

Doç. Dr. SERGEY BORISENOK

Kişisel Bilgiler

E-posta: sergey.borisenok@agu.edu.tr

Web: <https://people.agu.edu.tr/sergeyborisenok>

Posta Adresi: Department of Electrical and Electronics Engineering, Faculty of Engineering, Abdullah Gül University, 38080 Kocasinan / Kayseri, Turkey

Uluslararası Araştırmacı ID'leri

ORCID: 0000-0002-1992-628X

ScopusID: 14055402800

Eğitim Bilgileri

Doktora, Leningrad Devlet Üniversitesi, Fizik Enstitüsü, Teorik, Rusya 1993 - 1996

Yüksek Lisans, Leningrad Devlet Üniversitesi, Fizik, İstatistik Fiziği, Rusya 1991 - 1993

Lisans, Leningrad Devlet Üniversitesi, Fizik, İstatistik Fiziği, Rusya 1987 - 1991

Yabancı Diller

İngilizce, C1 İleri

Rusça, C2 Ustalık

Yaptığı Tezler

Doktora, Quantum field theory mathematical methods in investigation of developed turbulent energy spectra, Leningrad Devlet Üniversitesi, Fizik Enstitüsü, Teoretik Fizik Bölümü, 1996

Yüksek Lisans, One dimensional spectrum of developed turbulence, Leningrad Devlet Üniversitesi, Fizik, İstatistik Fiziği, 1993

Araştırma Alanları

Yaşam Bilimleri, Matematik, Diferansiyel denklemler, Kısmi diferansiyel eşitlikler, Sistem Kuramı: Kontrol, Fizik, Disiplinlerarası Fizik ve İlgili Bilim ve Teknoloji Alanları, Malzeme Bilimi, Genel Fizik, İstatistik fizik, termodinamik ve nonlineer dinamik sistemler, Yoğun Madde 1:Yapısal, Mekanik ve Termal Özellikler , Temel Bilimler

Akademik Unvanlar / Görevler

Doç.Dr., Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2014 - Devam Ediyor

Doç.Dr., Universiti Putra Malaysia, Matematik Araştırma Enstitüsü , Matematik Araştırma Enstitüsü , 2013 - 2013

Doç.Dr., İstanbul Kültür Üniversitesi, Fen-Edebiyat Fakültesi, Fizik, 2010 - 2012

Doç.Dr., Gertsen Devlet Eğitim Enstitüsü, Fizik, Fizik Eğitimi , 2002 - 2010

verađı Dersler

Lisans

Kuantum İstatistiđinde Matematiksel Yöntemler , Lisans, 2010 - 2011

Yönetilen Tezler

BORISENOK S., Open Loop Control Methods in Non-Linear Dynamical Equations, Doktora, B.Ahmad(Öđrenci), 2009

BORISENOK S., Feedforward Control Design for Dynamical Systems, Doktora, N.Iqbal(Öđrenci), 2009

BORISENOK S., Control of Quantum Particle Dynamics by Modulated Optical Field, Doktora, S.Saifullah(Öđrenci), 2008

SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- I. **Control over the training performance of quantum state tomography with reservoir computing networks**
Borisenok S.
CYBERNETICS AND PHYSICS, cilt.13, sa.4, ss.275-280, 2024 (SSCI)
- II. **Speed gradient control over qubit states**
Borisenok S., Gogoleva E.
Cybernetics and Physics, cilt.13, sa.3, ss.193-196, 2024 (SCI-Expanded)
- III. **On feedback control algorithms for nitrogen-vacancy-cavity quantum sensing**
Borisenok S.
Cybernetics and Physics, cilt.13, sa.3, ss.187-192, 2024 (SCI-Expanded)
- IV. **Energy control in a quantum oscillator using coherent control and engineered environment**
Pechen A. N., BORISENOK S., Fradkov A. L.
CHAOS SOLITONS & FRACTALS, cilt.164, 2022 (SCI-Expanded)
- V. **Parameter investigation of topological data analysis for EEG signals**
ALTINDİŞ F., YILMAZ B., Borisenok S., İÇÖZ K.
Biomedical Signal Processing and Control, cilt.63, 2021 (SCI-Expanded)
- VI. **Solution to n-dimensional Sturm-Liouville-like equations using multi-dimensional Schwarzian**
Erkut M. H., Borisenok S., Caglar M., Polatoglu Y.
JOURNAL OF DIFFERENTIAL EQUATIONS, cilt.251, sa.12, ss.3403-3420, 2011 (SCI-Expanded)
- VII. **Linear feedforward control of two-level quantum system by modulated external field**
Borisenok S., Saifullah S.
OPTICS COMMUNICATIONS, cilt.284, sa.14, ss.3562-3567, 2011 (SCI-Expanded)
- VIII. **Thermodynamical approach to sympathetic cooling of neutral particles**
Borisenok S., Rozhdestvensky Y.
JOURNAL OF CHEMICAL PHYSICS, cilt.134, sa.4, 2011 (SCI-Expanded)
- IX. **Multi-dimensional Weiss operators**
Borisenok S., Erkut M. H., Polatoglu Y., Demirer M.
TURKISH JOURNAL OF MATHEMATICS, cilt.35, sa.4, ss.687-694, 2011 (SCI-Expanded)
- X. **Control of effective potential minima for Kapitza oscillator by periodical kicking pulses**
Ahmad B., Borisenok S.
PHYSICS LETTERS A, cilt.373, sa.7, ss.701-707, 2009 (SCI-Expanded)
- XI. **Open-loop control for focusing of neutral particles by modulated optical field**
Borisenok S., Iqbal N.
ACTA PHYSICA POLONICA A, cilt.114, sa.4, ss.751-759, 2008 (SCI-Expanded)
- XII. **Coherent adiabatic passage in atomic systems with a closed interaction contour**
Borisenok S., Rozhdestvenskii Y.
JOURNAL OF EXPERIMENTAL AND THEORETICAL PHYSICS, cilt.96, sa.1, ss.1-7, 2003 (SCI-Expanded)
- XIII. **Renormalization group in the theory of fully developed turbulence. The problem of infrared-**

essential corrections to the Navier-Stokes equation

Antonov N., Borisenok S., Girina V.

THEORETICAL AND MATHEMATICAL PHYSICS, cilt.107, sa.1, ss.456-468, 1996 (SCI-Expanded)

XIV. **Calculated spectra of decaying turbulence developed in the energy-containing and inertial ranges**

Adzhemyan L., Borisenok S., Nalimov M.

THEORETICAL AND MATHEMATICAL PHYSICS, cilt.106, sa.3, ss.341-348, 1996 (SCI-Expanded)

XV. **Renormalization group in the theory of fully developed turbulence. Composite operators of canonical dimension 8**

Antonov N., Borisenok S., Girina V.

THEORETICAL AND MATHEMATICAL PHYSICS, cilt.106, sa.1, ss.75-83, 1996 (SCI-Expanded)

XVI. **Renormalization group approach and short-distance expansion in theory of developed turbulence: Asymptotics of the triplex equal-time correlation function**

Adzhemyan L., Borisenok S., Girina V.

THEORETICAL AND MATHEMATICAL PHYSICS, cilt.105, sa.3, ss.1556-1565, 1995 (SCI-Expanded)

Diğer Dergilerde Yayınlanan Makaleler

- I. **Quantum Sensing in the Perspectives of Real-Life Applications**
Borisenok S.
International Journal of Advanced Natural Sciences and Engineering Researches, cilt.8, ss.288-293, 2024 (Hakemli Dergi)
- II. **Feedback Control over Response in the Cavity Quantum Electromagnetic Sensor**
Borisenok S.
International Journal of Advanced Natural Sciences and Engineering Researches, sa.8, ss.153-157, 2024 (Hakemli Dergi)
- III. **Different Epileptiform Regimes in the Neural Population Modelled by the Generalized Telegraph Equation**
Borisenok S.
International Journal of Advanced Natural Sciences and Engineering Researches, sa.8, ss.394-398, 2024 (Hakemli Dergi)
- IV. **Control on the Sensor Coherence of Transmon Superconducting Qubit via the Gradient Descent Algorithm**
Borisenok S.
International Journal of Advanced Natural Sciences and Engineering Researches, cilt.7, sa.11, ss.278-282, 2023 (Hakemli Dergi)
- V. **Feedback Control over Quantum Sensing Based on Bose-Einstein Condensate Trapped in Two-Dimensional Ring Potential**
Borisenok S.
International Journal of Advanced Natural Sciences and Engineering Researches, cilt.7, sa.10, ss.207-211, 2023 (Scopus)
- VI. **Tek Dönüştürülebilir Dinamik Araştırma Durumu ile Manyetik Alanı Algılama: Kuantum Fisher Bilgileri Yoluyla Algılama Hassasiyeti Üzerinde Kontrol**
Borisenok S.
European Journal of Science and Technology, cilt.48, ss.29-33, 2023 (Hakemli Dergi)
- VII. **Control over Amplification in Exciton Polariton Condensate**
Borisenok S.
European Journal of Science and Technology, cilt.39, ss.80-84, 2022 (Hakemli Dergi)
- VIII. **Detection and Control of Epileptiform Regime in the Hodgkin-Huxley Artificial Neural Networks via Quantum Algorithms**
Borisenok S.

