

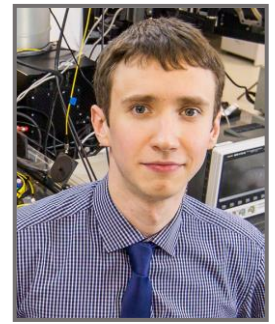
Evgeniy Kiktenko

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Education

- 2012 – 2017 **Ph.D. in Theoretical Physics**
Lebedev Physical Institute of the Russian Academy of Sciences
Subject: *Role of entropic asymmetry in bipartite quantum states*
Supervisor: Prof. S.M. Korotaev
- 2010 – 2012 **Master of Technology in Applied physics** (Specialization: Optics and Quantum Electronics)
Bauman Moscow State Technical University
Subject: *Causal analysis of quantum entangled states*
Supervisor: Prof. S.M. Korotaev
- 2006 – 2010 **Bachelor of Technology in Applied physics** (Specialization: Optics and Quantum Electronics)
Bauman Moscow State Technical University
Subject: *Causal analysis of quantum states*
Supervisor: Prof. S.M. Korotaev

Research Experience

- Jun 2017 – present **Research Fellow** Russian Quantum Center
- Dec 2016 – present **Researcher Fellow** Steklov Mathematical Institute of Russian Academy of Sciences
- Oct 2015 – Dec 2016 **Deputy Head** DEPHAN, Theoretical Department
- Jun 2014 – present **Senior Engineer / Junior Researcher / Research Fellow**
Geoelectromagnetic Research Centre of Schmidt Institute of Physics of the Earth,
Russian Academy of Sciences

Honors and Awards

- Nov 22 2017 Prize-winner on 59th MIPT Scientific Conference (*Moscow Institute of Physics and Technology*)
- July 08 2015 The best poster on 22nd Central European Workshop on Quantum Optics (*University of Warsaw, Physics Department, Warsaw, Poland*)
- Mar 02 2015 The best poster of conference-competition of young scientists in the section of “Fundamental Physics” (*Moscow Physical society, Bauman Moscow State Technical University, Lebedev Physical Institute of the Russian Academy of Sciences*)
- Feb 13 2014 3-d place in conference-competition of young scientists in the section of “Fundamental Physics” (*Moscow Physical society, Bauman Moscow State Technical University, Lebedev Physical Institute of the Russian Academy of Sciences*)
- Feb 2013 – Dec 2015 Grant of the President of the Russian Federation for young scientists and postgraduates
- Dec 10 2012 3-d place in conference-competition of young scientists in the section of “Fundamental Physics” (*Moscow Physical society, Bauman Moscow State Technical University, Lebedev Physical Institute of the Russian Academy of Sciences*)
- Jul 5 2012 Prize-winner of Russian youth competition of research in applied and fundamental physics (*The Ministry of Education and Science of the Russian Federation, Bauman Moscow State*)

2011 – 2012 *Technical University*)

