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Education Information

Doctorate, Istanbul Technical University, Fen-Edebiyat Fakültesi, Fizik Mühendisliği Bölümü, Turkey 2002 - 2008

Postgraduate, Istanbul Technical University, Fen Bilimleri Enstitüsü, Fizik Mühendisliği (YI) (Tezli), Turkey 1999 - 2002

Undergraduate, Istanbul Technical University, Fen-Edebiyat Fakültesi, Fizik Mühendisliği Bölümü, Turkey 1994 - 1999

Dissertations

Doctorate, A study of wave equations in five dimensional spacetimes with computational methods, İstanbul Teknik Üniversitesi, Fen-Edebiyat Fakültesi, Fizik Mühendisliği Bölümü, 2008

Postgraduate, Üç boyutlu anti-de sitter uzayında Einstein denklemlerinin skaler alan varlığında çözümleri, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Fizik Mühendisliği (YI) (Tezli), 2002

Research Areas

Basic Sciences, Physics, General Physics, Mathematical Methods in Physics, Basic Particles and Areas, General Theory of Particles and Fields

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **A massless scalar particle coupled to the Wahlquist metric**
Birkandan T., Hortaçsu M.
European Physical Journal C, vol.81, no.5, 2021 (Journal Indexed in SCI Expanded)
- II. **Three-dimensional DKP oscillator in a curved Snyder space**
Hamil B., Merad M., Birkandan T.
International Journal of Modern Physics A, vol.36, 2021 (Journal Indexed in SCI)
- III. **Particle creation in the context of the emergent universe**
Hamil B., Merad M., Birkandan T.
REVISTA MEXICANA DE FISICA, vol.67, no.2, pp.219-225, 2021 (Journal Indexed in SCI)
- IV. **Effects of extended uncertainty principle on the relativistic Coulomb potential**
Hamil B., Merad M., Birkandan T.
INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.36, no.3, 2021 (Journal Indexed in SCI)
- V. **Bound-state solutions of the two-dimensional Dirac equation with Aharonov-Bohm-Coulomb interaction in the presence of extended uncertainty principle**
Hamil B., Merad M., Birkandan T.
PHYSICA SCRIPTA, vol.95, 2020 (Journal Indexed in SCI)

- VI. **The Effects of the Modified (Anti-)Snyder Model on the Thermodynamic Properties of an Ideal Gas**
 Hamil B., Merad M., Birkandan T.
 INTERNATIONAL JOURNAL OF THERMOPHYSICS, vol.41, 2020 (Journal Indexed in SCI)
- VII. **The Duffin-Kemmer-Petiau oscillator in the presence of minimal uncertainty in momentum**
 Hamil B., Merad M., Birkandan T.
 PHYSICA SCRIPTA, vol.95, 2020 (Journal Indexed in SCI)
- VIII. **Pair creation in curved Snyder space**
 Hamil B., Merad M., Birkandan T.
 INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.35, 2020 (Journal Indexed in SCI)
- IX. **Relativistic oscillators in new type of the extended uncertainty principle**
 Merad A., Aouachria M., Merad M., Birkandan T.
 INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.34, no.32, 2019 (Journal Indexed in SCI)
- X. **Applications of the extended uncertainty principle in AdS and dS spaces**
 Hamil B., Merad M., Birkandan T.
 European Physical Journal Plus, vol.134, no.6, 2019 (Journal Indexed in SCI Expanded)
- XI. **Symbolic and numerical analysis in general relativity with open source computer algebra systems**
 Birkandan T., GÜZELGÜN C., ŞİRİN E., USLU M. C.
 GENERAL RELATIVITY AND GRAVITATION, vol.51, no.1, 2019 (Journal Indexed in SCI)
- XII. **The zero mass limit of Kerr and Kerr-(anti-)de-Sitter space-times: exact solutions and wormholes**
 Birkandan T., Hortacsu M.
 GENERAL RELATIVITY AND GRAVITATION, vol.50, no.3, 2018 (Journal Indexed in SCI)
- XIII. **Singular inverse square potential in coordinate space with a minimal length**
 BOUAZIZ D., Birkandan T.
 ANNALS OF PHYSICS, vol.387, pp.62-74, 2017 (Journal Indexed in SCI)
- XIV. **Heun-type solutions for Schwarzschild metric with electromagnetic fields**
 Birkandan T., Hortacsu M.
 EPL, vol.119, no.2, 2017 (Journal Indexed in SCI)
- XV. **Energy-dependent harmonic oscillator in noncommutative space**
 BENCHIKHA A., MERAD M., Birkandan T.
 MODERN PHYSICS LETTERS A, vol.32, no.20, 2017 (Journal Indexed in SCI)
- XVI. **Duffin-Kemmer-Petiau oscillator with Snyder-de Sitter algebra**
 FALEK M., MERAD M., Birkandan T.
 JOURNAL OF MATHEMATICAL PHYSICS, vol.58, no.2, 2017 (Journal Indexed in SCI)
- XVII. **Quantum field theory applications of heun type functions**
 Birkandan T., Hortacsu M.
 Reports on Mathematical Physics, vol.79, no.1, pp.81-87, 2017 (Journal Indexed in SCI Expanded)
- XVIII. **An analysis of the wave equation for the U(1)(2) gauged supergravity black hole**
 Birkandan T., CVETIC M.
 CLASSICAL AND QUANTUM GRAVITY, vol.32, no.8, 2015 (Journal Indexed in SCI)
- XIX. **Wave equation for the Wu black hole**
 Birkandan T., CVETIC M.
 JOURNAL OF HIGH ENERGY PHYSICS, no.9, 2014 (Journal Indexed in SCI)
- XX. **Addendum to: Conformal invariance and near-extreme rotating AdS black holes**
 Birkandan T., Cvetic M.
 PHYSICAL REVIEW D, vol.90, no.6, 2014 (Journal Indexed in SCI)
- XXI. **Conformal invariance and near-extreme rotating AdS black holes**
 Birkandan T., Cvetic M.
 PHYSICAL REVIEW D, vol.84, no.4, 2011 (Journal Indexed in SCI)
- XXII. **A Newman-Penrose calculator for instanton metrics**
 Birkandan T.
 INTERNATIONAL JOURNAL OF MODERN PHYSICS C, vol.19, no.8, pp.1277-1290, 2008 (Journal Indexed in SCI)