- Cybernetics and Physics, cilt.11, sa.1, ss.5-10, 2022 (Scopus)
- IX. **Artificial neural network modeling and control for dynamical and statistical characteristics of photonic quantum memristor**
Borisenok S.
New Trends in Mathematical Sciences, cilt.10, sa.1, ss.13-18, 2022 (Hakemli Dergi)
- X. **Control Algorithms for Bosonic Quantum Batteries: Parallel versus Collective Charging**
Borisenok S.
European Journal of Engineering and Natural Sciences, cilt.6, sa.1, ss.1-6, 2021 (Hakemli Dergi)
- XI. **Speed Gradient Control Algorithm for Optogenetic Modeling**
Borisenok S.
European Journal of Science and Technology, cilt.28, ss.771-774, 2021 (Hakemli Dergi)
- XII. **QUANTUM ALGORITHMS WITH CONTROLLED HODGKIN-HUXLEY NEURONS**
Borisenok S.
MATTER: International Journal of Science and Technology, cilt.7, sa.3, ss.1-15, 2021 (Hakemli Dergi)
- XIII. **TARGET ATTRACTOR FORMED VIA FRACTIONAL FEEDBACK CONTROL**
Borisenok S.
Sigma Journal of Engineering and Natural Sciences , cilt.39, sa.5, ss.14-17, 2021 (ESCI)
- XIV. **Ergotropy of bosonic quantum battery driven via repelling feedback algorithms**
Borisenok S.
Cybernetics and Physics, cilt.10, sa.1, ss.9-12, 2021 (Scopus)
- XV. **Control over Cavity Assisted Charging for Dicke Quantum Battery**
Borisenok S.
European International Journal of Science and Technology, cilt.9, sa.6, ss.1-7, 2020 (Hakemli Dergi)
- XVI. **Ergotropy of Quantum Battery Controlled via Target Attractor Feedback**
Borisenok S.
IOSR Journal of Applied Physics, cilt.12, sa.3, ss.43-47, 2020 (Hakemli Dergi)
- XVII. **Control over performance of qubit-based sensors**
BORISENOK S.
Cybernetics and Physics, cilt.7, sa.3, ss.93-95, 2018 (Scopus)
- XVIII. **TRACKING OF ARBITRARY REGIMES FOR SPIKING AND BURSTING IN THE HODGKIN-HUXLEY NEURON**
Borisenok S., Ünal Z.
MATTER: International Journal of Science and Technology, cilt.3, sa.2, ss.560-576, 2017 (Hakemli Dergi)
- XIX. **Energy Transfer in Two-Level Quantum Systems via Speed Gradient-Based Algorithm**
Pechen A., BORISENOK S.
IFAC-PapersOnLine, cilt.48, ss.446-450, 2015 (Scopus)
- XX. **Coherent transfer of population in atomic systems with closed loop of interaction**
Borisenok S., Rozhdestvenskij Y.
Zhurnal Eksperimental'noj i Teoreticheskoy Fiziki, cilt.123, sa.1, ss.5-13, 2003 (Scopus)

Kitaplar

- I. **Small Neuron Number Analog of Restricted Boltzmann Machine**
Borisenok S.
NEW TRENDS IN ENGINEERING AND APPLIED NATURAL SCIENCES, Enes YİĞİT,Umut ÖZKAYA, Editör, Duvar, İzmir, ss.83-91, 2022
- II. **Quantum statistical mechanics**
Borisenok S.
Nauka, Moskva, 2011
- III. **Mechanics: Foundations**

Borisenok S.

