

## Assoc. Prof. CEM SALİH ÜN

### Personal Information

Office Phone: [+90 224 295 5075](tel:+902242955075)

Email: [cemsalihin@uludag.edu.tr](mailto:cemsalihin@uludag.edu.tr)

Web: <https://avesis.uludag.edu.tr/cemsalihin>

### International Researcher IDs

ScholarID: ZQGfgV8AAAAJ

ORCID: 0000-0002-0595-8803

Publons / Web Of Science ResearcherID: N-3421-2014

ScopusID: 553257581005555325758100555325758100

Yoksis Researcher ID: 205326

### Education Information

Doctorate, University of Delaware, Physics And Astronomy Department, United States Of America 2009 - 2014

Postgraduate, Izmir Institute Of Technology, Institute Of Engineering And Natural Sciences, Fizik (YI) (Tezli) (İngilizce), Turkey 2003 - 2006

Undergraduate, Ege University, Faculty Of Science, Fizik Bölümü, Turkey 1997 - 2002

### Dissertations

Doctorate, Higgs boson, sparticle masses and neutralino dark matter in Yukawa unified models, University of Delaware, Physics And Astronomy Department, 2014

Postgraduate, Extra time-like dimensions, Izmir Institute Of Technology, Mühendislik Ve Fen Bilimleri Enstitüsü, Fizik (YI) (Tezli) (İngilizce), 2006

### Research Areas

Physics, Basic Particles and Areas, General Theory of Particles and Fields, Properties of special particles, Special reactions and phenomenology, Special theories and interaction models, particle systematics, Natural Sciences

### Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Muon  $g-2$  and lepton flavor violation in supersymmetric GUTs**  
Gómez M. E., Lola S., Shafi Q., Ün C. S.  
Physical Review D, vol.110, no.9, 2024 (SCI-Expanded)
- II. **Monophoton events with light Higgs bosons in the secluded UMSSM**  
Hiçyllmaz Y., Selbuz L., Ün C. S.  
Physical Review D, vol.108, no.7, 2023 (SCI-Expanded)
- III. **Third family quasi-Yukawa unification: Higgsino dark matter, NLSP gluino, and all that**  
Shafi Q., Tiwari A., Ün C. S.  
Physical Review D, vol.108, no.3, 2023 (SCI-Expanded)
- IV. **Explaining the R (D) and R (D\*) anomalies in the B-L supersymmetric standard model with inverse**

## seesaw mechanism

Boubaa D., Khalil S., Moretti S., Ün C. S.

Physical Review D, vol.107, no.7, 2023 (SCI-Expanded)

