

Prof. ÖZLEM YEŞİLTAŞ

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International Researcher IDs

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Publons / Web Of Science ResearcherID: A-6733-2010

ScopusID: 23053561100

Yoksis Researcher ID: 134462

Education Information

Doctorate, Gazi University, Fen Bilimleri Enstitüsü, Fizik (Dr), Turkey 1999 - 2004

Postgraduate, Gazi University, Fen Bilimleri Enstitüsü, Fizik (Yl) (Tezli), Turkey 1996 - 1999

Undergraduate, Gazi University, Fen-Edebiyat Fakültesi, Fizik Pr., Turkey 1992 - 1996

Foreign Languages

English, B2 Upper Intermediate

Research Areas

Mathematics, Physics, Natural Sciences

Academic Titles / Tasks

Professor, Gazi University, Fen Fakültesi, Fizik, 2018 - Continues

Associate Professor, Gazi University, Fen Fakültesi, Fizik Bölümü, 2012 - 2018

Assistant Professor, Gazi University, Fen Fakültesi, Fizik Bölümü, 2007 - 2012

Research Assistant, Gazi University, Fen Fakültesi, Fizik Bölümü, 1997 - 2005

Academic and Administrative Experience

Gazi University, Fen Fakültesi, 2016 - 2017

Deputy Head of Department, Gazi University, Fen Fakültesi, 2014 - 2017

Courses

Mathematical Methods in Physics, Postgraduate, 2020 - 2021

General Relativity, Postgraduate, 2020 - 2021
İleri Kuantum Mekaniği 2, Doctorate, 2017 - 2018
5011302 İLERİ KUANTUM MEKANIĞI I, Postgraduate, 2017 - 2018
İleri Kuantum Mekaniği, Postgraduate, 2016 - 2017
Physics I, Undergraduate, 2016 - 2017

Advising Theses

YEŞİLTAŞ Ö., Dirac Equations In Curvilinear Coordinates In (2+1) Dimensions, Postgraduate, A.YILMAZ(Student), 2018
YEŞİLTAŞ Ö., Einsteins Field Equations Solutions, Postgraduate, G.GÜZEL(Student), 2018
YEŞİLTAŞ Ö., Graphene Models In Relativistic Quantum Mechanics, Postgraduate, K.DURMUŞ(Student), 2015
YEŞİLTAŞ Ö., Hermitian and non-hermitian operators, Postgraduate, N.KAPLAN(Student), 2013
YEŞİLTAŞ Ö., The applications and the theory of quantum Hamiltonen Jacobi, Postgraduate, A.FERHAT(Student), 2009

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Strain effects on the electronic properties of a graphene wormhole**
Yeşiltaş Ö.
EUROPEAN PHYSICAL JOURNAL PLUS, vol.139, pp.1-16, 2024 (SCI-Expanded)
- II. **Pseudo-supersymmetric approach to the Dirac operator in the Schwarzschild spacetime**
Yeşiltaş Ö.
CLASSICAL AND QUANTUM GRAVITY, vol.41, no.16, pp.165003-165024, 2024 (SCI-Expanded)
- III. **The Black-Scholes equation in finance: Quantum mechanical approaches**
YEŞİLTAŞ Ö.
PHYSICA A-STATISTICAL MECHANICS AND ITS APPLICATIONS, vol.623, 2023 (SCI-Expanded)
- IV. **The Dirac equation with $\{\mathscr{P}\}\{\mathscr{T}\}$ /non- $\{\mathscr{P}\}\{\mathscr{T}\}$ -symmetric potentials in curved spacetime backgrounds**
Yeşiltaş Ö.
PHYSICA SCRIPTA, vol.98, no. 075219, pp.1-15, 2023 (SCI-Expanded)
- V. **Pseudo-Hermitian Dirac operator on the torus for massless fermions under the action of external fields**
YEŞİLTAŞ Ö., Furtado J.
International Journal of Modern Physics A, vol.37, no.11-12, 2022 (SCI-Expanded)
- VI. **Dirac equation on a catenoid bridge: a supersymmetric approach**
YEŞİLTAŞ Ö., Furtado J., Silva J.
European Physical Journal Plus, vol.137, no.4, 2022 (SCI-Expanded)
- VII. **Spin and pseudospin symmetries in radial Dirac equation and exceptional hermite polynomials**
YEŞİLTAŞ Ö., ÖZCAN A.
European Physical Journal Plus, vol.136, no.10, 2021 (SCI-Expanded)
- VIII. **The Extension of the Massless Fermion Behaviour in the Cosmic String Spacetime**
Cagatay B., YEŞİLTAŞ Ö., Aygun A. L.
ADVANCES IN HIGH ENERGY PHYSICS, vol.2020, 2020 (SCI-Expanded)
- IX. **Second-order confluent supersymmetric approach to the Dirac equation in the cosmic string spacetime**
YEŞİLTAŞ Ö.
EUROPEAN PHYSICAL JOURNAL PLUS, vol.135, no.2, 2020 (SCI-Expanded)
- X. **Dirac equation in the curved spacetime and generalized uncertainty principle: A fundamental quantum mechanical approach with energy-dependent potentials**
YEŞİLTAŞ Ö.

