

Prof. COŞKUN AYDIN

Personal Information

Office Phone: [+90 462 377 2551](tel:+904623772551)

Email: coskun@ktu.edu.tr

Web: <https://avesis.ktu.edu.tr//coskun>

Address: KTÜ Fizik Bölümü 61080 Trabzon

International Researcher IDs

ORCID: 0000-0002-6351-0740

Yoksis Researcher ID: 151957

Education Information

Doctorate, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Turkey 1982 - 1989

Postgraduate, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Turkey 1980 - 1982

Undergraduate, Karadeniz Technical University, Temel Bilimler Fakültesi, Fizik Mühendisliği, Turkey 1976 - 1980

Foreign Languages

English, B1 Intermediate

Dissertations

Doctorate, AYAR ALAN KURAMLARINDA LEPTONLARIN YAPI ÇARPANLARI, Karadeniz Technical University, Fen Bilimleri, Fizik, 1989

Research Areas

Physics, Basic Particles and Areas, Special theories and interaction models, particle systematics, Natural Sciences

Academic Titles / Tasks

Professor, Karadeniz Technical University, Fizik, 2023 - Continues

Academic and Administrative Experience

Head of Department, Karadeniz Technical University, Fen Fakültesi, Fizik, 2023 - 2026

Head of Department, Karadeniz Technical University, 2018 - 2021

Courses

Temel Tanecik Fiziği, Undergraduate, 2022 - 2023
Akışkanlar Mekaniği, Undergraduate, 2022 - 2023
Elektromagnetik Teori-II, Doctorate, 2022 - 2023
Fizik, Undergraduate, 2022 - 2023
Fizikte Matematik Yöntemler-I, Undergraduate, 2022 - 2023
Temel Fizik, Undergraduate, 2022 - 2023
Fizik II, Undergraduate, 2017 - 2018
Fizikte Mat. Yönt.II, Undergraduate, 2017 - 2018
Fizik_II, Undergraduate, 2017 - 2018
Teorik Mekanik, Undergraduate, 2017 - 2018
Fizik I, Undergraduate, 2017 - 2018

Advising Theses

Aydın C., PROTON-PROTON, PROTON-KARŞITPROTON ÇARPIŞMA SÜREÇLERİNDE TEK (RHO) ve ÇİFT (RHO ya da PİON) MEZONUN İNKLUSİF YARATILMASINDA YÜKSEK-TİVİST KATKILAR, Doctorate, O.UZUN(Student), 2023
AYDIN C., Elektron-pozitron Çarpışmasından Hadron Üretilmesi, Postgraduate, S.Sarı(Student), 2013
AYDIN C., Proton-proton ve Foton-foton İnküsiiv saçılma Süreçlerinde Kızılötesi Renormalonlar ve Yüksek Tivist Katkıları, Doctorate, F.Keskin(Student), 2012
AYDIN C., Üç-nokta KRD Toplama Kurallarının Hadron Fiziğine Uygulaması, Doctorate, M.Bayar(Student), 2007
AYDIN C., e+e-nu antinu gama Sürecinin Tesir kesiti ve Taunötrinosunun Magnetik Momenti, Postgraduate, N.Kılıç(Student), 2006
AYDIN C., e+e_nu antinu gamma Sürecinde Yüksüz Bozonların Nötrino Magnetik Momentine Katkısı, Doctorate, A.Aydemir(Student), 2002
AYDIN C., Genişletilmiş Elektrozayıf Kuramda Z-nu antinu gama Sürecinin Bozunma Olasılığı, Postgraduate, M.Bayar(Student), 2002
AYDIN C., e+e-W+W Sürecinin Diferansiyel tesir kesiti, Postgraduate, F.Keskin(Student), 1999
AYDIN C., Nötrinolar ve Özellikleri, Postgraduate, A.Küçükarslan(Student), 1996