- V. **Muon  $g-2$ , neutralino dark matter and stau NLSP**  
Gomez M. E., Shafi Q., Tiwari A., Ün C. S.  
EUROPEAN PHYSICAL JOURNAL C, vol.82, no.6, 2022 (SCI-Expanded)
- VI. **The 28 GeV dimuon excess in lepton specific THDM**  
Cici A., Khalil S., Nis B., Ün C. S.  
NUCLEAR PHYSICS B, vol.977, 2022 (SCI-Expanded)
- VII. **Model characterization and dark matter in the secluded  $U(1)'$  model**  
Hicyilmaz Y., SELBUZ L., SOLMAZ L., Ün C. S.  
PHYSICAL REVIEW D, vol.105, no.5, 2022 (SCI-Expanded)
- VIII. **Proton lifetime in minimal SUSY  $SU(5)$  in light of LHC results**  
Babu K. S., Gogoladze I., Ün C. S.  
JOURNAL OF HIGH ENERGY PHYSICS, vol.2022, no.2, 2022 (SCI-Expanded)
- IX. **Electron and muon magnetic moments and implications for dark matter and model characterisation in non-universal  $U(1)'$  supersymmetric models**  
Frank M., Hicyilmaz Y., Mondal S., Ozdal O., Ün C. S.  
JOURNAL OF HIGH ENERGY PHYSICS, vol.2021, no.10, 2021 (SCI-Expanded)
- X. **Sparticle spectroscopy and dark matter in a  $U(1)(B-L)$  extension of MSSM**  
Ahmed W., Raza S., Shafi Q., Ün C. S., Zhu B.  
JOURNAL OF HIGH ENERGY PHYSICS, no.1, 2021 (SCI-Expanded)
- XI. **Stop search in SUSY  $SO(10)$  GUTs with nonuniversal Gaugino masses**  
Altin Z., KIRCA Z., Tanimak T., Salih Ün C. S.  
EUROPEAN PHYSICAL JOURNAL C, vol.80, no.9, 2020 (SCI-Expanded)
- XII. **Testing Yukawa unification at LHC Run-3 and HL-LHC**  
Gomez M. E., Shafi Q., Ün C. S.  
JOURNAL OF HIGH ENERGY PHYSICS, vol.2020, no.7, 2020 (SCI-Expanded)
- XIII.  **$b$  - Yukawa unification in SUSY  $SU(5)$  with mirage mediation: LHC and dark matter implications**  
Raza S., Shafi Q., Ün C. S.  
JOURNAL OF HIGH ENERGY PHYSICS, no.5, 2019 (SCI-Expanded)
- XIV. **Least fine-tuned  $U(1)$  extended SSM**  
Hicyilmaz Y., SOLMAZ L., Tanyildizi S. H., Ün C. S.  
NUCLEAR PHYSICS B, vol.933, pp.275-298, 2018 (SCI-Expanded)
- XV. **Sneutrino Dark Matter in the BLSSM**  
Delle Rose L., Khalil S., King S. J. D., Kulkarni S., Marzo C., Moretti S., Ün C. S.  
JOURNAL OF HIGH ENERGY PHYSICS, no.7, 2018 (SCI-Expanded)
- XVI. **Charged Higgs boson in MSSM and beyond**  
Hicyilmaz Y., SELBUZ L., SOLMAZ L., Ün C. S.  
PHYSICAL REVIEW D, vol.97, no.11, 2018 (SCI-Expanded)
- XVII. **Phenomenology of 2HDM with vectorlike quarks**  
Arhrib A., Benbrik R., King S. J. D., Manaut B., Moretti S., Ün C. S.  
PHYSICAL REVIEW D, vol.97, no.9, 2018 (SCI-Expanded)
- XVIII. **Muon  $g-2$  in an alternative quasi-Yukawa unification with a less fine-tuned seesaw mechanism**  
Altin Z., Ozdal O., Ün C. S.  
PHYSICAL REVIEW D, vol.97, no.5, 2018 (SCI-Expanded)
- XIX. **Light stops and fine-tuning in MSSM**  
Cici A., KIRCA Z., Ün C. S.  
EUROPEAN PHYSICAL JOURNAL C, vol.78, no.1, 2018 (SCI-Expanded)
- XX. **Naturalness and dark matter in the supersymmetric  $B - L$  extension of the standard model**  
Delle Rose L., Khalil S., King S. J. D., Marzo C., Moretti S., Ün C. S.