Vyssshaya Shkola, Moskva, 2004

IV. Theoretical physics in pedagogical university

Borisenok S.

"Library of Russian Academy of Sciences" Publ., Sankt-Peterburg, 2004

V. The modern mathematical methods in the description of quantum non-equilibrium systems of interacting particles

Borisenok S.

St. Petersburg, Herzen University Publ, Sankt-Peterburg, 2003

VI. Canonical transforms in the course of theoretical physics

Borisenok S.

St. Petersburg, Herzen University Publ., Sankt-Peterburg, 2002

VII. Algebraic methods in the classical mechanics

Borisenok S.

Herzen University Publ, Sankt-Peterburg, 2002

Hakemli Bilimsel Toplantılarda Yayımlanmış Bildiriler

I. Feedback control over quantum sensing based on Bose-Einstein condensate trapped in two-dimensional ring potential

Borisenok S.

2nd International Conference on Contemporary Academic Research ICCAR 2023, Konya, Türkiye, 4 - 05 Kasım 2023, ss.91

II. Control over Epileptiform Behavior in Statistical Model of Small Neural Population

Borisenok S.

7th International Conference on Mathematics "An Istanbul Meeting for World Mathematicians", İstanbul, Türkiye, 11 - 13 Temmuz 2023, ss.135-143

III. Control over Quantum Fisher Information for Superconducting Qubit-based Sensors

Borisenok S.

7th International Conference on Mathematics "An Istanbul Meeting for World Mathematicians", İstanbul, Türkiye, 11 - 13 Temmuz 2023, ss.89-100

IV. Quantum Sensing via Superconducting Qubit Control

Borisenok S.

International Conference on Nonlinear Science and Complexity (ICNSC23), İstanbul, Türkiye, 10 - 15 Temmuz 2023, ss.162

V. Sensing Magnetic Field with Single-Spin Dynamical Probe State: Control over Sensing Precision via Quantum Fisher Information

Borisenok S.

1st International Conference on Frontiers in Academic Research, Konya, Türkiye, 18 - 21 Şubat 2023, ss.162

VI. Control over Slow Neuron Dynamics in the Stankevich-Mosekilde Model

Borisenok S.

1st International Conference on Innovative Academic Studies, Konya, Türkiye, 10 - 13 Eylül 2022, ss.645-648

VII. Control over Amplification in Exciton Polariton Condensate

Borisenok S.

3rd International Conference on Applied Engineering and Natural Sciences ICAENS 2022, Konya, Türkiye, 20 - 23 Temmuz 2022, ss.1292

VIII. Small Neuron Number Analog of Restricted Boltzmann Machine

Borisenok S.

1st International Conference on Engineering and Applied Natural Sciences (ICEANS 2022), Konya, Türkiye, 10 - 13 Mayıs 2022, ss.752