Jury Memberships

Doctorate, Tez Savunma Jürisi, KTÜ, July, 2018

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Energy deposition rate for neutrino pair annihilation in the presence of quintessence near neutron star**
AYDIN C.
Modern Physics Letters A, vol.38, no.36-37, 2023 (SCI-Expanded)
- II. **Stellar Energy Loss Rates Associated with Photoneutrino Process in Minimal Extension Standard Model**
Aydın C.
CHINESE PHYSICS C, vol.47, no.4, pp.1-7, 2023 (SCI-Expanded)
- III. **Bound state solutions of Dirac equation: spin and pseudo-spin symmetry in the presence of the combined Manning-Rosen and Yukawa tensor potentials**
Ahmadov A., Nagiyev S. M., AYDIN C., Tarverdiyeva V. A., Orujova M. S., Badalov S.
EUROPEAN PHYSICAL JOURNAL PLUS, vol.137, no.9, 2022 (SCI-Expanded)
- IV. **Role of neutrino form factors in the energy loss rates of the pair annihilation process**

AYDIN C.

CHINESE PHYSICS C, vol.46, no.7, 2022 (SCI-Expanded)

- V. **Exactly solvable model of the linear harmonic oscillator with a position-dependent mass under external homogeneous gravitational field**
Nagiyev S. M., AYDIN C., Ahmadov A. I., Amirova S. A.
EUROPEAN PHYSICAL JOURNAL PLUS, vol.137, no.5, 2022 (SCI-Expanded)
- VI. **Direct $\rho(L)$ meson production in proton-proton and proton-antiproton collisions**
AYDIN C., UZUN O., Ahmadov A.
INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.37, no.08, 2022 (SCI-Expanded)
- VII. **Inclusive production of charged pion pairs in proton-antiproton collisions**
Ahmadov A. I., Aydin C., Uzun O.
PHYSICAL REVIEW C, vol.99, no.3, 2019 (SCI-Expanded)
- VIII. **Higher-Twist Mechanism and Inclusive Gluon Production in Pion-Proton Collisions**
Ahmadov A. I., AYDIN Ç., Myrzakulov R., UZUN O.
INTERNATIONAL JOURNAL OF MODERN PHYSICS A, 2015 (SCI-Expanded)
- IX. **Inclusive gluon production in pion-proton collisions and the principle of maximum conformality renormalization scale**
Ahmadov A. I., AYDIN C., UZUN Ö.
PHYSICAL REVIEW D, vol.89, no.1, 2014 (SCI-Expanded)
- X. **ANALYTICAL SOLUTIONS OF THE KLEIN-FOCK-GORDON EQUATION WITH THE MANNING-ROSEN POTENTIAL PLUS A RING-SHAPED LIKE POTENTIAL**
Ahmadov A. I., Aydin C., UZUN Ö.
INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.29, no.1, 2014 (SCI-Expanded)
- XI. **ANALYTICAL SOLUTIONS OF THE SCHRODINGER EQUATION WITH THE MANNING-ROSEN POTENTIAL PLUS A RING-SHAPED-LIKE POTENTIAL**
Ahmadov H. I., AYDIN C., Huseynova N. S., UZUN Ö.
INTERNATIONAL JOURNAL OF MODERN PHYSICS E-NUCLEAR PHYSICS, vol.22, no.10, 2013 (SCI-Expanded)
- XII. **Higher-twist effects in the direct photon production and the role of infrared renormalons**
Ahmadov A. I., AYDIN C., UZUN Ö.
PHYSICAL REVIEW D, vol.87, no.1, 2013 (SCI-Expanded)
- XIII. **Meson wave functions from holographic QCD and the role of infrared renormalons in proton-proton collisions**
Ahmadov A. I., AYDIN C., KESKIN F.
ANNALS OF PHYSICS, vol.327, no.6, pp.1472-1483, 2012 (SCI-Expanded)
- XIV. **Pion wave functions from holographic QCD and the role of infrared renormalons in photon-photon collisions**
Ahmadov A. I., AYDIN C., KESKIN F.
PHYSICAL REVIEW D, vol.85, no.3, 2012 (SCI-Expanded)
- XV. **$g_{V S}$ gamma coupling constant in light cone QCD**
AYDIN C., AYDIN S. H., Keskin F., YILMAZ A. H.
PHYSICAL REVIEW D, vol.84, no.9, 2011 (SCI-Expanded)
- XVI. **Recalculation of the coupling constants $g(\rho \eta \gamma)$, $g(\omega \eta \gamma)$, $g(\eta' \rho \gamma)$, and $g(\eta' \omega \gamma)$ in QCD sum rules**
AYDIN C., BAYAR M., YILMAZ A. H.
PHYSICAL REVIEW D, vol.81, no.9, 2010 (SCI-Expanded)
- XVII. **Single meson production in photon-photon collisions and infrared renormalons**
Ahmadov A. I., AYDIN C., Dadashov E. A., NAGIYEV S. M.
PHYSICAL REVIEW D, vol.81, no.5, 2010 (SCI-Expanded)
- XVIII. **Infrared renormalons and single meson production in proton-proton collisions**
Ahmadov A. I., AYDIN C., NAGIYEV S. M., Hakan Y. A., Dadashov E. A.
PHYSICAL REVIEW D, vol.80, no.1, 2009 (SCI-Expanded)

