

# Konstantin Tikhonov

## Curriculum Vitae

### Personal Details

Date of birth 13.01.1987  
Sex Male  
Citizenship Russian Federation

### Education

2010–2015 **PhD in Physics**, *Texas A&M University*, College Station, USA.  
2009–2012 **Candidate of Science in Mathematics And Physics**, *Landau Institute for Theoretical Physics*, Chernogolovka, Russia.  
2007–2009 **Master of Science in Applied Physics and Mathematics**, *Moscow Institute for Physics and Technology*, Moscow, Russia.  
2003–2007 **Bachelor of Science in Applied Physics and Mathematics**, *Moscow Institute for Physics and Technology*, Moscow, Russia.

### Employment History

2017 **Contract Research Scientist**, *Center for Photonics and Quantum Materials*, Skolkovo Institute for Science and Technology, Moscow, Russia.  
2017 May–Jul **Visiting Scientist**, *Karlsruhe Institute for Technology*, Karlsruhe, Germany.  
2016–Present **Senior Research Fellow**, *Laboratory for Condensed Matter Physics*, Higher School of Economics, Moscow, Russia.  
2014–2016 **Junior Research Scientist**, *Laboratory for Theoretical Nanophysics*, Moscow Institute for Physics and Technology, Dolgoprudny, Russia.  
2014–Present **Research Scientist**, *Landau Institute for Theoretical Physics*, Chernogolovka, Russia.  
2013 May–Jul **Visiting Scientist**, *Weizmann Institute of Science*, Rehovoth, Israel.  
2010–2012 **Research Assistant**, *TAMU*, College Station, USA.

### Professional Services

2017-Present Editorial Board Member, *Journal of Experimental and Theoretical Physics*  
2014-Present Refereeing papers for *Phys Rev Letters*, *Phys Rev B*, *New Journal of Physics*, *Europhysics Letters*

### Talks

10 Oct 2018 The SIT and Low-Dimensional Superconductors, Grenoble, France. 'Quantum superconductor-metal transition with spatially inhomogeneous Cooper attraction'

- 7 Oct 2018 Random Matrices, Integrability and Complex Systems, Yad Hashmona, Israel. 'SYK model with quadratic perturbations: The route to a non-Fermi-liquid'
- 25 Sep 2018 Workshop on Anderson Localization and Interactions, Dresden, Germany. 'Statistics of eigenstates near the localization transition on a random regular graph'
- 3 Jul 2018 Workshop on Localization, Interactions and Superconductivity, Chernogolovka, Russia. 'Statistics of eigenstates near the localization transition on a random regular graph'
- 13 Jun 2018 Conference on Quantum Dynamics of Disordered Interacting Systems, Trieste, Italy. 'Many-body localization transition with power-law interactions'
- 21 Dec 2017 Workshop/school on localization, interactions and superconductivity, Chernogolovka, Russia. 'Many-body localization transition with power-law interactions'
- 13 Dec 2017 Winter School on Quantum Condensed-matter Physics, Chernogolovka, Russia. 'Localization on tree-like structures and in many-body systems'
- 30 Nov 2017 School for young scientists: Interaction of Radiation with Quantum devices and their Applications, Moscow, Russia. 'Electrons and phonons in graphene: Dephasing and Heat Transfer'
- 25 Jul 2017 The 39th Conference on Stochastic Processes and their Applications, Moscow, Russia. 'Fractality of wave functions on a Cayley tree'
- 18 May 2017 Workshop Critical and collective effects in graphs and networks, Moscow, Russia. 'Anderson localization on tree-like structures'
- 21 Nov 2016 CPTGA international workshop: Strongly disordered and inhomogeneous superconductivity, Grenoble, France. 'Admittance of a long diffusive SNS junction'
- 28 Jun 2016 International Workshop: Localization, Interactions and Superconductivity, Chernogolovka, Russia. 'Anderson localization on random regular graphs and Cayley trees'
- 30 Jun 2015 International Workshop: Localization, Interactions and Superconductivity, Chernogolovka, Russia. 'Numerical study of spectrum and eigenfunction statistics on disordered random regular graphs'
- 14 Feb 2014 International Workshop on Strongly Disordered Superconductors and SIT', Grenoble, France. 'Fluctuation conductivity in the normal state of the hybrid array'