2010 – 2011 The Russian Federation Presidential scholarship

2006 Scholarship of “Imperial Technical School Club”

2006 Award for talented young people instituted by the president of the Russian Federation

Prize-winner of Russian Polytechnic Olympiad

Publications in peer-reviewed journals

- A. A. Zhukov, E. O. Kiktenko, A. A. Elistratov et al. *Quantum communication protocols as a benchmark for programmable quantum computers*, Quantum Inf. Process. 18:31 (2019).
- A. K. Fedorov, E. O. Kiktenko, A. I. Lvovsky, *Quantum computers put blockchain security at risk*, Nature, 563, 465 (2018).
- E. O. Kiktenko, N. O. Pozhar, M. N. Anufriev et al. *Quantum-secured blockchain*, Quantum Sci. Technol. 3:3, 35004 (2018).
- A. V. Duplinskiy, E. O. Kiktenko, N. O. Pozhar et al. *Quantum-Secured Data Transmission in Urban Fiber-Optics Communication Lines*, J. Russ. Laser Res. 39:2, 119 (2018).
- A. S. Trushechkin, P. A. Tregubov, E. O. Kiktenko, et al. *Quantum-key-distribution protocol with pseudorandom bases*, Phys. Rev. A 97, 012311 (2018).
- A. K. Fedorov, E. O. Kiktenko, A. S. Trushechkin, *Symmetric Blind Information Reconciliation and Hash-function-based Verification for Quantum Key Distribution*, Lobachevskii J. Math. 39:7, 992–996 (2018).
- E. O. Kiktenko, A. O. Malyshev, A. A. Bozhedarov et al. *Error Estimation at the Information Reconciliation Stage of Quantum Key Distribution*, J. Russ. Laser Res. 39:6, 558 (2018).
- E.O. Kiktenko, A.S. Trushechkin, C.C.W. Lim et al. *Symmetric Blind Information Reconciliation for Quantum Key Distribution*, Phys. Rev. Applied 8, 044017 (2017).
- A.S. Trushechkin, E.O. Kiktenko, and A.K. Fedorov, *Practical issues in decoy-state quantum key distribution based on the central limit theorem*, Phys. Rev. A 96, 022316 (2017).
- E. O. Kiktenko, N.O. Pozhar, A.V. Duplinskiy et al. *Demonstration of a quantum key distribution network in urban fibre-optic communication lines*, Quantum Electron. 47, 798 (2017).
- D. A. Kronberg, E. O. Kiktenko, A.K. Fedorov, and Y.V. Kurochkin, *Analysis of coherent quantum cryptography protocol vulnerability to an active beam-splitting attack*, Quantum Electron. 47, 163 (2017).
- E. O. Kiktenko, A.A. Popov, and A.K. Fedorov, *Bidirectional imperfect quantum teleportation with a single Bell state*, Phys. Rev. A 93, 062305 (2016).
- E. O. Kiktenko, A. K. Fedorov, O. V. Man'ko, and V. I. Man'ko, *Multilevel superconducting circuits as two-qubit systems: Operations, state preparation, and entropic inequalities*, Phys. Rev. A 91, 042312 (2015).
- E. O. Kiktenko, A. K. Fedorov, A. A. Strakhov, and V. I. Man'ko, *Single qudit realization of the Deutsch algorithm using superconducting many-level quantum circuits*, Phys. Lett. A 379, 1409 (2015).
- A. K. Fedorov, E. O. Kiktenko, O. V. Man'ko, V. I. Man'ko *Tomographic discord for a system of two coupled nanoelectric circuits // Phys. Scr. 90 (2015) 055101.*
- E. O. Kiktenko and A. K. Fedorov, *Tomographic causal analysis of two-qubit states and tomographic discord*, Phys. Lett. A 378, 1704 (2014).
- A. K. Fedorov and E. O. Kiktenko, *Quaternion Representation and Symplectic Spin Tomography*, J. Rus. Las. Res. 34, 477 (2013).
- S. M. Korotaev, E. O. Kiktenko, S. P. Gaidash, et al. *Relationship between variations in the electric field's vertical component in Lake Baikal and solar activity*, Geomagnetism and Aeronomy 53, 769 (2013).
- E. O. Kiktenko and S. M. Korotaev, *Entanglement and causality in the interaction of the two-level atom with the field*, Phys. Scr. 88, 055008 (2013).
- S. M. Korotaev and E. O. Kiktenko, *Causality and decoherence in the asymmetric states*, Phys. Scr. 85, 055006 (2012).
- E. O. Kiktenko and S. M. Korotaev, *Causal analysis of asymmetric entangled states under decoherence*, Phys. Lett. A 376, 820 (2012).

Other publications

- S. V. Rozanov and E. O. Kiktenko, *Approximation of mutual information in a bipartite quantum state under single-party decoherence*, J. Phys. Conf. Ser. 918, 12006 (2017).
- E. O. Kiktenko, A. S. Trushechkin, Y. V. Kurochkin, and A. K. Fedorov, *Post-processing procedure for industrial quantum key distribution systems*, J. Phys. Conf. Ser. 74, 012081 (2016).
- A. K. Fedorov and E. O. Kiktenko, *Mutual information-energy inequality for thermal states of a bipartite quantum system* J. Phys.: Conf. Ser. 594, 012045 (2015).
- S. M. Korotaev and E. O. Kiktenko, *Quantum Causal Analysis*, International Journal of Computing Anticipatory Systems 27, 77 (2014).
- S. M. Korotaev and E. O. Kiktenko, *Quantum Causality*, Physics of Reality: Space, Time, Matter, Cosmos. World Scientific, 273 (2013).
- S. M. Korotaev and E. O. Kiktenko, *Causal analysis of the quantum states*, AIP Conference Proceedings 1316, 295 (2010).

