

Assoc. Prof. SERGEY BORISENOK

Personal Information

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Education Information

Doctorate, Leningrad Devlet Üniversitesi, Fizik Enstitüsü, Teorik, Russia 1993 - 1996

Postgraduate, Leningrad Devlet Üniversitesi, Fizik, İstatistik Fiziği, Russia 1991 - 1993

Undergraduate, Leningrad Devlet Üniversitesi, Fizik, İstatistik Fiziği, Russia 1987 - 1991

Foreign Languages

Russian, C2 Mastery

English, C1 Advanced

Dissertations

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

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

Research Areas

Life Sciences, Mathematics, Differential Equations, Partial Differential Equations, System Theory: Control, Physics, Interdisciplinary Physics and Related Science and Technology Areas, Materials Science, General Physics, Statistical physics, thermodynamic and nonlinear dynamic systems, Condensed Matter 1: Structural, Mechanical and Thermal Properties, Natural Sciences

Academic Titles / Tasks

Associate Professor, Abdullah Gul University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2014 - Continues
Associate Professor, Universiti Putra Malaysia, Matematik Araştırma Enstitüsü , Matematik Araştırma Enstitüsü , 2013 - 2013

Associate Professor, İstanbul Kültür Üniversitesi, Fen-Edebiyat Fakültesi, Fizik, 2010 - 2012

Associate Professor, Gertsen Devlet Eğitim Enstitüsü, Fizik, Fizik Eğitimi , 2002 - 2010

Courses

Advising Theses

- BORISENOK S., Open Loop Control Methods in Non-Linear Dynamical Equations, Doctorate, B.Ahmad(Student), 2009
BORISENOK S., Feedforward Control Design for Dynamical Systems, Doctorate, N.Iqbal(Student), 2009
BORISENOK S., Control of Quantum Particle Dynamics by Modulated Optical Field, Doctorate, S.Saifullah(Student), 2008

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Parameter investigation of topological data analysis for EEG signals**
ALTINDİŞ F., YILMAZ B., Borisenok S., İÇÖZ K.
Biomedical Signal Processing and Control, vol.63, 2021 (Journal Indexed in SCI)
- II. **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, vol.251, no.12, pp.3403-3420, 2011 (Journal Indexed in SCI)
- III. **Linear feedforward control of two-level quantum system by modulated external field**
Borisenok S., Saifullah S.
OPTICS COMMUNICATIONS, vol.284, no.14, pp.3562-3567, 2011 (Journal Indexed in SCI)
- IV. **Thermodynamical approach to sympathetic cooling of neutral particles**
Borisenok S., Rozhdestvensky Y.
JOURNAL OF CHEMICAL PHYSICS, vol.134, no.4, 2011 (Journal Indexed in SCI)
- V. **Multi-dimensional Weiss operators**
Borisenok S., Erkut M. H. , Polatoglu Y., Demirer M.
TURKISH JOURNAL OF MATHEMATICS, vol.35, no.4, pp.687-694, 2011 (Journal Indexed in SCI)
- VI. **Control of effective potential minima for Kapitza oscillator by periodical kicking pulses**
Ahmad B., Borisenok S.
PHYSICS LETTERS A, vol.373, no.7, pp.701-707, 2009 (Journal Indexed in SCI)
- VII. **Open-loop control for focusing of neutral particles by modulated optical field**
Borisenok S., Iqbal N.
ACTA PHYSICA POLONICA A, vol.114, no.4, pp.751-759, 2008 (Journal Indexed in SCI)
- VIII. **Coherent adiabatic passage in atomic systems with a closed interaction contour**
Borisenok S., Rozhdestvenskii Y.
JOURNAL OF EXPERIMENTAL AND THEORETICAL PHYSICS, vol.96, no.1, pp.1-7, 2003 (Journal Indexed in SCI)
- IX. **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, vol.107, no.1, pp.456-468, 1996 (Journal Indexed in SCI)
- X. **Calculated spectra of decaying turbulence developed in the energy-containing and inertial ranges**
Adzhemyan L., Borisenok S., Nalimov M.
THEORETICAL AND MATHEMATICAL PHYSICS, vol.106, no.3, pp.341-348, 1996 (Journal Indexed in SCI)
- XI. **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, vol.106, no.1, pp.75-83, 1996 (Journal Indexed in SCI)
- XII. **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, vol.105, no.3, pp.1556-1565, 1995 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **QUANTUM ALGORITHMS WITH CONTROLLED HODGKIN-HUXLEY NEURONS**
Borisenok S.
MATTER: International Journal of Science and Technology, vol.7, no.3, pp.1-15, 2021 (Refereed Journals of Other Institutions)
- II. **Speed Gradient Control Algorithm for Optogenetic Modeling**
Borisenok S.
European Journal of Science and Technology, vol.28, pp.771-774, 2021 (Refereed Journals of Other Institutions)
- III. **Ergotropy of bosonic quantum battery driven via repelling feedback algorithms**
Borisenok S.
Cybernetics and Physics, vol.10, no.1, pp.9-12, 2021 (Refereed Journals of Other Institutions)
- IV. **Control over Cavity Assisted Charging for Dicke Quantum Battery**
Borisenok S.
European International Journal of Science and Technology, vol.9, no.6, pp.1-7, 2020 (Refereed Journals of Other Institutions)
- V. **Ergotropy of Quantum Battery Controlled via Target Attractor Feedback**
Borisenok S.
IOSR Journal of Applied Physics, vol.12, no.3, pp.43-47, 2020 (Refereed Journals of Other Institutions)
- VI. **Control over performance of qubit-based sensors**
BORISENOK S.
Cybernetics and Physics, vol.7, no.3, pp.93-95, 2018 (Refereed Journals of Other Institutions)
- VII. **TRACKING OF ARBITRARY REGIMES FOR SPIKING AND BURSTING IN THE HODGKIN-HUXLEY NEURON**
Borisenok S., Ünal Z.
MATTER: International Journal of Science and Technology, vol.3, no.2, pp.560-576, 2017 (Journal Indexed in ESCI)
- VIII. **Energy Transfer in Two-Level Quantum Systems via Speed Gradient-Based Algorithm**
Pechen A., BORISENOK S.
IFAC-PapersOnLine, vol.48, pp.446-450, 2015 (Refereed Journals of Other Institutions)
- IX. **Coherent transfer of population in atomic systems with closed loop of interaction**
Borisenok S., Rozhdestvenskij Y.
Zhurnal Eksperimental'noj i Teoreticheskoy Fiziki, vol.123, no.1, pp.5-13, 2003 (Refereed Journals of Other Institutions)

