Antonio C. Gutiérrez-Piñeres

Theoretical and mathematical physics, general relativity and relativistic astrophysics

EDUCATION

Doctor of Sciences, Physics
Doctoral dissertation title: Relativistic thin disks.
Universidad Industrial de Santander, Colombia, 2009
Laureate doctoral thesis
Principal referee: PhD. Patricio A. Letelier

Master of Physics
Master thesis title: Einstein-Maxwell field stationary axially symmetric.
Universidad Industrial de Santander, Colombia, 2004
Principal referee: PhD. Luis Núñez

EMPLOYMENT

POSITIONS

Part-time teacher: Universidad Industrial de Santander (2000 - 2005)
Full time teacher: Universidad Tecnológica de Bolívar, Colombia, (2010 - Present)

Research stays: Institute of Theoretical Physics, Charles University, Prague (Czech Republic), September 2007 to March 2008

Member of the Relativity and Gravitation Research Group (GIRG, Universidad Industrial de Santander, Colombia)
Founder and Director of the Gravitation and Applied Mathematical Research Group (Universidad Tecnológica de Bolívar, Colombia)

Research work in: general relativity, exact solutions of Einstein-Maxwell equations and their physical interpretation and relativistic disk models.

Current research work: Thin disk with an exterior electromagnetized material halo in a conformastatic spacetime. Magnetized relativistic thin disks

RESEARCH EXPERIENCE

PUBLICATIONS (http://www-spires.fnal.gov/spires/find/hep/www?rawcmd=FIND+A+GUTIERREZ-PINERES)

- “An infinite family of magnetized Morgan-Morgan relativistic thin disks”
  A. C. Gutiérrez-Pineros and G. A. Gonzalez,
  Int J Theor Phys DOI 10.1007/s10773-011-1051-0

- “Electromagnetic sources distributed on shells in a Schwarzschild background”
  N. Gurlebeck, J. Bicak and A. C. Gutiérrez-Pineros
  Dedicated to Professor Goldberg’s 86th birthday,
  Gen.Rel.Grav. 43 (2011) 3301-3312
  arXiv:1105.1934 [gr-qc]

- “Monopole and dipole layers in curved spacetimes: formalism and examples”
  N. Gurlebeck, J. Bicak, A. C. Gutiérrez-Pineros.
  arXiv:1105.3840 [gr-qc]
  Phys. Rev. D83, 124023 (2011)
• “An infinite family of relativistic magnetized finite thin disks”
  A. C. Gutierrez-Pineres and G. A. Gonzalez,
  Proceedings of the 2010 Spanish Relativity Meeting (ERE2010), Granada, Spain,
  6-10 Sept 2010
  Journal of Physics: Conference Series 314 012090 (2011)

• “Counterrotating Charged Dust Disk Around a Schwarzschild Black
  Hole: New Fully Integrated Explicit Exact Solution”, Antonio C. Gutiérrez-
  Piñeres, and Guillermo A. González, Revista Colombiana de Física, 42, N2, 83
  (2011)

• “Metáforas Esenciales”, Antonio C. Gutiérrez-Piñeres, Colombian Applied
  Linguistic Journal, 13, N1, 95 (2011)

• “Relativistic static thin dust disks with an inner edge: An Infinite
  family of new exact solutions”
  G. A. Gonzalez, A. C. Gutierrez-Pineres and V. M. Vina-Cervantes
  Phys. Rev. D 79, 124048 (2009) [arXiv:0811.3869 [gr-qc]]

• “Finite axisymmetric charged dust disks in conformastatic space-
  times”
  G. A. Gonzalez, A. C. Gutierrez-Pineres and P. A. Ospina
  Phys. Rev. D 78, 064058 (2008) [arXiv:0806.4285 [gr-qc]]

• “Exact Static Axially Symmetric Thin Annular Dust Disks”
  G. A. Gonzalez, A. C. Gutierrez-Pineres and V. M. Vina-Cervantes
  AIP Conf. Proc. 1122, 284 (2009) [arXiv:0906.0990 [gr-qc]]
  Prepared for Spanish Relativity Meeting 2008: Physics and Mathematics of
  Gravitation, Salamanca, Spain, 15-19 Sep 2008

• “Finite Axisymmetric Charged Dust Disks Sources for Conformastatic
  Spacetimes”
  G. A. Gonzalez, A. C. Gutierrez-Pineres and P. A. Ospina
  AIP Conf. Proc. 1122, 280 (2009) [arXiv:0906.0978 [gr-qc]]
  Prepared for Spanish Relativity Meeting 2008: Physics and Mathematics of
  Gravitation, Salamanca, Spain, 15-19 Sep 2008

• “Relativistic static magnetized finite thin disk: An infinite family of
  exact solutions”
  A. C. Gutierrrez-Pineres and G. A. Gonzalez
  arXiv:1006.2032 [astro-ph.CO]

• “Counterrotating Charged Dust Disk Around a Schwarzschild Black
  Hole: New Fully Integrated Explicit Exact Solution”, Antonio C. Gutiérrez-
  Piñeres and Guillermo A. González , Revista Colombiana de Física, 42, N2, 83
  (2010)

• “Static Solutions Type Papapetrou of Einstein-Maxwell Equations”,
  A.C. Gutiérrez P., G. García R. and G. A. González, Revista Colombiana de
  Física, 36, N2, 240 (2004)

