

Quevedo Hernando

Position: Full Professor - National Autonomous University of Mexico
Period covered: 2017



I Scientific Work

Topics:

- Exterior and interior solutions of Einstein's equations and applications in relativistic astrophysics.
- The physics of naked singularities.
- Geometrothermodynamics of black holes.
- Applications of geometrothermodynamics in cosmology.
- Topological quantization of classical field theories.

II Conferences and educational activities

II a Conferences and Other External Scientific Work

- Conference: "V Workshop on Gravitation and Cosmology", talk: Geometrothermodynamics, ten years later, Cuernavaca (Mexico), August 2017.
- Research stay at the University of Costa Rica, topic: Relativistic Astrophysics, February 2017.
- Research stay at the National University of Kazakhstan, topic: Geometrothermodynamics and Relativistic Astrophysics, March 2017.
- Research stay at the National University of Colombia, topic: Relativistic Astrophysics, November 2017.
- Course: Relativistic Cosmology, National Autonomous University of Mexico, August-December, 2017.

II b Work With Students

II c Diploma thesis supervision

- Viridiana Pineda (PhD)
Topic: Microscopic models for black holes
- Daniel Flores (PhD)
Topic: Topological quantization of minisuperspaces
- Pedro Sánchez (PhD)
Topic: Geometrothermodynamics in relativistic astrophysics
- Juan José Vega (PhD)
Topic: Topological quantization of mechanical systems
- Raúl Meléndez (MSc)
Topic: Relativistic geometrothermodynamics
- Andrés Solís (MSc)
Topic: Matching conditions in general relativity

II d Other Teaching Duties

II e. Work With Postdocs

- Christine Gruber, UNAM
- Francisco L. Escamilla, UNAM
- Alessandro Bravetti, UNAM
- Saken Toktarbay, KazNU

III. Service activities [*activities carried out in collaboration with ICRAANet (e.g. teaching activities, conferences etc...) and outside ICRAANet (teaching activities in your university etc...)*]

III a. *Within ICRAANet*

III b. *Outside ICRAANet*

Course: Relativistic Cosmology - UNAM

IV. Other

2017 List of Publications

TOPOLOGICAL QUANTUM NUMBERS OF DYONIC FIELDS OVER TAUB-NUT AND TAUB-BOLT SPACES

Flores-Alfonso, Daniel; Quevedo, Hernando

JOURNAL OF GEOMETRY AND SYMMETRY IN PHYSICS, **44**: 39-54 (2017).

DOI: 10.7546/jgsp-44-2017-39-54

I-LOVE-Q RELATIONS FOR WHITE DWARF STARS

Boshkayev, K.; Quevedo, H.; Zhami, B.

MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, **464**: 4349-4359 (2017).

DOI:10.1093/mnras/stw2614

HOMOGENEITY AND THERMODYNAMIC IDENTITIES IN GEOMETROTHERMODYNAMICS

Quevedo, Hernando; Quevedo, Maria N.; Sanchez, Alberto

EUROPEAN PHYSICAL JOURNAL C **77**: 158 (2017).

DOI 10.1140/epjc/s10052-017-4739-3

GENERAL CLASSIFICATION OF CHARGED TEST PARTICLE CIRCULAR ORBITS IN REISSNER-NORDSTROM SPACETIME

Pugliese, D.; Quevedo, H.; Ruffini, R.

EUROPEAN PHYSICAL JOURNAL C **77**: 206 (2017).

DOI 10.1140/epjc/s10052-017-4769-x

GEOMETROTHERMODYNAMIC MODEL FOR THE EVOLUTION OF THE UNIVERSE

Gruber, Christine; Quevedo, Hernando

JOURNAL OF COSMOLOGY AND ASTROPARTICLE PHYSICS **7**: 032 (2017).

Doi.org/10.1088/1475-7516/2017/07/032

EINSTEIN EQUATIONS WITH FLUCTUATING VOLUME

Dzhunushaliev, Vladimir; Quevedo, Hernando

GRAVITATION & COSMOLOGY, **23**: 280-286 (2017).

DOI:10.1134/S0202289317030033