- IX. **Small-Scale Artificial Neural Networks for Statistical Modeling and Controlling Quantum Systems**
Borisenok S.
Kuantum Optiği ve Bilişimi Toplantısı KOBİT-6, Ankara, Türkiye, 3 - 04 Şubat 2022, ss.39
- X. **Statistical Physics Approach to Small Scale Artificial Neural Networks**
Borisenok S.
5th International Online Conference on Mathematics "An Istanbul Meeting for World Mathematicians", İstanbul, Türkiye, 1 - 03 Aralık 2021, ss.572-579
- XI. **Feedback Control for Attractor Dynamics in the Epileptor Model**
Borisenok S.
5th International Online Conference on Mathematics "An Istanbul Meeting for World Mathematicians", İstanbul, Türkiye, 1 - 03 Aralık 2021, ss.371-377
- XII. **Speed Gradient Control Algorithm for Optogenetic Modeling**
Borisenok S.
1st International Conference on Applied Engineering and Natural Sciences, Konya, Türkiye, 1 - 03 Kasım 2021, ss.732
- XIII. **Distributed Control for Detecting and Suppressing the Epileptiform Regime in the Populations of Hodgkin-Huxley Neurons**
Borisenok S.
5 TH INTERNATIONAL CONFERENCE ON ENGINEERING TECHNOLOGY AND INNOVATION, İstanbul, Türkiye, 13 - 17 Ekim 2021, ss.26-33
- XIV. **Modeling Optogenetic Control over Epileptiform Activity**
Borisenok S.
5 TH INTERNATIONAL CONFERENCE ON ENGINEERING TECHNOLOGY AND INNOVATION, İstanbul, Türkiye, 13 - 17 Ekim 2021, ss.34-40
- XV. **Detection and control of epileptiform regime in the Hodgkin-Huxley artificial neural networks via quantum algorithms**
Borisenok S.
The Tenth International Scientific Conference on Physics and Control PhysCon2021, Shanghai, Çin, 4 - 08 Ekim 2021, ss.32
- XVI. **Control Algorithms for Bosonic Quantum Batteries: Parallel versus Collective Charging**
Borisenok S.
7th International Conference on Engineering and Natural Sciences (ICENS 2021), Sarajevo, Bosna-Hersek, 23 - 27 Temmuz 2021, ss.55-59
- XVII. **Non-Classical Algorithm to Control Epileptiform Regime in the Small Population of Hodgkin-Huxley Neurons**
Borisenok S.
7th International Conference on Engineering and Natural Sciences (ICENS 2021), Sarajevo, Bosna-Hersek, 23 - 27 Temmuz 2021, ss.60-66
- XVIII. **Deutsch – Jozsa Algorithm with Feedback Controlled FitzHugh – Nagumo Neurons**
Borisenok S.
II. International Conference on Innovative Engineering Applications (CIEA'2021), 2021, Muş, Türkiye, 20 - 22 Mayıs 2021, ss.193-197
- XIX. **Feedback Control over the Charging Power of Quantum Battery**
Borisenok S.
II. International Conference on Innovative Engineering Applications (CIEA'2021), 2021, Muş, Türkiye, 20 Mayıs - 22 Haziran 2021, ss.198-202
- XX. **Stabilization via Kolesnikov's Fractional Feedback**
Borisenok S.
FIRST ONLINE CONFERENCE ON MODERN FRACTIONAL CALCULUS AND ITS APPLICATIONS (OCMFCA-2020), İstanbul, Türkiye, 5 - 06 Aralık 2020, ss.1
- XXI. **Target Repeller Feedback Control over the Ergotropy of Quantum Battery**

Borisenok S.

6th INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES (ICENS), Belgrade, Sırbistan, 21 - 25 Ekim 2020, ss.15-19

XXII. Quantum Batteries Driven via Feedback Algorithms

Borisenok S.

4th INTERNATIONAL CONFERENCE ON MATHEMATICS "An Istanbul Meeting for World Mathematicians" ICOM 2020, İstanbul, Türkiye, 27 - 30 Ekim 2020, ss.458-462

XXIII. Can Controlled Hodgkin – Huxley Neuron Model Quantum Computations?

Borisenok S.

6th INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES (ICENS), Belgrade, Sırbistan, 21 - 25 Ekim 2020, ss.9-14

XXIV. Controlled Hodgkin – Huxley Neuron vs Controlled Qubit: Pros and Cons of Their Applications

Borisenok S.

4th International Conference on Mathematics "An Istanbul Meeting for World Mathematicians" ICOM 2020, 27 - 30 Ekim 2020, ss.212-217

XXV. Use of Topological Data Analysis in Motor Intention Based Brain-Computer Interfaces

ALTINDIŞ F., YILMAZ B., BORISENOK S., İÇÖZ K.

European Signal Processing Conference (EUSIPCO), Rome, İtalya, 3 - 07 Ağustos 2018, ss.1695-1699

XXVI. Target Attractor Tracking of Relative Phase in Bosonic Josephson Junction

BORISENOK S.

2nd International Conference on Mathematical Sciences and Statistics (ICMSS), Kuala-Lumpur, Malezya, 26 - 28 Ocak 2016, cilt.1739

XXVII. TRACKING WITH TARGET ATTRACTOR FEEDBACK IN SUPERCONDUCTING JOSEPHSON JUNCTION

BORISENOK S.

