

## Prof. MURAT KÖKSAL

### Personal Information

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### Education Information

Doctorate, Bülent Ecevit Üniversitesi, Fen-Edebiyat Fakültesi, Fizik Bölümü, Turkey 2007 - 2012

Postgraduate, Sivas Cumhuriyet University, Fen-Edebiyat Fakültesi, Turkey 2003 - 2006

Undergraduate, Ankara University, Fen Fakültesi, Fizik Bölümü, Turkey 1998 - 2002

### Foreign Languages

English, B2 Upper Intermediate

### Dissertations

Doctorate, Standart model ötesi fiziğin araştırılmasında nötrino etkileşmeleri, Bülent Ecevit Üniversitesi, Fen-Edebiyat Fakültesi, Fizik Bölümü, 2012

Postgraduate, Heteroyapılarda alan altında kutuplanabilirlik ve fotoiyonizasyon tesir-kesiti hesabı, Sivas Cumhuriyet Üniversitesi, Fen-Edebiyat Fakültesi, 2006

### Research Areas

Natural Sciences

### Academic Titles / Tasks

Professor, Sivas Cumhuriyet University, Teknoloji Fakültesi, Optik Mühendisliği, 2021 - Continues

Associate Professor, Sivas Cumhuriyet University, Teknoloji Fakültesi, Optik Mühendisliği, 2016 - Continues

Assistant Professor, Sivas Cumhuriyet University, Teknoloji Fakültesi, Optik Mühendisliği, 2014 - Continues

Assistant Professor, Sivas Cumhuriyet University, Fen Fakültesi, İstatistik Ve Bilgisayar Bilimleri Bölümü, 2013 - 2014

Research Assistant, Sivas Cumhuriyet University, Fen Fakültesi, Fizik Bölümü, 2008 - 2013

### Academic and Administrative Experience

Sivas Cumhuriyet Üniversitesi, Teknoloji Fakültesi, 2014 - Continues

Sivas Cumhuriyet Üniversitesi, Fen-Edebiyat Fakültesi, 2013 - 2014

### Courses

Statik, Undergraduate, 2019 - 2020  
Lazer Fiziği Uygulamaları-I, Postgraduate, 2019 - 2020  
İleri Fizik Optik, Postgraduate, 2019 - 2020  
Seminer Dersi, Postgraduate, 2016 - 2017  
Statik, Undergraduate, 2017 - 2018  
Statik, Undergraduate, 2017 - 2018  
Statik, Undergraduate, 2017 - 2018  
Lens Tasarımı ve Kusurları, Postgraduate, 2017 - 2018  
Optik İnce Film Kaplama Teknikleri, Postgraduate, 2016 - 2017  
Uzmanlık Alan Dersi, Postgraduate, 2017 - 2018  
Statik, Undergraduate, 2017 - 2018  
Statik, Undergraduate, 2017 - 2018  
Teknik Çeviri, Undergraduate, 2016 - 2017  
Teknik Çeviri, Undergraduate, 2016 - 2017  
Statik, Undergraduate, 2016 - 2017  
Statik, Undergraduate, 2016 - 2017  
İstatistik, Undergraduate, 2014 - 2015  
Bilgisayar - I, Undergraduate, 2014 - 2015

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

- I. **Study of the projected sensitivity on the anomalous quartic gauge couplings via  $Z\gamma\gamma$  production at the CLIC**  
ARI V., Gurkanli E., KÖKSAL M., Gutiérrez-Rodríguez A., Hernández-Ruíz M.  
Nuclear Physics B, vol.989, 2023 (SCI-Expanded)
- II. **Model-independent study on the anomalous  $ZZ\gamma$  and  $Z\gamma\gamma$  couplings at the future muon collider**  
Senol A., Spor S., Gurkanli E., Cetinkaya V., Denizli H., KÖKSAL M.  
European Physical Journal Plus, vol.137, no.12, 2022 (SCI-Expanded)
- III. **Search for the anomalous  $ZZ$  gamma and  $Z$  gamma gamma couplings via  $\nu\nu$  gamma production at the CLIC**  
Spor S., Gurkanli E., Koksals M.  
NUCLEAR PHYSICS B, vol.979, 2022 (SCI-Expanded)
- IV. **Feasibility at the LHC, FCC-he and CLIC for Sensitivity Estimates on Anomalous Electromagnetic Couplings of the tau-lepton**  
Gutierrez-Rodriguez A., Koksals M., Billur A. A., Hernandez-Ruiz M. A.  
INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS, vol.61, no.6, 2022 (SCI-Expanded)
- V. **Sensitivity analysis for the anomalous  $W^+ W^-$  gamma couplings at the LHeC and the FCC-he**  
Spor S., Koksals M.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.137, no.1, 2022 (SCI-Expanded)
- VI. **Model-independent study on the anomalous  $\tau\tau^-\gamma$  couplings at the ILC**  
KÖKSAL M.  
Nuclear Physics B, vol.971, 2021 (SCI-Expanded)
- VII. **Search for the anomalous  $WW\gamma$  couplings through the process  $e^-e^+\rightarrow\nu e\nu^-\gamma$  at ILC with unpolarized and polarized beams**  
Spor S., KÖKSAL M.  
Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, vol.820, 2021 (SCI-Expanded)
- VIII. **Analysis of the anomalous quartic  $WWWW$  couplings at the LHeC and the FCC-he**  
Gurkanli E., Ari V., Billur A. A., Koksals M.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.136, no.7, 2021 (SCI-Expanded)
- IX. **Model-independent limits for anomalous triple gauge bosons  $W^+W^-$ gamma couplings at the CLIC**