## Supervision of Students

- 2017-Present Anton Khvalyuk, Bachelor Student
- 2017-Present David Saykin, Master Student
- 2016-2018 Alexey Lunkin, Master Student
- 2014-2015 Alexey Lunkin, Bachelor Student
- 2016-2017 David Saykin, Bachelor Student
- Aug 2017 Saranesh Prembabu, Summer Research Student

## Awards&Fellowships

- 2017 Humboldt Research Fellowship for Postdoctoral Researchers
- 2017 Postdoctoral Research Grant, Bazis Foundation
- 2016 Texas A&M University - Distinguished Graduate Student Award
- 2015 Russian President Award for Young Researchers
- 2008 Dynasty Foundation - Award for Undergraduate Students

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## Teaching

- 2014-2015 Moscow Institute for Physics and Technology - Selected Problems in Quantum Mechanics
- 2016-2017 Moscow Institute for Physics and Technology - Asymptotic Methods
- 2017 Skolkovo Institute for Science and Technology - Advanced Quantum Mechanics
- 2017 edX Online Course - [Complex Analysis with Physical Applications](#)

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## Computer skills

Advanced C++, Python, Wolfram Mathematica, MatLAB

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## Languages

Russian Mother tongue  
English Fluent

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## Publications [\[Google Scholar\]](#) [\[ResearcherID\]](#)

- [1] KS Tikhonov and AD Mirlin. Statistics of eigenstates near the localization transition on random regular graphs. *arXiv:1810.11444*, 2018.
- [2] EVH Doggen, F Schindler, KS Tikhonov, AD Mirlin, T Neupert, DG Polyakov, and IV Gornyi. Many-body (de) localization in large quantum chains. *arXiv:1807.05051*, 2018.
- [3] AV Lunkin, KS Tikhonov, and MV Feigel'man. SYK model with quadratic perturbations: the route to a non-Fermi-liquid. *arXiv:1806.11211*, 2018.
- [4] WLZ Zhao, KS Tikhonov, and AM Finkel'stein. Flexural phonons in supported graphene: from pinning to localization. *Scientific Reports*, 8:16256, 2018.
- [5] KS Tikhonov and AD Mirlin. Many-body localization transition with power-law interactions: Statistics of eigenstates. *Physical Review B*, 97(21):214205, 2018.
- [6] KS Tikhonov, MA Skvortsov, and TM Klapwijk. Superconductivity in the presence of microwaves: Full phase diagram. *Physical Review B*, 97(18):184516, 2018.
- [7] KS Tikhonov, IV Gornyi, VYu Kachorovskii, and AD Mirlin. Resonant supercollisions and electron-phonon heat transfer in graphene. *Phys. Rev. B*, 97:085415, Feb 2018.
- [8] DR Saykin, KS Tikhonov, and YI Rodionov. Landau levels with magnetic tunneling in a Weyl semimetal and magnetoconductance of a ballistic p-n junction [Rapid Communication]. *Physical Review B*, 97:041202, 2018.
- [9] AV Lunkin, KS Tikhonov, and MV Feigel'man. Perturbed Kitaev model: excitation spectrum and long-ranged spin correlations. *Journal of Physics and Chemistry of Solids*, 2017.
- [10] M Sonner, KS Tikhonov, and AD Mirlin. Multifractality of wave functions on a Cayley tree: From root to leaves [Editors' Suggestion]. *Physical Review B*, 96:214204, 2017.
- [11] IS Burmistrov, KS Tikhonov, IV Gornyi, and AD Mirlin. Entanglement entropy and particle number cumulants of disordered fermions. *Annals of Physics*, 2017.
- [12] KS Tikhonov, AD Mirlin, and MA Skvortsov. Anderson localization and ergodicity on random regular graphs [Rapid Communication, Editors' Suggestion]. *Physical Review B*, 94:220203(R), 2016.