Preprints

- E. O. Kiktenko, A. O. Malyshev, M. A. Gavreev, et al. Lightweight authentication for quantum key distribution arXiv:1903.10237.
- Y. A. Kharkov, V. E. Sotskov, A. A. Karazeev, E. O. Kiktenko, and A. K. Fedorov, *Revealing quantum chaos with machine learning*, arXiv:1902.09216.

Reviewing of scientific journals

Physical Review Applied, Entropy, Proceedings of the Royal Society A, IEEE Communications Letters, Physica Scripta

Teaching Experience

- Oct 2017 – present **Participation in the course** “Mathematics in quantum technologies”, Steklov Mathematical Institute of Russian Academy of Sciences (together with A Pechen and D. Kronberg)
- Sep 2016 – May 2017 **Participation in the course** “Quantum cryptography”, Steklov Mathematical Institute of Russian Academy of Sciences (together with A. Trushechkin and D. Kronberg)
- Sep 2015 – Jan 2017 **Lecture course** “Additional chapters on theoretical physics”, Bauman Moscow State Technical University
- Sep 2013 – Dec 2013 **Lecture course** “Quantum optics”, Bauman Moscow State Technical University
- Jan 2014 – Jun 2014 **Practical and lab works** on “General Physics”, Bauman Moscow State Technical University

Participation in grants

- 2018 – 2020 RFBR 18-37-20033 “Development of methods and algorithms for managing quantum communications networks”
- 2018 – 2020 RFBR 18-37-00096 “Information processing in quantum key distribution system and quantum-secured communication”
- 2017 – 2020 RSF 17-71- 20146 “The problems of transfer and processing of quantum information relevant for the development of quantum technologies”
- 2017 – 2018 MK-2815.2017.1 «Entropy production in open quantum systems from the point of view of quantum information theory»
- 2014 – 2017 Federal Program 14.579.21.0104 «Development of algorithms for quantum key processing»
- 2015 – 2017 RFBR 15-05-00609 «Deepwater integrated monitoring of the hydrosphere-lithospheric section of the global electrical circuit in Lake Baikal»
- 2014 – 2015 RFBR 14-45-04053 «Electromagnetic prognostic monitoring of earthquakes in Lake Baikal»

and processes in the conjugate geospheres using underwater, ground-based and satellite instruments»

Professional Skills

Languages	English (advanced), Russian (native)
Mathematical packages	Maple, Matlab (Octave), Origin
Programming languages	C, C++, Delphi (Pascal), Python
OS	Windows, basics of Linux (bash)

Additional Education

Aug 22 – 27 2017	Summer school of the Russian Quantum Center
Feb – Dec 2013	Fundamentals of Quantum Information Theory Special course by <i>A.S. Holevo</i> at Steklov Mathematical Institute
Jul 15 – 18 2013	Summer school of the Russian Quantum Center
Mar 17 – 23 2013	Spring school of the Russian Quantum Center
Oct 8 – 19 2012	Atom based quantum interfaces PreDoc school International Cold Atom Network, Les Houches, France

Current projects

- Quantum computation with qudits
- Representation of quantum processes with pseudo-stochastics maps
- Precision guaranteed state and process tomography
- Quantum machine learning
- Unconditionally secure consensus protocols in QKD networks

Links on scientific databases

- **Researcher Id** J-7288-2012
- **SPIN** 2674-3627
- **ORCID** <http://orcid.org/0000-0001-5760-441X>
- **Scopus Id** 36809945300
- **Research gate** https://www.researchgate.net/profile/Evgeny_Kiktenko
- **Math-Net** <http://www.mathnet.ru/person121501>

References

Prof. Sergey Korotaev	Head of Laboratory of Geoelectromagnetic Research Centre, Schmidt Institute of Physics of the Earth, Russian Academy of Sciences E-mail: korotaev@igemi.troitsk.ru
Prof. Andrey Morozov	Head of Physics Department, Bauman Moscow State Technical University E-mail: amor@mx.bmstu.ru
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Dr. Yuriy Kurochkin Principal investigator of “Quantum communication” group
Russian Quantum Center
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Prof. Alexandr Pechen Principal investigator of “Mathematical method of quantum technologies” group
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