican school on gravitation and mathematical physics.*, A. García, C. Lãmmerzahl, A. Macías, D. Núñez, and T. Matos, eds. **ISBN: 3–9805735–0–8** (Science Network, Konstanz, 1998).

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99. General Relativity and Gravitation Journal **33**, Number 5, May 2001. Special Issue for Heinz Dehnen. (Plenum Publishing Corporation). Guest Editors: C. Lämmerzahl and A. Macías. **ISSN 0001–7701** 218 pages.

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2. Gravity and Mathematical Physics symposium. XXXVI National Conference of the mexican physical socity (SMF). Acapulco, Gro. October 18–22, 1993.

3. 1^{st} Annual Meeting of the Gravitation and Mathematical Physics Section of the Mexican Physical Society (SMF). UAM–Iztapalapa, Mexico city, November 11, 1993.

4. CAM physics meeting, member of the mexican program committee for the relativity and mathematical physics symposium. Cancun, Quintana Roo, September 26–30, 1994.

5. 2^{nd} Annual Meeting of the Gravitation and Mathematical Physics Section of the Mexican Physical Society (SMF). CINVESTAV–IPN, Mexico city, July 13–14, 1994.

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24. Fourth Mexican Meeting on Mathematical and Experimental Physics. El Colegio Nacional, México, D.F., July 19–23, 2010.

25. Fifth Leopoldo García–Colín Mexican Meeting on Mathematical and Experimental Physics. El Colegio Nacional, México, D.F., Septiembre 9–13, 2013.

26. Topological and scalar-tensor theories of gravity in honour of: Eckehard W. Mielke 65th Birthday Luis O. Pimentel 60th Birthday. UAM–Iztapalapa, México, D.F., April 7–11, 2014.

27. Workshop soft matter, hard matter and dark matter. UAM-Iztapalapa, México, D.F., July 9^{th} – 11^{th}, 2014.

28. Session: BS2 Scalar Fields in Cosmology in the Marcel Grossmann Meeting XIV, Rome, Italy. July 13^{th}, 2015.

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11 THESIS ADVISER

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4. Ph.D. of the M.Sc. Alberto Sánchez: *Gowdy cosmological models in supergravity*, May 31, 2007. Reported in:

   (a) A. Sánchez, A. Macías, and H. Quevedo: "Generating Gowdy cosmological models". *J. Math. Phys.* **45** (2004) 1849–1858.

   (b) A. Macías, H. Quevedo, and A. Sánchez: "On the local Lorentz invariance in $N = 1$ supergravity". *Phys. Rev.* **D73** (2006) 027501.

   (c) A. Macías, H. Quevedo, and A. Sánchez: "Supersymmetric quantization in midisuperspace". Proceedings of the XXVIII Spanish Relativity Meeting, L. Mornas and J. Diaz–Alonso, eds. (AIP Proceedings Vol. 841, USA 2006) 599–602.

   (d) A. Macías, H. Quevedo, and A. Sánchez: "Gowdy T^3 Cosmological Models in $N = 1$ Supergravity". Proceedings of the Albert Einstein International Conference. J.M. Alimi, and A. Füzfa, eds. (AIP Conference Proceedings, New York, 2006) **861** pp. 953–960.

   (e) A. Sánchez, A. Macías, and H. Quevedo: "A method for generating Gowdy cosmological models". Proceedings of the 6^{th} workshop on gravitation and mathematical physics. *Rev. Mex. Fís.* **S53** (2007) 110–114.

5. Ph.D. of the Phys. Enrique Lozano. Reported in:

   (a) A. Macías and E. Lozano, "5–dimensional Chern–Simons gravity with non–linear electrodynamics". *Mod. Phys. Lett.* **A16** (2001) 2421–2429.

   (b) A. Macías and E. Lozano, "Plane–fronted waves from 5D Chern–Simons gravity". *Phys. Rev.* **D67** (2003) 085009.