- Billur A. A., Koksals M., Gutierrez-Rodriguez A., Hernandez-Ruiz M. A.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.136, no.6, 2021 (SCI-Expanded)
- X. **Study on the anomalous quartic  $W+W-$  gamma gamma couplings of electroweak bosons in  $e(-) p$  collisions at the LHeC and the FCC-he**  
Gutierrez-Rodriguez A., Hernandez-Ruiz M. A., Gurkanli E., Ari V., Koksals M.  
EUROPEAN PHYSICAL JOURNAL C, vol.81, no.3, 2021 (SCI-Expanded)
- XI. **Sensitivity measuring expected on the electromagnetic anomalous couplings in the  $t(\bar{t})$  over-bar gamma vertex at the FCC-he**  
Köksal M., Billur A. A., Gutierrez-Rodriguez A., Hernandez-Ruiz M. A.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.35, no.28, 2020 (SCI-Expanded)
- XII. **Bounds on the non-standard  $W+W-\gamma$  couplings at the LHeC and the FCC-he**  
Köksal M., Billur A. A., Gutierrez-Rodriguez A., Hernández-Ruiz M.  
Physics Letters B, vol.808, pp.135661-135682, 2020 (SCI-Expanded)
- XIII. **Sensitivity physics expected to the measurement of the quartic  $WW$  gamma gamma couplings at the LHeC and the FCC-he**  
Gurkanli E., Ari V., Gutierrez-Rodriguez A., Hernandez-Ruiz M. A., Köksal M.  
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS, vol.47, no.9, 2020 (SCI-Expanded)
- XIV. **Model independent study for the anomalous quartic  $WW$  gamma gamma couplings at future electron-proton colliders**  
Ari V., Gurkanli E., Billur A. A., Köksal M.  
NUCLEAR PHYSICS B, vol.957, 2020 (SCI-Expanded)
- XV. **Model independent study for the anomalous  $W+W-$  gamma couplings at the future lepton-hadron colliders**  
Spor S., Billur A. A., Köksal M.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.135, no.8, 2020 (SCI-Expanded)
- XVI. **Model-independent sensitivity estimates for the electromagnetic dipole moments of the top quark at the Large Hadron Collider and beyond**  
Köksal M.  
NUCLEAR PHYSICS B, vol.956, 2020 (SCI-Expanded)
- XVII. **Probing model-independent limits on  $W+W$ -gamma triple gauge boson vertex at the LHeC and the FCC-he**  
Gutierrez-Rodriguez A., Koksals M., Billur A. A., Hernandez-Ruiz M. A.  
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS, vol.47, no.5, 2020 (SCI-Expanded)
- XVIII. **Anomalous quartic  $W+W-$  gamma gamma couplings in  $e(-) p$  collisions at the LHeC and the FCC-he**  
Ari V., Gurkanli E., Gutierrez-Rodriguez A., Hernandez-Ruiz M. A., Koksals M.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.135, no.3, 2020 (SCI-Expanded)
- XIX. **Probing the anomalous electromagnetic dipole moments of the top quark in gamma p collision at the LHC, the HL-LHC and the HE-LHC**  
Koksals M.  
NUCLEAR PHYSICS B, vol.950, 2020 (SCI-Expanded)
- XX. **Probing the anomalous  $tq$  gamma couplings through single top production at the future lepton-hadron colliders**  
Alici E., KÖKSAL M.  
MODERN PHYSICS LETTERS A, vol.34, no.36, 2019 (SCI-Expanded)
- XXI. **Projections for model-independent limit estimates on top-quark anomalous electromagnetic couplings at the FCC-he**  
Billur A. A., Köksal M., Gutierrez-Rodriguez A., Hernandez-Ruiz M. A.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.134, 2019 (SCI-Expanded)
- XXII. **Studies on the anomalous magnetic and electric dipole moments of the tau-neutrino in pp collisions at the LHC**  
Gutierrez-Rodriguez A., KÖKSAL M., BİLLUR A. A., Hernandez-Ruiz M. A.