- XIX. **Bounds on the magnetic moment of the tau-neutrino via the process $e^{(+)}e^{(-)} \rightarrow \nu(\nu)\overline{\text{bar}}$ gamma**
 AYDIN C., BAYAR M., KILIC N.
 CHINESE PHYSICS C, vol.32, no.8, pp.608-611, 2008 (SCI-Expanded)
- XX. **Investigation of $g(f_0 p \text{ gamma})$ and coupling constants in light cone sum rules**
 Aydin C., BAYAR M., Yilmaz A. H.
 EUROPEAN PHYSICAL JOURNAL C, vol.48, no.1, pp.111-115, 2006 (SCI-Expanded)
- XXI. **Investigation of $g(f_0)w \text{ gamma}$ coupling constant in three point QCD sum rules and light cone sum rules**
 Aydin C., Yilmaz A. H.
 ACTA PHYSICA POLONICA B, vol.37, no.6, pp.1769-1779, 2006 (SCI-Expanded)
- XXII. **Coupling constant $g \alpha \text{ omicron } \omega \text{ gamma}$ as derived from light-cone QCD sum rules**
 Aydin C., Yilmaz A. H.
 MODERN PHYSICS LETTERS A, vol.21, no.16, pp.1297-1303, 2006 (SCI-Expanded)
- XXIII. **$G(a_0 \rho \text{ gamma})$ and $g(f_0 \rho \text{ gamma})$ coupling constants in three point QCD sum rules**
 Aydin C., BAYAR M., Yilmaz A. H.
 PHYSICAL REVIEW D, vol.73, no.7, 2006 (SCI-Expanded)
- XXIV. **$g \phi \pi \text{ gamma}$ coupling constant in light-cone QCD sum rules**
 Aydin C., Yilmaz A. H., Bayar M.
 JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS, vol.31, no.7, pp.611-616, 2005 (SCI-Expanded)
- XXV. **Calculation of coupling constant $(g)\phi \pi \text{ gamma}$ in QCD sum rules**
 Aydin C., Yilmaz A. H.
 MODERN PHYSICS LETTERS A, vol.19, no.28, pp.2129-2134, 2004 (SCI-Expanded)
- XXVI. **QCD sum rule analysis of the coupling constants $g(\rho \text{ eta } \text{ gamma})$ and $g(\omega \text{ eta } \text{ gamma})$**
 Aydin C., Yilmaz A. H.
 ACTA PHYSICA POLONICA B, vol.34, no.8, pp.4145-4150, 2003 (SCI-Expanded)
- XXVII. **$Z \rightarrow \nu(\nu)\overline{\text{bar}} \text{ gamma}$ decay in beyond standard model**
 Aydin C., BAYAR M.
 MODERN PHYSICS LETTERS A, vol.17, no.13, pp.785-793, 2002 (SCI-Expanded)
- XXVIII. **The anapole moment of Dirac neutrinos in left-right symmetric model and in minimal supersymmetric model**
 Aydin C.
 MODERN PHYSICS LETTERS A, vol.16, no.28, pp.1823-1828, 2001 (SCI-Expanded)
- XXIX. **The ratios of energy losses through photoneutrino process in superstring inspired E-6 model and in the standard model**
 AYDEMIR A., Aydin C., SEVER R.
 MODERN PHYSICS LETTERS A, vol.16, no.8, pp.497-505, 2001 (SCI-Expanded)
- XXX. **The processes $e^{(+)}e^{(-)} \rightarrow \mu^{(+)}\mu^{(-)}, \mu^{(-)} \rightarrow e^{(-)}(\nu)\overline{\text{bar}}(e)\nu(\mu), \mu^{(-)} \rightarrow e^{(-)}\text{gamma}$ and heavy neutrino decay in the magnetic model**
 ABAK M., Aydin C.
 INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.11, no.7, pp.1329-1336, 1996 (SCI-Expanded)
- XXXI. **NEUTRINO-ELECTRON ELASTIC-SCATTERING AND STELLAR ENERGY-LOSS THROUGH ELECTRON-POSITRON PAIR ANNIHILATION IN THE MAGNETIC MODEL**
 AYDIN C.
 NUOVO CIMENTO DELLA SOCIETA ITALIANA DI FISICA A-NUCLEI PARTICLES AND FIELDS, vol.105, no.6, pp.843-849, 1992 (SCI-Expanded)
- XXXII. **EXTENSIONS OF $SU(2)_L \times U(1)$ MODELS AND THE FORM-FACTORS OF THE MASSIVE DIRAC NEUTRINOS**
 ABAK M., AYDIN C.
 NUOVO CIMENTO DELLA SOCIETA ITALIANA DI FISICA A-NUCLEI PARTICLES AND FIELDS, vol.101, no.4, pp.597-606, 1989 (SCI-Expanded)