- EUROPEAN PHYSICAL JOURNAL PLUS, vol.134, no.7, 2019 (SCI-Expanded)
- XI. **Generalized Schrodinger equations with energy-dependent potentials: Formalism and applications**
Schulze-Halberg A., YEŞİLTAŞ Ö.
JOURNAL OF MATHEMATICAL PHYSICS, vol.59, no.11, 2018 (SCI-Expanded)
- XII. **The massless Dirac-Weyl equation with deformed extended complex potentials**
YEŞİLTAŞ Ö., Cagatay B.
CANADIAN JOURNAL OF PHYSICS, vol.96, no.7, pp.770-773, 2018 (SCI-Expanded)
- XIII. **The generalized confluent supersymmetry algorithm: Representations and integral formulas**
Schulze-Halberg A., YEŞİLTAŞ Ö.
JOURNAL OF MATHEMATICAL PHYSICS, vol.59, no.4, 2018 (SCI-Expanded)
- XIV. **Rationally extended potentials and X-m-Jacobi-type solutions of the two-dimensional massless Dirac equation**
Schulze-Halberg A., YEŞİLTAŞ Ö.
EUROPEAN PHYSICAL JOURNAL PLUS, vol.133, no.1, 2018 (SCI-Expanded)
- XV. **Dirac Equation on the Torus and Rationally Extended Trigonometric Potentials within Supersymmetric QM**
YEŞİLTAŞ Ö.
ADVANCES IN HIGH ENERGY PHYSICS, vol.2018, 2018 (SCI-Expanded)
- XVI. **Position-dependent mass approach and quantization for a torus Lagrangian**
YEŞİLTAŞ Ö.
EUROPEAN PHYSICAL JOURNAL PLUS, vol.131, no.9, 2016 (SCI-Expanded)
- XVII. **SU(1,1) solutions for the relativistic quantum particle in cosmic string spacetime**
Yesiltas Ö.
EUROPEAN PHYSICAL JOURNAL PLUS, vol.130, no.7, 2015 (SCI-Expanded)
- XVIII. **Non-Hermitian Dirac Hamiltonian in Three-Dimensional Gravity and Pseudosupersymmetry**
YEŞİLTAŞ Ö.
ADVANCES IN HIGH ENERGY PHYSICS, vol.2015, 2015 (SCI-Expanded)
- XIX. **Supersymmetric analysis of the Dirac-Weyl operator within PT symmetry**
Yesiltas Ö.
JOURNAL OF MATHEMATICAL PHYSICS, vol.55, no.8, 2014 (SCI-Expanded)
- XX. **Exact Solutions of the Dirac Hamiltonian on the Sphere under Hyperbolic Magnetic Fields**
Yesiltas Ö.
ADVANCES IN HIGH ENERGY PHYSICS, vol.2014, 2014 (SCI-Expanded)
- XXI. **CPT symmetry in honeycomb lattices and quantum brachistochrone problem**
Yesiltas Ö.
CENTRAL EUROPEAN JOURNAL OF PHYSICS, vol.11, no.12, pp.1674-1679, 2013 (SCI-Expanded)
- XXII. **Metric operator for the non-Hermitian Hamiltonian model and pseudo-super-symmetry**
YEŞİLTAŞ Ö., Kaplan N.
PHYSICA SCRIPTA, vol.87, no.4, 2013 (SCI-Expanded)
- XXIII. **PT symmetric Hamiltonian model and Dirac equation in 1+1 dimensions**
Yesiltas Ö.
JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL, vol.46, no.1, 2013 (SCI-Expanded)
- XXIV. **su(1,1) similar or equal to so(2,1) Lie algebraic extensions of the Mie-type interactions with positive constant curvature**
Yesiltas Ö.
PHYSICS LETTERS A, vol.377, pp.49-52, 2012 (SCI-Expanded)
- XXV. **Quantum isotonic nonlinear oscillator as a Hermitian counterpart of Swanson Hamiltonian and pseudo-supersymmetry**
Yesiltas Ö.
JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL, vol.44, no.30, 2011 (SCI-Expanded)
- XXVI. **Study of the Generalized Quantum Isotonic Nonlinear Oscillator Potential**