- EUROPEAN PHYSICAL JOURNAL A, vol.55, no.8, 2019 (SCI-Expanded)
- XXIII. **Search for the electromagnetic moments of the tau lepton in photon-photon collisions at the LHeC and the FCC-he**  
Koksal M.  
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS, vol.46, no.6, 2019 (SCI-Expanded)
- XXIV. **The mu(+) $\mu$ (-) collider to sensitivity estimates on the magnetic and electric dipole moments of the tau-lepton**  
Koksal M., Billur A. A., Gutierrez-Rodriguez A., Hernandez-Ruiz M. A.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.34, no.15, 2019 (SCI-Expanded)
- XXV. **FCC-he sensitivity estimates on the anomalous electromagnetic dipole moments of the top-quark**  
Hernandez-Ruiz M. A., Gutierrez-Rodriguez A., Koksal M., Billur A. A.  
NUCLEAR PHYSICS B, vol.941, pp.646-664, 2019 (SCI-Expanded)
- XXVI. **Model-independent sensibility studies for the anomalous dipole moments of the nu(tau) at the CLIC based e(+) $e$ (-) and gamma e(-) colliders**  
Billur A. A., Koksal M., Gutierrez-Rodriguez A., Hernandez-Ruiz M. A.  
PHYSICAL REVIEW D, vol.98, no.9, 2018 (SCI-Expanded)
- XXVII. **Analysis of the anomalous electromagnetic moments of the tau lepton in gamma p collisions at the LHC**  
Koksal M., Inan S. C., Billur A. A., Ozguven Y., Bahar M. K.  
PHYSICS LETTERS B, vol.783, pp.375-380, 2018 (SCI-Expanded)
- XXVIII. **Model-independent sensitivity estimates for the electromagnetic dipole moments of the tau-lepton at the CLIC**  
Koksal M., Billur A. A., Gutierrez-Rodriguez A., Hernandez-Ruiz M. A.  
PHYSICAL REVIEW D, vol.98, no.1, 2018 (SCI-Expanded)
- XXIX. **Search for the anomalous electromagnetic moments of tau lepton through electron-photon scattering at CLIC**  
Ozguven Y., Billur A. A., Inan S. C., Bahar M. K., Koksal M.  
NUCLEAR PHYSICS B, vol.923, pp.475-490, 2017 (SCI-Expanded)
- XXX. **Improved sensitivity on the electromagnetic dipole moments of the top quark in gamma gamma, gamma gamma\* and gamma\*gamma\* collisions at the CLIC**  
Billur A. A., Koksal M., Gutierrez-Rodriguez A.  
PHYSICAL REVIEW D, vol.96, no.5, 2017 (SCI-Expanded)
- XXXI. **Bounds on the Electromagnetic Dipole Moments through the Single Top Production at the CLIC**  
Koksal M., Billur A. A., Gutierrez-Rodriguez A.  
ADVANCES IN HIGH ENERGY PHYSICS, 2017 (SCI-Expanded)
- XXXII. **Probe of the Anomalous Quartic Couplings with Beam Polarization at the CLIC**  
Senol A., Koksal M., Inan S. C.  
ADVANCES IN HIGH ENERGY PHYSICS, 2017 (SCI-Expanded)
- XXXIII. **Anomalous WW gamma couplings with beam polarization at the Compact Linear Collider**  
Ari V., Billur A. A., Inan S. C., Koksal M.  
NUCLEAR PHYSICS B, vol.906, pp.211-230, 2016 (SCI-Expanded)
- XXXIV. **Search for Anomalous Quartic ZZ gamma gamma Couplings in Photon-Photon Collisions**  
Koksal M., Ari V., Senol A.  
ADVANCES IN HIGH ENERGY PHYSICS, 2016 (SCI-Expanded)
- XXXV. **Search for anomalous quartic WWZ gamma couplings at the future linear e(+) $e$ (-) collider**  
Koksal M., Senol A.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.30, no.20, 2015 (SCI-Expanded)
- XXXVI. **Improved bounds on the dipole moments of the tau neutrino from high-energy gamma\*e(-) and gamma\*gamma\* collisions at the ILC and CLIC**  
Gutierrez-Rodriguez A., Koksal M., Billur A. A.  
PHYSICAL REVIEW D, vol.91, no.9, 2015 (SCI-Expanded)