Refereed Congress / Symposium Publications in Proceedings

- I. **Statistical Physics Approach to Small Scale Artificial Neural Networks**
Borisenok S.
5th International Online Conference on Mathematics "An Istanbul Meeting for World Mathematicians", İstanbul, Turkey, 1 - 03 December 2021, pp.572-579
- II. **Feedback Control for Attractor Dynamics in the Epileptor Model**
Borisenok S.
5th International Online Conference on Mathematics "An Istanbul Meeting for World Mathematicians", İstanbul, Turkey, 1 - 03 December 2021, pp.371-377
- III. **Speed Gradient Control Algorithm for Optogenetic Modeling**
Borisenok S.
1st International Conference on Applied Engineering and Natural Sciences, Konya, Turkey, 1 - 03 November 2021, pp.732
- IV. **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, Turkey, 13 - 17 October 2021, pp.26-33

V. Modeling Optogenetic Control over Epileptiform Activity

Borisenok S.

5 TH INTERNATIONAL CONFERENCE ON ENGINEERING TECHNOLOGY AND INNOVATION, İstanbul, Turkey, 13 - 17 October 2021, pp.34-40

VI. 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, China, 4 - 08 October 2021, pp.32

VII. 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, Bosnia And Herzegovina, 23 - 27 July 2021, pp.60-66

VIII. Control Algorithms for Bosonic Quantum Batteries: Parallel versus Collective Charging

Borisenok S.

7th International Conference on Engineering and Natural Sciences (ICENS 2021), Sarajevo, Bosnia And Herzegovina, 23 - 27 July 2021, pp.55-59

IX. Feedback Control over the Charging Power of Quantum Battery

Borisenok S.

II. International Conference on Innovative Engineering Applications (CIEA'2021), 2021, Muş, Turkey, 20 May - 22 June 2021, pp.198-202

X. Deutsch – Jozsa Algorithm with Feedback Controlled FitzHugh – Nagumo Neurons

Borisenok S.

