

Publications

1. **“Effects of charge noise on a pulse-gated singlet-triplet $S - T_-$ qubit”**
Z. Qi, X. Wu, D. R. Ward, J. R. Prance, D. Kim, J. K. Gamble, R. T. Mohr, Z. Shi, D. E. Savage, M. G. Lagally, M. A. Eriksson, M. Frissen, S. N. Coppersmith, and M. G. Vavilov
submitted to Phys.Rev. Lett; arXiv:1701.06971.
2. **“Response to a local quench of a system near many body localization transition”**
C. Xu and M. G. Vavilov
Phys. Rev. B **95**, 085139 (2017); arXiv:1509.05158.
3. **“Quantum efficiency of a single microwave photon detector based on a semiconductor double quantum dot”**
C. H. Wong and M. G. Vavilov
Phys. Rev. A **95**, 12325 (2017).
4. **“Phonon-Mediated Quasiparticle Poisoning of Superconducting Microwave Resonators”**
U. Patel, I. V Pechenezhskiy, B. L. T. Plourde, M. G. Vavilov, and R. McDermott
to be submitted to Phys. Rev. Lett.; arXiv:1610.09351.
5. **“Optimizing single microwave-photon detection: Input-Output theory”**
M. Schöndorf, L. C. G. Govia, M. Vavilov, R. McDermott, and F. K. Wilhelm,
under review with Phys. Rev. Applied, arXiv:1609.08887.
6. **“Magnetic penetration depth in disordered iron-based superconductors”**
M. Dzero, M. Khodas, A. D. Klironomos, M. G. Vavilov, and A. Levchenko
Phys. Rev. B **92**, 144501 (2015).
7. **“Nonuniversal weak antilocalization effect in cubic topological Kondo insulators”**
M. Dzero, M. G. Vavilov, K. Kechedzhi, and V. M. Galitski
Phys. Rev. B **92**, 165415 (2015).
8. **“Scalable two- and four-qubit parity measurement with a threshold photon counter”**
Luke C.G. Govia, Emily J. Pritchett, B.L.T. Plourde, Maxim G. Vavilov, R. McDermott, Frank K. Wilhelm
Phys. Rev. A **92**, 22335 (2015); arXiv:1502.03340.
9. **“High-fidelity qubit measurement with a microwave photon counter”**
L. C. G. Govia, E. J. Pritchett, C. Xu, B. L. T. Plourde, M. G. Vavilov, F. K. Wilhelm, and R. McDermott, Phys. Rev. A **90**, 062307 (2014).
10. **“Accurate qubit control with single flux quantum pulses”**
R. McDermott and M. G. Vavilov
Phys. Rev. Applied **2**, 014007 (2014).
11. **“Nonadiabatic dynamics of a slowly driven dissipative two-level system”**
Canran Xu, Amrit Poudel, and Maxim G. Vavilov
Phys. Rev. A **89**, 052102 (2014).