PHYSCON 2015, İstanbul, Türkiye, 19 - 22 Ağustos 2015, ss.1-4

XXVIII. EEG informational code dependence on the functional state: General trends and characteristic period

Mekler A. A., BORISENOK S.

17th World Congress of Psychophysiology of the International-Organization-of-Psychophysiology (IOP), Hiroshima, Japonya, 23 - 27 Eylül 2014, cilt.94, ss.190

XXIX. Mathematical Models of Brain Dynamics: Progress and Perspectives

Borisenok S.

5th International Conference on Research and Education in Mathematics (ICREM), Bandung, Endonezya, 22 - 24 Ekim 2011, cilt.1450, ss.18-22

XXX. Speed gradient control of qubit state

Borisenok S., Fradkov A., Proskurnikov A.

IFAC International Workshop on Periodic Control Systems, PSYCO 2010, Antalya, Türkiye, 26 - 28 Ağustos 2010, cilt.4, ss.81-85

XXXI. Multi-zone atom beam splitter by Raman transitions

Borisenok S., Selishcheva Y. D., Rozhdestvensky Y. V.

ICONO 2005 Conference, St Petersburg, Rusya, 11 - 15 Mayıs 2005, cilt.6256

XXXII. Statistical control in dynamical non-linear systems

Borisenok S.

International Conference on Physics and Control (PHYSCON 2005), St Petersburg, Rusya, 24 - 26 Ağustos 2005, ss.145-149

XXXIII. Multi-zone coherent atomic beam splitter control by Raman transitions

Borisenok S., Rozhdestvensky Y., Selishcheva Y.

International Conference on Physics and Control (PHYSCON 2005), St Petersburg, Rusya, 24 - 26 Ağustos 2005, ss.150-154

XXXIV. Scale splitting control for an atom wave packet coherent scattering in modulated standing wave

Borisenok S., Rozhdestvensky Y., Udov G.

International Conference on Physics and Control (PHYSCON 2003), ST PETERSBURG, Rusya, 20 - 22 Ağustos 2003, ss.913-916

XXXV. Speed-gradient control of cooled atom dynamics in potential of standing wave

Borisenok S., Rozhdestvensky Y., Fradkov A., Andrievsky B., Matisov B.

International Conference on Physics and Control (PHYSCON 2003), ST PETERSBURG, Rusya, 20 - 22 Ağustos 2003, ss.909-912

XXXVI. Coherent atomic beam splitter control for nano-scale atom wave packet lithography

Borisenok S., Rozhdestvensky Y.

International Conference on Physics and Control (PHYSCON 2003), ST PETERSBURG, Rusya, 20 - 22 Ağustos 2003, ss.906-908

Desteklenen Projeler

BORISENOK S., Yükseköğretim Kurumları Destekli Proje, Geribesleme kontrol algoritmaları ile kubit tabanlı sensörlerin verimliliğinin artırılması, 2023 - Devam Ediyor

Borisenok S., TÜBİTAK Projesi, Hodgkin-Huxley nöronlarında ani yükseliş ve fırlama dinamiklerinin kontrolü, 2016 - 2018

YILMAZ B., İÇÖZ K., BORISENOK S., ERKUTLU İ., Yükseköğretim Kurumları Destekli Proje, Motor niyet dalgaları tabanlı ihtiyaç iletim sistemi tasarımı, 2015 - 2017

ABLAY G., ALTINTAŞ A., BORISENOK S., Öğrencisi Y., Öğrencisi Y., Yükseköğretim Kurumları Destekli Proje, Elektronik Devrelerinde Kaotikleştirme ve Rastgeleleştirme için Geribeslemeli Algoritmalar ve Bunların Güvenli Haberleşme Uygulamaları, 2015 - 2017

BORISENOK S., MÜSTECAPLIOĞLU Ö. E., Yükseköğretim Kurumları Destekli Proje, Josephson Eklemleri Kontrolü Dinamiği, 2015 - 2017

Metrikler

Yayın: 79

Atf (WoS): 45

Atf (Scopus): 79

H-İndeks (WoS): 3

H-İndeks (Scopus): 5