- XXXIII. **CALCULATION OF THE ANAPOLE MOMENT OF THE NEUTRINO**
ABAK M., AYDIN C.
EUROPHYSICS LETTERS, vol.4, no.8, pp.881-885, 1987 (SCI-Expanded)

Articles Published in Other Journals

- I. **Contribution of Neutralino and Chargino to Diagonal Form Factor of Majorana Neutrino in the Minimal Supersymmetric Standard Model**
AYDIN C.
CUMHURİYET SCIENCE JOURNAL, vol.44, pp.197-202, 2023 (Peer-Reviewed Journal)
- II. **Investigation of Neutrino Magnetic Moment in the Process $e+e- \rightarrow \nu \bar{\nu} \gamma$**
AYDIN Ç.
Cumhuriyet Üniversitesi Fen Bilimleri Dergisi, vol.38, no.2, pp.153-158, 2017 (Peer-Reviewed Journal)
- III. **High twist contributions, quantum chromodynamics, and inclusive meson photoproduction at large p_T**
SADYCHOV F., AYDIN Ç., AHMADOV A. I.
News of Baku University, no.4, pp.181-189, 2007 (Peer-Reviewed Journal)
- IV. **High Twist Contributions quantum chromodynamics and inclusive meson photoproduction at large p_T**
Sultanmuratoğlu F., AYDIN Ç., Ahmadov A. I.
News of Baku University, vol.4, pp.181-189, 2007 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **Problemlerle Kuantum Mekaniği**
Sultanmuratoğlu F., AYDIN Ç.
Ktū, Trabzon, 1996

Refereed Congress / Symposium Publications in Proceedings

- I. **Rho Meson Production in Proton-proton Collisions**
AYDIN C., AHMADOV A. I., UZUN O.
INTERNATIONAL GOBEKLITEPE APPLIED SCIENCES CONGRESS-IV, Şanlıurfa, Turkey, 09 September 2022, pp.10
- II. **Secure Communication Using The Chaotic Van der Pol-Duffing Oscillator in Six-Dimensional**
AYDIN C., KINDIKOĞLU S., UZUN O.
INTERNATIONAL GOBEKLITEPE APPLIED SCIENCES CONGRESS-IV, Şanlıurfa, Turkey, 09 September 2022, pp.1-9
- III. **Nötrino-karşıtnötrino Çifti Süreçlerin Astrofizikteki Önemi**
AYDIN C.
YEFİS-2022 İSTANBUL YÜKSEK ENERJİ FİZİĞİ ÇALIŞTAYI, İstanbul, Turkey, 24 September 2022, pp.4
- IV. **Analytical solutions of the Dirac equation with Manning -Rosen potential including a Yukawa tensor potential within conventional and SUSY quantum mechanics**
A I A., Shakir M. N., AYDIN C., Tarverdiyeva V.
COIA 2022 Proceeding of 8th International Conference on Control on Optimization with Industrial Applications, Baku, Azerbaijan, 24 August 2022, pp.42-44
- V. **A model of the linear harmonic oscillator with a position-dependent mass in a homogeneous gravitational field**
Shakir M. N., AYDIN C., A I A., Amirova S.
COIA 2022 Proceeding of 8th International Conference on Control on Optimization with Industrial Applications,