- XXIII. **Comment on "Dirac equation in the background of the Nutku helicoid metric" [J. Math. Phys. 48, 092301 (2007)]**
Birkandan T., Hortacsu M.
JOURNAL OF MATHEMATICAL PHYSICS, vol.49, no.5, 2008 (Journal Indexed in SCI)
- XXIV. **Dirac equation in the background of the Nutku helicoid metric**
Birkandan T., HORTACSU M.
JOURNAL OF MATHEMATICAL PHYSICS, vol.48, no.9, 2007 (Journal Indexed in SCI)
- XXV. **Examples of Heun and Mathieu functions as solutions of wave equations in curved spaces**
Birkandan T., HORTACSU M.
JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL, vol.40, no.5, pp.1105-1116, 2007 (Journal Indexed in SCI)
- XXVI. **Three dimensional gravity in the presence of scalar fields**
Birkandan T., HORTACSU M.
GENERAL RELATIVITY AND GRAVITATION, vol.35, no.3, pp.457-466, 2003 (Journal Indexed in SCI)

Refereed Congress / Symposium Publications in Proceedings

- I. **Computations of general Heun functions from their integral series representations**
Birkandan T., Giscard P. L., Tamar A.
Days on Diffraction 2021, Sankt-Peterburg, Russia, 31 May - 04 June 2021, pp.12-18
- II. **Specific form of the wave equation for nonextremal black holes**
BIRKANDAN T., CVETIC M.
The Fourteenth Marcel Grossmann Meeting, University of Rome "La Sapienza", Italy, Italy, 12 - 18 July 2015
- III. **Physical problems admitting Heun-to-hypergeometric reduction**
AYDINER P., Birkandan T.
International Conference Days on Diffraction, St Petersburg, Russia, 25 - 29 May 2015, pp.27-32
- IV. **EXAMPLES OF HEUN AND MATHIEU FUNCTIONS AS SOLUTIONS OF WAVE EQUATIONS IN CURVED SPACES**
Birkandan T., Hortacsu M.
30th Spanish Relativity Conference, Tenerife, Spain, 10 - 14 September 2007, vol.30, pp.265-268

Supported Projects

Birkandan T., Project Supported by Higher Education Institutions, EKSTREMAL OLMAYAN KARA DELİKLERDE DENKLEMİNİN ÖZEL DURUMU, 2015 - 2018

Birkandan T., Project Supported by Higher Education Institutions, Heun'dan Hipergeometriğe İndirgenme Durumlarını İçeren Fiziksel Problemler, 2015 - 2018

Birkandan T., Project Supported by Higher Education Institutions, Hesaplamalı Yöntemlerle genel Görellik ve Kuantum Alan Kuramı Uygulamaları, 2013 - 2015

Scientific Refereeing

Open Physics, SCI Journal, August 2017

Open Physics, SCI Journal, September 2016

Dokuz Eylül Üniversitesi Fen ve Mühendislik Dergisi, National Scientific Refreed Journal, August 2016

Open Physics, SCI Journal, November 2015

Advances in Mathematics, SCI Journal, June 2013

Central European Journal of Physics, SCI Journal, January 2012

Europhysics Letters (EPL), SCI Journal, November 2011
Journal of Mathematical Physics, SCI Journal, March 2008

Citations

Total Citations (WOS):128

h-index (WOS):7