• “Counterrotating Dust Disk Around a Schwarzschild Black Hole:
  New Fully Integrated Explicit Exact Solution”, Guillermo A. González
  and Antonio C. Gutiérrez-Piñeres, Revista Integración 26, N2, 123 (2008)

• “A Family of Relativistic Charged Thin Disks with an Inner Edge”,
  Antonio C. Gutiérrez-Piñeres and Guillermo A. González and Viviana M. Viña-
  Cervantes, Revista Integración 27, N2, 91 (2009)

• “Magnetic solution from the Morgan-Morgan metric disk”
  A. C. Gutierrez-Pineres and G. A. Gonzalez
  arXiv:1011.3166 [gr-qc]
• “A Family of relativistic charged thin disks with an inner edge”
  A. C. Gutierrez-Pineres, G. A. Gonzalez and V. M. Vina-Cervantes
  arXiv:0906.2557 [gr-qc]

• “Counterrotating Dust Disk Around a Schwarzschild Black Hole: New Fully Integrated Explicit Exact Solution”
  G. A. Gonzalez and A. C. Gutierrez-Pineres
  arXiv:0811.3002 [gr-qc]

INTERNATIONAL MEETINGS

• Campos de Einstein-Maxwell Estacionarios Axialmente Simétricos. Antonio Gutiérrez-Piñeres and G. A. Gonzalez. VIII ESCUELA LA HECHICERA DE RELATIVIDAD, CAMPOS Y ASTROFÍSICA. Merida, Venezuela, 2002

• Charged and magnetized Kerr-NUT Solution. Antonio Gutiérrez-Piñeres, G. García R. and G. A. González. PRIMER ENCUENTRO COLOMBO-VENEZOLANO DE RELATIVIDAD Y GRAVITACIÓN. Cartagena, Colombia, 2005

• Discos Deltados Relativistas con Potencial Electromagnético Discontinuo. Antonio Gutiérrez-Piñeres and G. A. González. TERCER TALLER DE GRAVITACIÓN Y ASTROFÍSICA RELATIVISTA. Isla de Coche, Venezuela, 2006

• Modelos de Discos Deltados Finitos Conformastatics con Campo Eléctrico. Paolo Ospina, Antonio Gutiérrez-Piñeres and G. A. González. SEGUNDO ENCUENTRO COLOMBO-VENEZOLANO DE RELATIVIDAD Y GRAVITACIÓN. Armenia, Colombia, 2007

• Charged Finite Thin Disks and Their Counter-Rotating Interpretation. Antonio Gutiérrez-Piñeres and G. A. González. SEMINÁR ÚSTAVU TEORETICKÉ FYZIKY, CHARLES UNIVERSITY. Prague, Czech Republic, 2007

• Finite Axisymmetric Charged Dust Disks Sources for Conformastatic Space-times. Guillermo A. González V, Antonio C. Gutiérrez-Piñeres and Paolo A. Ospina SPANISH RELATIVISTIC MEETING. Salamanca, España, 2008

• Exact Static Axially Symmetric Thin Annular Dust Disks. Guillermo A. González V, Antonio C. Gutiérrez-Piñeres and Viviana M. Viña-Cervantes SPANISH RELATIVISTIC MEETING. Salamanca, España, 2008

• Electrovacuum Static Axially Symmetric Thin Annular Dust Disks. Viviana M. Viña-Cervantes, Antonio C. Gutiérrez-Piñeres and Guillermo A. González V. LI CONGRESO NACIONAL DE FÍSICA, II CONGRESO LATINOAMERICANO DE FÍSICA. Zacatecas, México, 2008

• Relativistic static magnetized finite thin disks: An infinite family of exact solutions, Antonio C. Gutiérrez-Piñeres and Guillermo A. González V. TERCERA REUNIÓN COLOMBO-VENEZOLANA DE RELATIVIDAD, CAMPOS Y ASTROFÍSICA. Curití-Santander, Colombia, 2010

• An infinite family of new exact solutions: Charged relativistic annular static thin disks around a central black hole Antonio C. Gutiérrez-Piñeres and Guillermo A. González V. GRAV11. CÓRDOBA, ARGENTINA, 2011

• Modelos relativistas de discos de polvo axialmente simétricos en presencia de un halo con campo magnético Diego A. Ballén-Daza, Guillermo A. González and Antonio C. Gutiérrez-Piñeres XXVI CONGRESO NACIONAL DE FÍSICA. BOGOTÁ, COLOMBIA, 2011

• On the continuity of the electromagnetic potential through static relativistic thin discs Antonio C. Gutiérrez-Piñeres, Guillermo A. González and Cinthia V. Chaparro-Olaya XXVI CONGRESO NACIONAL DE FÍSICA. BOGOTÁ, COLOMBIA, 2011
SUPERVISED DIPLOMA THESES

- *Construcción de Modelos Relativistas de Discos Delgados Mediante Soluciones Conformestáticas de las Ecuaciones de Einstein-Maxwell*, Paolo Andrés Ospina Henao. Escuela de Física, Universidad Industrial de Santander. Bucaramanga, Col. 2008

- *Discos Delgados Relativistas de Polvo con un Borde Interno Central*, Viviana M. Viña Cervantes. Escuela de Física, Universidad Industrial de Santander. Bucaramanga, Col. 2008

AWARDS AND SCHOLARSHIPS

- Laureate doctoral thesis (Universidad Industrial de Santander, 2009)
- COLCIENCIAS Scholarship 2004: Enhancement of Colombian Scientific Community through National Doctorate Programs

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