12. **“Effect of SDW fluctuations on the specific heat jump in iron pnictides at a superconducting transition”**
D. Kuzmanovski, A. Levchenko, M. Khodas, and M. G. Vavilov
Phys. Rev. B **89**, 144503 (2014).
13. **“Electromagnetic properties of thin metallic films”**
L. S. Langsjoen, A. Poudel, M. G. Vavilov, and R. Joynt
Phys. Rev. B **89**, 115401 (2014).
14. **“Enhancement of the London Penetration Depth in Pnictides at the Onset of Spin-Density-Wave Order under Superconducting Dome”**
A. Levchenko, M. G. Vavilov, M. Khodas, and A. V. Chubukov
Phys. Rev. Lett. **110**, 177003 (2013).
15. **“Relaxation in quantum dots due to evanescent-wave Johnson noise”**
A. Poudel, L. S. Langsjoen, M. G. Vavilov, and R. Joynt
Phys. Rev. B **87**, 045301 (2013).
16. **“Full counting statistics of photons emitted by a double quantum dot”**
C. Xu and M. G. Vavilov
Phys. Rev. B **88**, 195307 (2013).
17. **“Quantum photovoltaic effect in double quantum dots”**
C. Xu and M. G. Vavilov
Phys. Rev. B **87**, 035429 (2013).
18. **“Enhancement of T_c by disorder in underdoped iron pnictides”**
R. M. Fernandes, M. G. Vavilov, and A. V. Chubukov
Phys. Rev. B **85**, 140512 (2012).
19. **“Magnetic penetration depth in the presence of a spin-density wave in multiband superconductors at zero temperature”**
D. Kuzmanovski and M. G. Vavilov
Supercond. Sci. Technol. **25**, 084001 (2012).
20. **“Qubit relaxation from evanescent-wave Johnson noise”**
L. S. Langsjoen, A. Poudel, M. G. Vavilov, and R. Joynt
Phys. Rev. A **86**, 010301(2012).
21. **“Quantum efficiency of a microwave photon detector based on a current-biased Josephson junction”**
A. Poudel, R. McDermott, and M. G. Vavilov
Phys. Rev. B **86** 174506 (2012).
22. **“Phase diagram of iron pnictides if doping acts as a source of disorder”**
M. G. Vavilov and A. V. Chubukov
Phys. Rev. B **84** 214521 (2011).

23. **“Differential conductance of point contacts between an iron-based superconductor and a normal metal”**
D. Kuzmanovski, M. G. Vavilov
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24. **“Jump in specific heat in the presence of a spin-density wave at the superconducting transition in iron pnictides”**
M. G. Vavilov, A. V. Chubukov, A. B. Vorontsov
25. **“Effect of Ohmic environment on optimally controlled flux-biased phase qubit”**
A. Poudel and M. G. Vavilov
Phys. Rev. B **82**, 144528 (2010), arXiv:1008.2554.
26. **“Phonon-induced resistance oscillations of two-dimensional electron systems drifting with supersonic velocities”**
I. A. Dmitriev, R. Gellmann, M. G. Vavilov
Phys. Rev. B **82**, 201311(R), (2010), arXiv:1007.4211.
27. **“Superconductivity and spin-density-waves in multi-band metals”**
A.B.Vorontsov, M.G.Vavilov, and A.V.Chubukov
Phys. Rev. B **81**, 174538 (2010), arXiv:1003.2389.
28. **“Non-linear Magnetoresistance Oscillations in Intensely Irradiated Two-Dimensional Electron Systems Induced by Multi-Photon Processes ”**
M. Khodas, H.-S. Chiang, A. T. Hatke, M. A. Zudov, M. G. Vavilov, L. N. Pfeiffer, K. W. West
Phys. Rev. Lett. **104**, 206801 (2010), arXiv:0912.1364.
29. **“Coexistence between superconducting and spin density wave states in iron-based superconductors: Ginzburg-Landau analysis ”**
M.G. Vavilov, A.B. Vorontsov, and A.V. Chubukov
Supercond. Sci. Technol. **23**, 054011 (2010), arXiv:0912.3556.
30. **“Reduced effect of impurities on the universal pairing scale in the cuprates”**
A.B. Vorontsov, Ar. Abanov, M.G. Vavilov, A.V. Chubukov
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31. **“Mechanisms of the microwave photoconductivity in 2D electron systems with mixed disorder”**
I.A. Dmitriev, M. Khodas, A.D. Mirlin, D.G. Polyakov, M.G. Vavilov
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32. **“Coexistence of superconductivity and a spin density wave in pnictides: Gap symmetry and nodal lines”**
D. Parker, M. G. Vavilov, A. V. Chubukov, I.I. Mazin
Phys. Rev. B **80**, 100508(R) (2009); arXiv:0907.2826v1.