- PHYSICAL REVIEW D, vol.96, no.5, 2017 (SCI-Expanded)
- XXI. **Light Higgsinos, heavy gluino, and b-tau quasi-Yukawa unification: Prospects for finding the gluino at the LHC**  
Hebbar A., Shafi Q., ÜN C. S.  
PHYSICAL REVIEW D, vol.95, no.11, 2017 (SCI-Expanded)
- XXII. **Large BR(h → tau mu) in supersymmetric models**  
Hammad A., Khalil S., ÜN C. S.  
PHYSICAL REVIEW D, vol.95, no.5, 2017 (SCI-Expanded)
- XXIII. **Muon g-2 in gauge mediated supersymmetry breaking models with adjoint messengers**  
Gogoladze I., ÜN C. S.  
PHYSICAL REVIEW D, vol.95, no.3, 2017 (SCI-Expanded)
- XXIV. **Muon anomalous magnetic moment in SUSY B - L model with inverse seesaw**  
Khalil S., ÜN C. S.  
PHYSICS LETTERS B, vol.763, pp.164-168, 2016 (SCI-Expanded)
- XXV. **Quasi-Yukawa unification and fine-tuning in U(1) extended SSM**  
Hicyilmaz Y., Ceylan M., Altas A., SOLMAZ L., ÜN C. S.  
PHYSICAL REVIEW D, vol.94, no.9, 2016 (SCI-Expanded)
- XXVI. **Gauge mediation models with adjoint messengers**  
Gogoladze I., Mustafayev A., Shafi Q., ÜN C. S.  
PHYSICAL REVIEW D, vol.94, no.7, 2016 (SCI-Expanded)
- XXVII. **Mass spectrum and Higgs profile in B - L symmetric SSM**  
ÜN C. S., Ozdal O.  
PHYSICAL REVIEW D, vol.93, no.5, 2016 (SCI-Expanded)
- XXVIII. **Reconciling the muon g-2, a 125 GeV Higgs boson, and dark matter in gauge mediation models**  
Gogoladze I., Shafi Q., ÜN C. S.  
PHYSICAL REVIEW D, vol.92, no.11, 2015 (SCI-Expanded)
- XXIX. **Neutralino dark matter and other LHC predictions from quasi Yukawa unification**  
Shafi Q., Tanyildizi S. H., ÜN C. S.  
NUCLEAR PHYSICS B, vol.900, pp.400-411, 2015 (SCI-Expanded)
- XXX. **NLSP gluino and NLSP stop scenarios from b - tau Yukawa unification**  
Raza S., Shafi Q., ÜN C. S.  
PHYSICAL REVIEW D, vol.92, no.5, 2015 (SCI-Expanded)
- XXXI. **Yukawa unification and sparticle spectroscopy in gauge mediation models**  
Gogoladze I., Mustafayev A., Shafi Q., ÜN C. S.  
PHYSICAL REVIEW D, vol.91, no.9, 2015 (SCI-Expanded)
- XXXII. **Generalized soft breaking leverage for the MSSM**  
ÜN C. S., Tanyildizi S. H., KERMAN S., SOLMAZ L.  
PHYSICAL REVIEW D, vol.91, no.10, 2015 (SCI-Expanded)
- XXXIII. **Muon g-2, 125 GeV Higgs boson, and neutralino dark matter in a flavor symmetry-based MSSM**  
Babu K. S., Gogoladze I., Shafi Q., ÜN C. S.  
PHYSICAL REVIEW D, vol.90, no.11, 2014 (SCI-Expanded)
- XXXIV. **Stop on top: SUSY parameter regions and fine-tuning constraints**  
DEMİR D. A., ÜN C. S.  
PHYSICAL REVIEW D, vol.90, no.9, 2014 (SCI-Expanded)
- XXXV. **Nonuniversal gaugino masses and muon g-2**  
Gogoladze I., Nasir F., Shafi Q., Uen C. S.  
PHYSICAL REVIEW D, vol.90, no.3, 2014 (SCI-Expanded)
- XXXVI. **Split sfermion families, Yukawa unification and muon g-2**  
Ajaib M. A., Gogoladze I., Shafi Q., Uen C. S.  
JOURNAL OF HIGH ENERGY PHYSICS, no.5, 2014 (SCI-Expanded)
- XXXVII. **A predictive Yukawa unified SO(10) model: Higgs and sparticle masses**