- [13] KS Tikhonov and AD Mirlin. Fractality of wave functions on a Cayley tree: Difference between tree and locally treelike graph without boundary. *Physical Review B*, 94(18):184203, 2016.
- [14] Y Chen, HT Yi, X Wu, R Haroldson, YN Gartstein, YI Rodionov, KS Tikhonov, A Zakhidov, X-Y Zhu, and V Podzorov. Extended carrier lifetimes and diffusion in hybrid perovskites revealed by Hall effect and photoconductivity measurements. *Nature Communications*, 7(12253), 2016.
- [15] AV Lunkin, KS Tikhonov, and MV Feigel'man. Long-range spin correlations in a honeycomb spin model with magnetic field. *JETP Letters*, 103(1-2), 2016.
- [16] N Marković, S Milinković, KS Tikhonov, and P Schonfeld. Analyzing passenger train arrival delays with support vector regression. *Transportation Research Part C: Emerging Technologies*, 56:251–262, 2015.
- [17] KS Tikhonov and MV Feigel'man. Admittance of a long diffusive SNS junction. *Physical Review B*, 91(5):054519, 2015.
- [18] D Gurovich, KS Tikhonov, D Mahalu, and D Shahar. Little-Parks oscillations in a single ring in the vicinity of the superconductor-insulator transition. *Physical Review B*, 91(17):174505, 2015.
- [19] KS Tikhonov, WLZ Zhao, and AM Finkel'stein. Dephasing time in graphene due to interaction with flexural phonons. *Physical Review Letters*, 113(7):076601, 2014.
- [20] Z Han, A Allain, H Arjmandi-Tash, KS Tikhonov, MV Feigel'man, B Sacépé, and V Bouchiat. Collapse of superconductivity in a hybrid tin-graphene josephson junction array. *Nature Physics*, 10(5):380–386, 2014.
- [21] KS Tikhonov, J Sinova, and AM Finkel'stein. Spectral non-uniform temperature and non-local heat transfer in the spin Seebeck effect. *Nature Communications*, 4(1945), 2013.
- [22] OA Tretiakov, KS Tikhonov, and VL Pokrovsky. Spin resonance in a Luttinger liquid with spin-orbit interaction. *Physical Review B*, 88(12):125143, 2013.
- [23] K Michaeli, KS Tikhonov, and AM Finkel'stein. Hall effect in superconducting films. *Physical Review B*, 86(1):014515, 2012.
- [24] NP Breznay, K Michaeli, KS Tikhonov, AM Finkel'stein, M Tendulkar, and A Kapitulnik. Hall conductivity dominated by fluctuations near the superconducting transition in disordered thin films. *Physical Review B*, 86(1):014514, 2012.
- [25] KS Tikhonov, G Schwiete, and AM Finkel'stein. Fluctuation conductivity in disordered superconducting films. *Physical Review B*, 85(17):174527, 2012.
- [26] F Chiodi, M Ferrier, KS Tikhonov, P Virtanen, TT Heikkilä, MV Feigel'man, S Guéron, and H Bouchiat. Probing the dynamics of Andreev states in a coherent normal/superconducting ring. *Scientific Reports*, 1:3, 2011.
- [27] IS Burmistrov, IV Gornyi, and KS Tikhonov. Disordered electron liquid in double quantum well heterostructures: Renormalization group analysis and dephasing rate. *Physical Review B*, 84(7):075338, 2011.

- [28] KS Tikhonov, MV Feigel'man, and A Yu Kitaev. Power-law spin correlations in a perturbed spin model on a honeycomb lattice. *Physical Review Letters*, 106(6):067203, 2011.
- [29] KS Tikhonov and MV Feigel'man. Quantum spin metal state on a decorated honeycomb lattice. *Physical Review Letters*, 105(6):067207, 2010.
- [30] KS Tikhonov and MV Feigel'man. AC josephson effect in the long voltage-biased SINIS junction. *JETP Letters*, 89(4):205–211, 2009.
- [31] MV Feigel'man, MA Skvortsov, and KS Tikhonov. Proximity-induced superconductivity in graphene. *JETP Letters*, 88(11):747–751, 2008.