- XXXVII. **Anomalous quartic ZZ gamma gamma couplings at the CLIC**  
Koksal M.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.130, no.4, 2015 (SCI-Expanded)
- XXXVIII. **Probe of anomalous quartic WWZ gamma couplings in photon-photon collisions**  
Senol A., Koksal M.  
JOURNAL OF HIGH ENERGY PHYSICS, no.3, 2015 (SCI-Expanded)
- XXXIX. **Analysis of anomalous quartic W W Z gamma couplings in gamma p collision at the LHC**  
Senol A., Koksal M.  
PHYSICS LETTERS B, vol.742, pp.143-148, 2015 (SCI-Expanded)
- XL. **Graviton production through photon-quark scattering at the LHC**  
Sahin I., Koksal M., Inan S. C., Billur A. A., Sahin B., Tektas P., Alici E., Yildirim R.  
PHYSICAL REVIEW D, vol.91, no.3, 2015 (SCI-Expanded)
- XLI. **Study of anomalous WW gamma gamma coupling sensitivity at the compact linear collider**  
Koksal M.  
MODERN PHYSICS LETTERS A, vol.29, no.34, 2014 (SCI-Expanded)
- XLII. **Analysis of excited neutrinos at the CLIC**  
Koksal M.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.29, no.24, 2014 (SCI-Expanded)
- XLIII. **Probe of the electromagnetic moments of the tau lepton in gamma-gamma collisions at the CLIC**  
Billur A. A., Koksal M.  
PHYSICAL REVIEW D, vol.89, no.3, 2014 (SCI-Expanded)
- XLIV. **Anomalous tq gamma Couplings in gamma p Collision at the LHC**  
Koksal M., Inan S. C.  
ADVANCES IN HIGH ENERGY PHYSICS, 2014 (SCI-Expanded)
- XLV. **Search for the Anomalous Interactions of Up-Type Heavy Quarks in gamma gamma Collision at the LHC**  
Koksal M., Inan S. C.  
ADVANCES IN HIGH ENERGY PHYSICS, 2014 (SCI-Expanded)
- XLVI. **THE EFFECT OF ELECTROMAGNETIC PROPERTIES OF NEUTRINOS ON THE PHOTON-NEUTRINO DECOUPLING TEMPERATURE**  
Inan S. C., Koksal M.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.27, no.32, 2012 (SCI-Expanded)
- XLVII. **The Impact of Excited Neutrinos on  $\nu(\bar{\nu}) \rightarrow \gamma \gamma$  Process**  
Inan S. C., Koksal M.  
ADVANCES IN HIGH ENERGY PHYSICS, 2012 (SCI-Expanded)
- XLVIII. **Search for electromagnetic properties of the neutrinos at the LHC**  
Sahin I., Koksal M.  
JOURNAL OF HIGH ENERGY PHYSICS, no.3, 2011 (SCI-Expanded)
- XLIX. **The effects of the magnetic field and dielectric screening on the diamagnetic susceptibility of a donor in a quantum well with anisotropic effective mass**  
Kilicarslan E., Sakiroglu S., Koksal M., Sari H., Sokmen I.  
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, vol.42, no.5, pp.1531-1535, 2010 (SCI-Expanded)
- L. **Magnetic-field effect on the diamagnetic susceptibility of hydrogenic impurities in quantum well-wires**  
Koksal M., Kilicarslan E., Sari H., Sokmen I.  
PHYSICA B-CONDENSED MATTER, vol.404, no.21, pp.3850-3854, 2009 (SCI-Expanded)
- LI. **Photoionization cross-section and binding energy of donor impurities in GaAs, Ge and Si quantum wires with infinite barriers**  
Koksal M., Kasapoglu E., Sari H., Sokmen I.  
SUPERLATTICES AND MICROSTRUCTURES, vol.46, no.3, pp.507-512, 2009 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Probing the Anomalous  $tq\gamma$  Couplings in  $\gamma\gamma$  Collisions at the LHC**  
Köksal M.  
Cumhuriyet Science Journal, vol.37, no.4, pp.32-38, 2016 (Peer-Reviewed Journal)
- II. **Search for the anomalous electromagnetic moments of the tau lepton through electron photon scattering at the CLIC**  
ÖZGÜVEN Y., İNAN S. C., BİLLUR A. A., KÖKSAL M., BAHAR M. K.  
arXiv, 2016 (Non Peer-Reviewed Journal)
- III. **Nötrinin Elektromagnetik Özellikleri**  
KÖKSAL M., ŞAHİN İ.  
Karaelmas Science and Engineering Journal, vol.1, pp.15-19, 2011 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Probing the prospective FCC-he sensitivities on the electromagnetic dipole moments of the top-quark**  
hernandezruiz M., KÖKSAL M., BİLLUR A. A., Gutierrezrodriguez A.  
40th International Conference on High Energy physics - ICHEP2020, PRAG, Czech Republic, 28 July 2020
- II. **Sensitivity on the electromagnetic dipole moments of the tau-lepton at the CLIC**  
hernandezruiz M., Gutierrezrodriguez A., BİLLUR A. A., KÖKSAL M.  
15th international workshop on Tau Lepton Physics, 24 - 28 September 2018
- III. **Limits on the anomalous magnetic and electric dipole moments of the tau-neutrino in pp collisions at the LHC**  
gutierrezrodriguez a., KÖKSAL M., BİLLUR A. A., hernandezruiz m.  
15th International Workshop on Tau Lepton Physics, 24 - 28 September 2018
- IV. **Limits on the anomalous magnetic and electric dipole moments of the -neutrino in pp collisions at the LHC**  
Gutierrezrodriguez A., KÖKSAL M., BİLLUR A. A., hernandezruiz M.  
the 15th International Workshop on Tau Lepton Physics, 24 - 28 September 2018
- V. **Probing the dipole moments of the top quark at high energy photon-photon collisions at the clic**  
BİLLUR A. A., KÖKSAL M., Gutierrezrodriguez A.  
Türk fizik Derneği 33. Uluslararası Fizik Kongresi, 6 - 10 September 2017
- VI. **Search for spin 3/2 excited leptons via photon-induced reactions at the LHC**  
İNAN S. C., BİLLUR A. A., KÖKSAL M.  
3rd International Conference on Engineering and Natural Science, 3 - 07 May 2017
- VII. **Probing for the anomalous electromagnetic moments of the tau lepton via electron-photon interactions at the CLIC**  
BİLLUR A. A., KÖKSAL M., İNAN S. C.  
3th International Conference on Engineering and Natural Sciences, 3 - 07 May 2017
- VIII. **Probing The Anomalous Electromagnetic Moments Of The Tau Lepton In  $\gamma\gamma$  Collisions At The LHC**  
KÖKSAL M., İNAN S. C., BİLLUR A. A., BAHAR M. K., Özgüven Y.  
Türk Fizik Derneği 33. Uluslararası Fizik Kongresi, 6 - 10 September 2017
- IX. **Search for anomalous  $tq\gamma$  interactions through gamma-gamma collisions at the CLIC**  
KÖKSAL M., İNAN S. C., BİLLUR A. A.  
3th International Conference on Engineering and Natural Sciences, 3 - 07 May 2017
- X. **Gauge Bosons Anomalous Quartic Couplings Search at the CLIC**  
İNAN S. C., KÖKSAL M., ŞENOL A.  
III. International Conference on Engineering and Natural Sciences, 3 - 07 May 2017
- XI. **Search for the electromagnetic dipole moments of the top quark at the clic**