- Ajaib M. A., Gogoladze I., Shafi Q., Uen C. S.  
 JOURNAL OF HIGH ENERGY PHYSICS, no.7, 2013 (SCI-Expanded)
- XXXVIII. **Higgs boson mass from t-b-tau Yukawa unification**  
 Gogoladze I., Shafi Q., Uen C. S.  
 JOURNAL OF HIGH ENERGY PHYSICS, no.8, 2012 (SCI-Expanded)
- XXXIX. **125 GeV Higgs boson from t-b-tau Yukawa unification**  
 Gogoladze I., Shafi Q., Uen C. S.  
 JOURNAL OF HIGH ENERGY PHYSICS, no.7, 2012 (SCI-Expanded)
- XL. **SO(10) Yukawa unification with  $\mu < 0$**   
 Gogoladze I., Shafi Q., Uen C. S.  
 PHYSICS LETTERS B, vol.704, no.3, pp.201-205, 2011 (SCI-Expanded)
- XLI. **Sparticle spectroscopy with neutralino dark matter from t-b-tau quasi-Yukawa unification**  
 Dar S., Gogoladze I., Shafi Q., Uen C. S.  
 PHYSICAL REVIEW D, vol.84, no.8, 2011 (SCI-Expanded)
- XLII. **Reconsidering extra time-like dimensions**  
 Erdem R., Ün C. S.  
 EUROPEAN PHYSICAL JOURNAL C, vol.47, no.3, pp.845-850, 2006 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Low fine-tuning with heavy higgsinos in Yukawa unified SUSY GUTs**  
 Ün C. S.  
 Turkish Journal of Physics, vol.48, no.1, pp.1-27, 2024 (ESCI)
- II. **Muon  $g-2$  in Light of LHC and DM Experiments**  
 Ün C. S., Gómez M., Shafi Q., Tiwari A.  
 Letters in High Energy Physics, vol.2023, 2023 (Scopus)
- III. **Muon  $g - 2$ , Dark Matter, and Lepton Flavor Violation in SUSY-GUT's**  
 Gómez M. E., Lola S., Shafi Q., Tiwari A., Ün C. S.  
 Letters in High Energy Physics, vol.2023, 2023 (Scopus)
- IV. **Prospects for sneutrino Dark Matter in the BLSSM**  
 King S. J. D., Delle Rose L., Khalil S., Kulkarni S., Marzo C., Moretti S., Ün C. S.  
 NUOVO CIMENTO C-COLLOQUIA AND COMMUNICATIONS IN PHYSICS, vol.41, no.4, 2018 (ESCI)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Mass Spectrum and Higgs Profile in B-L Symmetric SSM**  
 özdal ö., Ün C. S.  
 Higgs Couplings 2019, 30 September - 04 October 2019
- II. **Charge Higgs in MSSM and Beyond**  
 HİÇYILMAZ Y., SELBUZ L., SOLMAZ L., ÜN C. S.  
 Higgs Couplings 2019, Londrina, Brazil, 30 September - 04 October 2019
- III. **Associated Production of Charged Higgs Boson and Heavy Top Quark in the Left Right Twin Higgs Model at High Energy Electron Positron Collider**  
 KIRCA Z., ÜN C. S., Altın Z.  
 10 th Jubilee International Conference of the Balkan Physical Union, 26 - 30 August 2018
- IV. **Associated Production of Charged Higgs Boson and Heavy Top Quark in the Left-Right Twin Higgs Model at High Energy  $e(-)e(+)$  Collider**  
 KIRCA Z., ÜN C. S., Altın Z.  
 10th Jubilee Conference of the Balkan-Physical-Union (BPU), Sofija, Bulgaria, 26 - 30 August 2018, vol.2075

- V. **Sneutrino dark matter, constraints and perspectives**  
 Rose L. D., Khalil S., King S. J., Kulkarni S., Marzo C., Moretti S., Ün C. S.  
 53rd Rencontres de Moriond on Electroweak Interactions and Unified Theories, EW 2018, La Thuile, Italy, 10 - 17 March 2018, pp.423-426
- VI. **Naturalness and Dark Matter in the BLSSM**  
 marzo c., Ün C. S., Rose L. D., King S. J., Khalil S., Moretti S.  
 EPS-HEP 2017, 5 - 12 July 2017
- VII. **Stop Search with Acceptable Fine-tuning in SUSY Models**  
 Çiçi A., Ün C. S., KIRCA Z.  
 Turkish Physical Society 32nd International Physics Congress, 6 - 09 September 2016
- VIII. **Prohibing the Littlest Higgs Model in e-e--WHTb Process**  
 Altın Z., KIRCA Z., Ün C. S.  
 Turkish Physical Society 32nd International Physics Congress, 6 - 09 September 2016
- IX. **Light Higgs Bosons and Muon g-2 in THDM**  
 Nis B., Ciçi A., Ün C. S., KIRCA Z.  
 32nd International Physics Congress of Turkish-Physical-Society (TPS), Bodrum, Turkey, 6 - 09 September 2016, vol.1815
- X. **Probing The Littlest Higgs Model in e(-) e(+) -> W-H(+) (T)over-bar b Process**  
 Altın Z., KIRCA Z., Ün C. S.  
 32nd International Physics Congress of Turkish-Physical-Society (TPS), Bodrum, Turkey, 6 - 09 September 2016, vol.1815
- XI. **Supersymmetric gauged b-l model of dark matter and fine tuning**  
 Rose L. D., Khalil S., King S., Marzo C., Moretti S., Ün C. S.  
 2017 European Physical Society Conference on High Energy Physics, EPS-HEP 2017, Venice, Italy, 5 - 12 July 2017
- XII. **Lepton Flavor Violating Higgs Decays in Supersymmetric Models**  
 Ün C. S., Hammad A., Khalil S.  
 32nd International Physics Congress of Turkish-Physical-Society (TPS), Bodrum, Turkey, 6 - 09 September 2016, vol.1815
- XIII. **Naturalness and Dark Matter Properties of the BLSSM**  
 Rose L. D., Khalil S., King S., Marzo C., Moretti S., Ün C. S.  
 25th International Workshop on Deep-Inelastic Scattering and Related Subjects, DIS 2017, Birmingham, United Kingdom, 3 - 07 April 2017
- XIV. **Stop Search With Acceptable Fine-Tuning in Susy Models**  
 Cici A., Ün C. S., KIRCA Z.  
 32nd International Physics Congress of Turkish-Physical-Society (TPS), Bodrum, Turkey, 6 - 09 September 2016, vol.1815
- XV. **Associated Production of Heavy W Boson Heavy Top Quark and Bottom Quarks in the Littlest Higgs Model At High Energy Linear e e Collider**  
 Altın Z., KIRCA Z., Ün C. S.  
 Turkish Physical Society 32nd International Physics Congress, 6 - 09 September 2016
- XVI. **Higgs Boson Decays into Two Photons and Four Leptons in THDM**  
 Niş B., Çiçi A., KIRCA Z., Ün C. S.  
 Turkish Physical Society 32nd International Physics Congress, 6 - 09 September 2016
- XVII. **Production of Heavy Top Quark Associated with Charged Higgs Boson in the Left Right Twin Higgs Model**  
 Yıldız B., Altın Z., KIRCA Z., Ün C. S.  
 Turkish Physical Society 32nd International Physics Congress, 6 - 09 September 2016
- XVIII. **Muon g 2 in MSSM and B L SSM**  
 Ün C. S.  
 Scalars 2015, Varşova, Poland, 3 - 07 December 2015
- XIX. **Littlest Higgs Model in High Energy Linear Electron Positron Colliders: Production of Heavy W**