   (c) A. Macías and E. Lozano: "Generalized Bertotti–Robinson solution to the Einstein–Heisenberg–Euler theory", in: Gravitation

and Cosmology. A. Macías, C. Lämmerzahl, and D. Núñez eds. (American Institut of Physics 2005) pp. 222–230.

6. Postdoctoral adviser of Dr. Marco Maceda 2008. Reported in:

   (a) M. Maceda and A. Macías: "Supersymmetric constraint for (class A) Bianchi models". *Phys. Rev.* **D78** (2008) 044044.

   (b) M. Maceda, A. Macías, and L.O. Pimentel: " Homogeneous non-commutative quantum cosmology". *Phys. Rev.* **D78** (2008) 064041.

   (c) M. Maceda and A. Macías: " The noncommutative Landau problem in Podolskys generalized electrodynamics". *Phys. Rev.* **D79** (2009) 087703.

7. Postdoctoral adviser of Dr. Iván Cabrera 2012–2014. Reported in:

   (a) I. Cabrera–Munguía, C. Lämmerzahl, and A. Macías: "Exact solution for a binary system of unequal counter–rotating black holes". *Class. Quantum Grav.* **30** (2013) 175020.

   (b) I. Cabrera–Munguía and Alfredo Macías: "Exact solution for two unequal counter–rotating black holes". AIP Conf. Proc. **1548** 156 (2013); doi: 10.1063/1.4817036

   (c) I. Cabrera-Munguia, C. Lämmerzahl, L.A. López, and A. Macías: "Opposite charged two-body system of identical counter-rotating black holes". *Phys. Rev.* **D88** (2013) 084062.

   (d) I. Cabrera-Munguia and Alfredo Macías: "On naked singularities in the extreme double Reissner-Nordstrm solution". AIP Conf. Proc. **1577** 213 (2014).

   (e) I. Cabrera-Munguia, C. Lämmerzahl, L.A. López, and A. Macías: "Generalized black diholes". *Phys. Rev.* **D90** (2014) 024013.

8. Bachelor thesis of Daniel Amaro. "*Introductory Notes to General Relativity*". July 2016.

9. Bachelor thesis of Flavio Joao Pineda Arvizu. "*Notes on the basic principles of the Weinberg Salam theory*". arch 2017.

12 GRANTS AND RESEARCH PROJECTS

1. National Bureau of Science and Tecnology of Mexico, (CONACYT) Ph.D. Grant. (1985).

2. Deutscher Akademischer Austauschdienst (German Service of Academic Interchange) Ph.D. Grant, Sandwich Program. (1988).

3. National Bureau of Science and Tecnology of México,(CONACYT), Grant: "Study of Integrable Models in Field Theories: Chern–Simons Models and its Applications". (1992–1993).

4. ICTP–Grant for participation in Spring School and Workshop on String Theory and Quantum Gravity (1992).

5. National Bureau of Science and Tecnology of México,(CONACYT), Grant: "Integrable Models in Field Theories and Multidimensional Unification Theories". (1995–1998).

6. Joint Mexican–German project KFA–CONACYT: "Metric–affine superconection gauge theories". UAM–Iztapalapa–University of Cologne. DLR–Conacyt (1996–1998).

7. ICTP–Grant Visiting Scholar Programme of Prof. Yuval Ne'eman of the Tel Aviv University (1997–1999).

8. National Bureau of Science and Tecnology of México,(CONACYT), Grant: "Chiral Gravity and Supergravity, Inflation and Computer Algebra". (1999–2001).

9. Joint Mexican–German project DLR–CONACYT: "*Quantum Cosmology and Quantum Gravity: Theory and Observational Implications*". UAM–Iztapalapa–University of Konstanz. DLR–Conacyt (1999–2000).

10. Joint Mexican–German project DLR–CONACYT: "*Chiral and Metric–Affine Gravity, Knots and Quantum Cosmology, Including Applications of Computer Algebra*". UAM–Iztapalapa–University of Köln. DLR–Conacyt (2000–2001).