- Saad N., Hall R. L., ÇİFTÇİ H., YEŞİLTAŞ Ö.
ADVANCES IN MATHEMATICAL PHYSICS, vol.2011, 2011 (SCI-Expanded)
- XXVII. **Generalized quantum isotonic nonlinear oscillator in d dimensions**
Hall R. L., Saad N., YEŞİLTAŞ Ö.
JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL, vol.43, no.46, 2010 (SCI-Expanded)
- XXVIII. **SUPERSYMMETRIC ANALYSIS FOR THE DIRAC EQUATION WITH SPIN-SYMMETRIC AND PSEUDO-SPIN-SYMMETRIC INTERACTIONS**
Hall R. L., Yesiltas Ö.
INTERNATIONAL JOURNAL OF MODERN PHYSICS E-NUCLEAR PHYSICS, vol.19, no.10, pp.1923-1934, 2010 (SCI-Expanded)
- XXIX. **Comparison theorems for the Dirac equation with spin-symmetric and pseudo-spin-symmetric interactions**
Hall R. L., Yesiltas Ö.
JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL, vol.43, no.19, 2010 (SCI-Expanded)
- XXX. **The quantum effective mass Hamilton-Jacobi problem**
Yesiltas Ö.
JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL, vol.43, no.9, 2010 (SCI-Expanded)
- XXXI. **Factorization and Lie point symmetries of general Lienard-type equation in the complex plane**
Yesiltas Ö.
PHYSICA SCRIPTA, vol.80, no.5, 2009 (SCI-Expanded)
- XXXII. **Exact solution of effective mass Schrodinger equation for the Hulthen potential**
Sever R., TEZCAN C., Yesiltas Ö., Bucurgat M.
INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS, no.9, pp.2243-2248, 2008 (SCI-Expanded)
- XXXIII. **Solutions of two-mode bosonic and transformed Hamiltonians**
Ocak S., Yesiltas Ö., Demircioglu B.
INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS, vol.47, no.7, pp.1865-1876, 2008 (SCI-Expanded)
- XXXIV. **Quantum Hamilton-Jacobi approach to two dimensional singular oscillator**
Yesiltas Ö., Demircioglu B.
CHINESE PHYSICS LETTERS, vol.25, no.6, pp.1935-1938, 2008 (SCI-Expanded)
- XXXV. **A new approach to the exact solutions of the effective mass Schrodinger equation**
TEZCAN C., Sever R., Yesiltas Ö.
INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS, vol.47, no.6, pp.1713-1721, 2008 (SCI-Expanded)
- XXXVI. **Solutions of three-dimensional separable non-central potential**
Yesiltas Ö.
CHINESE PHYSICS LETTERS, vol.25, no.4, pp.1172-1174, 2008 (SCI-Expanded)
- XXXVII. **Exponential type complex and non-Hermitian potentials within quantum Hamilton-Jacobi formalism**
Yesiltas Ö., Sever R.
JOURNAL OF MATHEMATICAL CHEMISTRY, vol.43, no.3, pp.921-931, 2008 (SCI-Expanded)
- XXXVIII. **The generalized PT-symmetric Sinh-Gordon potential solvable within quantum Hamilton-Jacobi formalism**
YEŞİLTAŞ Ö., Ocak S.
INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS, vol.47, no.2, pp.415-420, 2008 (SCI-Expanded)
- XXXIX. **Exact solution of Schrodinger equation for Pseudoharmonic potential**
Sever R., TEZCAN C., Aktas M., Yesiltas Ö.
JOURNAL OF MATHEMATICAL CHEMISTRY, vol.43, no.2, pp.845-851, 2008 (SCI-Expanded)
- XL. **Bound state solution of the Schrodinger equation for Mie potential**
Sever R., Bucurgat M., Tezcan C., Yesiltas Ö.
JOURNAL OF MATHEMATICAL CHEMISTRY, no.2, pp.749-755, 2008 (SCI-Expanded)
- XLI. **PT/non-PT symmetric and non-Hermitian Poschl-Teller-like solvable potentials via Nikiforov-Uvarov method**
Yesiltas Ö.