KÖKSAL M., BİLLUR A. A., Gutierrezrodriguez A.

3RD international conference on engineering and natural sciences, 3 - 07 May 2017

**XII. Probing the Anomalous Quartic ZZGG Couplings in the Future Linear Colliders**

KÖKSAL M., ARI V., SENOL A.

IX. INTERNATIONAL WORKSHOP ON NUCLEAR STRUCTURE PROPERTIES, 1 - 03 September 2016

**XIII. Probing the dipole moments of the tau neutrino at high energy  $e e$  and  $gg$  collisions ILC and CLIC**

Alejandro G. R., KÖKSAL M., BİLLUR A. A.

European Physical Society Conference on High Energy Physics 2015, 22 - 29 July 2015

**XIV. Probing the dipole moments of the tau neutrino at high energy  $e e$  and collisions ILC and CLIC**

rodriguez alejandro g., KÖKSAL M., BİLLUR A. A.

European Physical Society HEP 2015, 22 - 29 July 2015, vol.52

**XV. The polarizability and the photoionization cross-section under the external fields for donor impurities in quantum well-wire**

Köksal M., Kasapoglu E., Sari H., Sokmen I.

International Conference on Superlattices, Nano-Structures and Nano-Devices, İstanbul, Turkey, 30 July - 04 August 2006, vol.4, pp.332-333

## **Metrics**

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