11. SEP–CONACyT grant: "*Topological theories of gravity, branes and inflation. Applications of computer algebra*". (2003–2006).

12. Joint Mexican–German project DFG–CONACYT: "*Stochastic fluctuations of spacetime*". UAM–Iztapalapa–University of Bremen. DFG–Conacyt (2007–2009).

13. SEP–CONACyT grant: "*Quantum gravity phenomenology. The problem of time and statistical properties of space–time*" (2007–2009).

14. Thematic Workshop DFG–CONACyT: "*Models of Gravity*", 2008.

15. Joint Mexican–German project DFG–CONACYT: "*Cold atoms in gravity and microgravity*". UAM–Iztapalapa–University of Bremen. DFG–Conacyt (2011–2012).

16. Joint Mexican–German project DFG–CONACYT: "*Dynamics of neutral and charged objects in gravitational fields coupled to non-linear electrodynamics*". UAM–Iztapalapa–University of Bremen. (2014–2016).

17. SEP–CONACyT grant: "*Ultracold gases in gravity and microgravity. Alternative approaches, time problem, and applications of computer algebra.*". (2012–2017).

13 DISTINCTIONS

1. Consejo Nacional de Ciencia y Tecnología (CONACYT). Ph.D. fellowship 1985–1988.
2. Deutscher Akademischer Austauschdienst (German Service of Academic Exchange). Sandwich program fellowship 1989–1991.
3. ICTP fellowship for the: "*Spring School and Workshop on String Theory and Quantum Gravity* (1992).
4. Membership of the *German Physical Society*, since 1991.
5. Founder president of the Gravitation and Mathematical Physics section of the Mexican Physical Society (1992–1994).
6. Referee of the international journals: *Physical Review Letters*, *Physical Review D*, *Classical and Quantum Gravity*, *Physics Letters A*, *International Journal of Modern Physics A*, *Mathematical Reviews*, *Il Nuovo Cimento*, *Gravitation & Cosmology* and *Revista Mexicana de Física*.
7. National Researchers System (SNI). *National Researcher level II*, from 1997 to 2008.
8. Membership of the *Mexican Academy of Sciences*, since 1997.
9. Membership of the Editorial Board of the *International Journal, Gravitation and Cosmology*, since 1997.

10. Member of the International Coordinating Committee of the 10^{th} *Marcel Grossmann Meeting*, Rio de Janeiro, Brazil, 2002.

11. Member of the Local Organizing Committee of the 10^{th} *Marcel Grossmann Meeting*, Rio de Janeiro, Brazil, 2003.

12. Member of the International Coordinating Organizing Committee of the 11^{th} *Marcel Grossmann Meeting*, Berlin, Germany, 2005.

13. Referee of the "Fellowships CONACYT — DAAD 2007".

14. Recognition as Outstanding Referee of the American Physical Society, 2008.

15. Referee of the "Fellowships CONACYT — DAAD 2008".

16. Invited participant to the Roadshow CONACYT — DAAD 2008.

17. National Researchers System (SNI). *National Researcher level III*, since 2009.

18. Member of the International Coordinating Organizing Committee of the 12^{th} *Marcel Grossmann Meeting*, Paris, France, 2009.

19. Membership of the Editorial Board of the *Boletin of the Mexican Physical Society* 2009/2016.

20. Referee of the " International Fellowships Bicentenario CONACYT 2010".

21. Member of the International Coordinating Organizing Committee of the 13^{th} *Marcel Grossmann Meeting*, Stockholm, Sweden, 2012.

22. Member of the Evaluation Committee of the Prize México 2013.

23. Member of the International Coordinating Organizing Committee of the 14^{th} *Marcel Grossmann Meeting*, Rom, Italy, 2015.

24. Chairman of the parelell session *Scalar Fields in Cosmology* in the 14^{th} *Marcel Grossmann Meeting*, Rom, Italy, 2015.

Alfredo Macías.