Baku, Azerbaijan, 24 August 2022, pp.354-356

- VI. **Bound state solution of the Schödinger equation at finite temperature**
Ahmadov A. I., AYDIN C., UZUN O.
The 32nd International Colloquium on Group Theoretical Methods in Physics (Group32)9–13 July 2018, Prague, Czech Republic, PRAG, Czech Republic, 9 - 13 July 2018, vol.1194, pp.12001
- VII. **Proton-karşıt protonÇarpışmsınds Mezon Çifti Yaratılması**
AYDIN C., UZUN O.
YEFAK19, İstanbul, Turkey, 30 - 31 January 2019, pp.34
- VIII. **Direct Photon Production in Pion-Proton Collisions**
Ahmadov A. I., Aydin C., Uzun O.
24th International Conference on Integrable Systems and Quantum Symmetries (ISQS), Prague, Czech Republic, 14 - 18 June 2016, vol.804
- IX. **Higher-Twist Mechanism and Inclusive Gluon Production in Pion-Proton Collisions**
Ahmadov A. I., Aydin C., Myrzakulov R., Uzun O.
23rd International Conference on Integrable Systems and Quantum Symmetries (ISQS), Prague, Czech Republic, 23 - 27 June 2015, vol.670
- X. **Calculations of $g\alpha_0\omega\gamma$, $gf_0\omega\gamma$, $g\alpha_0\rho\gamma$ and $gf_0\rho\gamma$ Coupling Constants in QCD Sum Rules**
AYDIN Ç., BAYAR M., YILMAZ A. H.
AIP Conference Proceedings, Istanbul (Turkey), 22 - 26 August 2006
- XI. **Calculations of $g(a_0\omega\gamma)$, $g(f_0\omega\gamma)$, $g(a_0\rho\gamma)$ and $g(f_0\rho\gamma)$ coupling constants in QCD sum rules**
AYDIN C., BAYAR M., YILMAZ A. H.
6th International Conference of the Balkan-Physical-Union, İstanbul, Turkey, 22 - 26 August 2006, vol.899, pp.185-186
- XII. **Calculations of Coupling Constant $g\phi\pi\gamma$ in QCD sum rules and in light-cone QCD sum rules**
AYDIN Ç., BAYAR M., YILMAZ A. H.
TFD 23. Fizik Kongresi, Muğla, Turkey, 13 - 16 September 2005, pp.330
- XIII. **Bounds on the magnetic moment of the tau-neutrino via the process $e(+)\bar{e}(-)\rightarrow\nu(\nu)\bar{\gamma}$**
AYDIN Ç., BAYAR M., KILIÇ N.
TFD 23. Kongresi, Muğla, Turkey, 13 - 16 September 2005, pp.333
- XIV. **Z \rightarrow $\nu(\nu)\bar{\gamma}$ Sürecinin Bozunma Olasılığı ve Nötrino Manyetik Momenti**
AYDIN Ç., BAYAR M.
TFD '1. Fizik Kongresi, Isparta, Turkey, 11 - 14 September 2002, pp.240
- XV. **Nötrinoların Yapı Çarpanları**
ABAK M., AYDIN Ç.
TFD ULUSAL FİZİK KONGRESİ, Trabzon, Turkey, 31 August - 02 September 1989, pp.50
- XVI. **Form Factors of Massive Neutrinos in Extended SU(2)_L x U(1)**
ABAK M., AYDIN Ç.
Symmetries in Science III, Lochau, Austria, 25 - 28 July 1988

Metrics

Publication: 55

Citation (WoS): 183

Citation (Scopus): 165

H-Index (WoS): 7

H-Index (Scopus): 7

Non Academic Experience

Surrey University