### **boson and Heavy Top Quark**

Altın Z., ÜN C. S., KIRCA Z.

VIII. International Workshop on Nuclear Structure Properties, 7 - 10 September 2015

### **XX. Süpersimetrik Modellerde 125 GeV Higgs ve Muon Anomal Manyetik Moment**

ÜN C. S.

İstanbul Yüksek Enerji Fiziği Çalıştayı, Turkey, 18 - 19 April 2015

### **XXI. Süpersimetrik Modellerde Stop Top Dejenerasyonu ve İnce Ayar**

ÜN C. S.

Ankara Yüksek Enerji Fiziği Çalıştayı, Ankara, Turkey, 12 - 14 February 2015

### **XXII. Süpersimetri Higgs ve LHC**

ÜN C. S.

III. GENÇ FİZİKÇİLER KONGRESİ, İzmir, Turkey, 14 - 16 July 2014

## **Supported Projects**

ÜN C. S., KIRCA Z., TUBITAK Project, Büyük Birleşim Teorilerinden Büyük Hadron Çarpıştırıcısına Hafif Gluino ve Hafif Stop, 2018 - 2021

ÜN C. S., TUBITAK Project, Süpersimetrik Modellerde Muon Anomal Manyetik Momenti Ve Yukawa Yarı Birleşimi, 2015 - 2018

## **Scientific Refereeing**

PHYSICAL REVIEW D - PARTICLES, FIELDS, GRAVITATION AND COSMOLOGY, Journal Indexed in SCI-E, October 2023

PHYSICAL REVIEW D - PARTICLES, FIELDS, GRAVITATION AND COSMOLOGY, Journal Indexed in SCI-E, February 2023

PHYSICAL REVIEW LETTERS, Journal Indexed in SCI-E, October 2022

PHYSICAL REVIEW D - PARTICLES, FIELDS, GRAVITATION AND COSMOLOGY, Journal Indexed in SCI-E, April 2022

LETTERS IN HIGH ENERGY PHYSICS, Other Indexed Journal, January 2022

## **Metrics**

Publication: 68

Citation (WoS): 609

Citation (Scopus): 643

H-Index (WoS): 16

H-Index (Scopus): 17

## **Congress and Symposium Activities**

29th International Conference on Supersymmetry (SUSY 2022), Panelists, Ioannina, Greece, 2022

## **Invited Talks**

High Energy Physics - İstanbul (HEPİST), Workshop, Yıldız Teknik Üniversitesi, Turkey, October 2023

## **Scholarships**