II. International Conference on Innovative Engineering Applications (CIEA'2021), 2021, Muş, Turkey, 20 - 22 May 2021, pp.193-197

XI. Stabilization via Kolesnikov's Fractional Feedback

Borisenok S.

FIRST ONLINE CONFERENCE ON MODERN FRACTIONAL CALCULUS AND ITS APPLICATIONS (OCMFCA-2020), İstanbul, Turkey, 5 - 06 December 2020, pp.1

XII. Target Repeller Feedback Control over the Ergotropy of Quantum Battery

Borisenok S.

6th INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES (ICENS), Belgrade, Serbia, 21 - 25 October 2020, pp.15-19

XIII. 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 October 2020, pp.212-217

XIV. Quantum Batteries Driven via Feedback Algorithms

Borisenok S.

4th INTERNATIONAL CONFERENCE ON MATHEMATICS "An Istanbul Meeting for World Mathematicians" ICOM 2020, İstanbul, Turkey, 27 - 30 October 2020, pp.458-462

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

Borisenok S.

6th INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES (ICENS), Belgrade, Serbia, 21 - 25 October 2020, pp.9-14

XVI. 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, Italy, 3 - 07 August 2018, pp.1695-1699

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

BORISENOK S.

2nd International Conference on Mathematical Sciences and Statistics (ICMSS), Kuala-Lumpur, Malaysia, 26 - 28 January 2016, vol.1739

XVIII. TRACKING WITH TARGET ATTRACTOR FEEDBACK IN SUPERCONDUCTING JOSEPHSON JUNCTION

BORISENOK S.

PHYSICON 2015, İstanbul, Turkey, 19 - 22 August 2015, pp.1-4

XIX. 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, Japan, 23 - 27 September 2014, vol.94, pp.190

XX. Mathematical Models of Brain Dynamics: Progress and Perspectives

Borisenok S.

5th International Conference on Research and Education in Mathematics (ICREM), Bandung, Indonesia, 22 - 24 October 2011, vol.1450, pp.18-22

XXI. Speed gradient control of qubit state

Borisenok S., Fradkov A., Proskurnikov A.

IFAC International Workshop on Periodic Control Systems, PSYCO 2010, Antalya, Turkey, 26 - 28 August 2010, vol.4, pp.81-85

XXII. Multi-zone atom beam splitter by Raman transitions

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

ICONO 2005 Conference, St Petersburg, Russia, 11 - 15 May 2005, vol.6256

XXIII. Statistical control in dynamical non-linear systems

Borisenok S.

International Conference on Physics and Control (PHYSICON 2005), St Petersburg, Russia, 24 - 26 August 2005, pp.145-149

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

Borisenok S., Rozhdestvensky Y., Selishcheva Y.

International Conference on Physics and Control (PHYSICON 2005), St Petersburg, Russia, 24 - 26 August 2005, pp.150-154

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

Borisenok S., Rozhdestvensky Y.

International Conference on Physics and Control (PHYSICON 2003), ST PETERSBURG, Russia, 20 - 22 August 2003, pp.906-908

XXVI. 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 (PHYSICON 2003), ST PETERSBURG, Russia, 20 - 22 August 2003, pp.913-916

XXVII. 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 (PHYSICON 2003), ST PETERSBURG, Russia, 20 - 22 August 2003, pp.909-912

Supported Projects

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

YILMAZ B., İÇÖZ K., BORISENOK S., ERKUTLU İ., Project Supported by Higher Education Institutions, Motor niyet dalgaları

tabanlı ihtiyaç iletim sistemi tasarımı, 2015 - 2017

ABLAY G., ALTINTAŞ A., BORISENOK S., Öğrencisi Y., Öğrencisi Y., Project Supported by Higher Education Institutions, Elektronik Devrelerinde Kaotikleştirme ve Rastgeleleştirme için Geribeslemeli Algoritmalar ve Bunların Güvenli Haberleşme Uygulamaları, 2015 - 2017

BORISENOK S., MÜSTECAPLIOĞLU Ö. E. , Project Supported by Higher Education Institutions, Josephson Eklemleri Kontrolü Dinamiği, 2015 - 2017

Citations

Total Citations (WOS):41

h-index (WOS):3