PHYSICA SCRIPTA, vol.75, no.1, pp.41-46, 2007 (SCI-Expanded)

- XLII. **Exponential type complex and non-Hermitian potentials in PT-symmetric quantum mechanics**
Yeşiltas Ö., Simsek M., Sever R., Tezcan C.
PHYSICA SCRIPTA, vol.67, no.6, pp.472-475, 2003 (SCI-Expanded)

Articles Published in Other Journals

- I. **Non PT Symmetric Potentials and 1 1 Dirac Equation**
YEŞİLTAS Ö.
Gazi University Journal of Science, vol.28, no.4, pp.571-575, 2015 (Scopus)
- II. **Non-PT Symmetric Potentials and (1**
YEŞİLTAS Ö.
GAZI UNIVERSITY JOURNAL OF SCIENCE, vol.28, no.4, pp.571-575, 2015 (ESCI)
- III. **Multiple Scale and Hamilton Jacobi Analysis of Extended Mathieu Equation**
YEŞİLTAS Ö., ŞİMŞEK M.
Turkish Journal of Physics, 2005 (Scopus)
- IV. **Geometrik Sınır Değer Problemi ve Korteweg de Vries Denklemi**
YEŞİLTAS Ö., ŞİMŞEK M.
Süleyman Demirel Üniversitesi Fen Bilimleri Dergisi, 2002 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

- I. **su(2) and su(1,1) operators within N=2 supersymmetry**
Yeşiltas Ö.
Approximation Theory and Special Functions ATSF 2024 Conference - 8th Series, Ankara, Turkey, 4 - 07 September 2024
- II. **Pseudo-Hermitian Dirac Operator On the Torus For The Massless Fermions**
Yeşiltas Ö.
Pseudo-Hermitian Hamiltonians in Quantum Physics, 01 January 2021
- III. **N = 2 Supersymmetric Quantum Mechanics Algebra And Cosmic Strings**
YEŞİLTAS Ö.
Analytic and algebraic methods in physics XVI September 10 - 13, 2019, Prague Czech Technical University Prague, Prag, Czech Republic, 10 - 13 September 2019
- IV. **Kuantum Mekaniğinde Yüksek Mertebeden Süpersimetrik Yaklaşımlar ve Darboux Dönüşümleri**
Yeşiltas Ö.
14. Ankara Matematik Günleri, Ankara, Turkey, 28 - 29 June 2019
- V. **Higher Order Supersymmetric Models in Quantum Mechanics**
YEŞİLTAS Ö.
2nd EMU Physics Days, famagusta, 21 - 22 March 2019
- VI. **2 1 boyutta Dirac Denklemi ve Kanonik Nokta Dönüşümleri**
durmuş k, YEŞİLTAS Ö.
Yoğun Madde Fiziği – Ankara Toplantısı, Bilkent Üniversitesi, 20 Aralık 2013, Ankara, Turkey, 20 - 22 December 2013
- VII. **2 1 Boyutta Dirac Denkliminin Süper simetrik Kuantum Mekaniği Yöntemleri ile İncelenmesi**
nayı ş, YEŞİLTAS Ö.
Yoğun Madde Fiziği – Ankara Toplantısı, Bilkent Üniversitesi, 20 Aralık 2013 P35, Turkey, 20 - 22 December 2013
- VIII. **Electron Moving in Curved Graphene**
YEŞİLTAS Ö.
Türk Fizik Derneği 30. Uluslararası Fizik Kongresi, İstanbul, Eylül 2013, İstanbul, Turkey, 2 - 05 September 2013

IX. PT Symmetric Hamiltonian Model and Exactly Solvable Potentials

Yesiltas Ö.

1st International Conference on Mathematical Modelling in Physical Sciences (IC-MSQUARE), Budapest, Hungary, 3 - 07 September 2012, vol.410

X. İndirgenmiş Van Der Pol Osilatörünün Çoklu Birim Analizi İle Çözümleri

YEŞİLTAŞ Ö., ŞİMŞEK M.

Türk Fizik Derneği 22. Fizik Kongresi Bodrum, Turkey, 13 - 15 September 2004

XI. Geometrik Sınır Değer Problemi ve Korteweg de Vries Denklemi

YEŞİLTAŞ Ö., ŞİMŞEK M.

Türk Fizik Derneği 21. Fizik Kongresi Isparta, Turkey, 11 - 14 September 2002

Metrics

Publication: 57

Citation (WoS): 407

Citation (Scopus): 434

H-Index (WoS): 12

H-Index (Scopus): 12

Congress and Symposium Activities

virtual seminar series on Pseudo-Hermitian Hamiltonians in Quantum Physics, Invited Speaker, Ankara, Turkey, 2021

Non Academic Experience

Hungarian Academy of Sciences Institute for Nuclear Research ATOMKI

Concordia University, Department of Mathematics and Statistics

7th Workshop on Quantum Physics with Non-Hermitian Operators (PHHQP VII)

Gazi Ü. FEF Fizik Bölümü

Türkiye Atom enerjisi Kurumu

Culham

Gazi Ü. FEF Fizik Bölümü