33. **“Momentum dependence and nodes of the superconducting gap in iron-pnictides”**
A. V. Chubukov, M. G. Vavilov, A. B. Vorontsov
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34. **“Superfluid density and penetration depth in Fe-pnictides”**
A. B. Vorontsov, M. G. Vavilov and A. V. Chubukov
Phys. Rev. B **79**, 140507(R) (2009); arXiv:0901.0719v1.
35. **“Interplay between magnetism and superconductivity in Fe-pnictides”**
A. B. Vorontsov, M. G. Vavilov and A. V. Chubukov
Phys. Rev. B **79**, 060508(R) (2009); arXiv:0812.2469v1.
36. **“Effect of microwave radiation on non-linear resistivity of a two-dimensional electron gas at large filling factors”**
M. Khodas and M. G. Vavilov
Phys. Rev. B **78**, 245319 (2008); arXiv:0811.0013v1.
37. **“Spin relaxation in quantum dots due to electron exchange with leads”**
A. Vorontsov and M. G. Vavilov
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38. *“Stochastic dynamics of magnetization in a ferromagnetic nanoparticle out of equilibrium”*
D. M. Basko and M. G. Vavilov
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39. **“Decreasing excitation gap in Andreev billiards by disorder scattering”**
F. Libisch, J. Möller, S. Rotter, M. G. Vavilov and J. Burgdörfer
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40. **“Effect of Coulomb interaction on current noise in open quantum dots”**
G. Catelani and M. G. Vavilov
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41. **“Non-linear Resistivity of a Two-Dimensional Electron Gas in a Magnetic Field”**
M. G. Vavilov, I. L. Aleiner and L. I. Glazman
Phys. Rev. B **76**, 115331 (2007); cond-mat/0611130.
42. **“Photovoltaic Current response of mesoscopic conductors to quantized cavity modes”**
M. G. Vavilov and A. D. Stone
Phys. Rev. Lett. **97**, 216801 (2006); cond-mat/0610384.
43. **“Giant Magneto-Oscillations of Electric-Field-Induced Spin Polarization in 2DEG”**
M.G. Vavilov
Phys. Rev. B **72**, 195327 (2005); cond-mat/0510024.
44. **“Failure of the Wiedemann-Franz Law in Mesoscopic Conductors”**
M.G. Vavilov, and A.D. Stone
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45. **“Quantum Chaotic Scattering in Time-Dependent External Fields: Random Matrix Approach”**
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46. **“Photovoltaic and Rectification Currents in Quantum Dots”**
M.G. Vavilov, L. DiCarlo, and C.M. Marcus
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47. **“Theory of Microwave-Induced Oscillations in the Magnetoconductivity of a 2DEG”**
I.A. Dmitriev, M.G. Vavilov, I.L. Aleiner, A.D. Mirlin, and D.G. Polyakov
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48. **“Transport Spectroscopy of Kondo Quantum Dots Coupled by RKKY Interaction”**
M.G. Vavilov and L.I. Glazman
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49. **“Aharonov-Bohm Effect as a Probe of Interaction between Magnetic Impurities”**
V.M. Galitskii, M.G. Vavilov, and L.I. Glazman
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50. **“Compressibility of a 2D Electron Gas under Microwave Radiation”**
M.G. Vavilov, I.A. Dmitriev, I.L. Aleiner, A.D. Mirlin, and D.G. Polyakov
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51. **“Oscillatory Photoconductivity of a Two-Dimensional Electron Gas in a Magnetic Field”**
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52. **“Theory of the Oscillatory Photoconductivity of a Two-Dimensional Electron System”**
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53. **“Magnetotransport in two-dimensional Electron Gas at Large Filling Factors”**
M.G. Vavilov and I.L. Aleiner
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54. **“Electron Transport and Energy Relaxation in Dilute Magnetic Alloys”**
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56. **“Quantum Disorder and Quantum Chaos in Andreev Billiards”**
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57. **“Electron Energy and Phase Relaxation on Magnetic Impurities”**
M.G. Vavilov, A. Kaminski, and L.I. Glazman
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58. **“Noise Through Quantum Pumps”**
M.L. Polianski, M.G. Vavilov, and P.W. Brouwer
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59. **“Absence of Zero-Temperature Dephasing by Electron-Electron Interaction”**
I.L. Aleiner, B.L. Altshuler, and M.G. Vavilov
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60. **“Conductance Fluctuations of Open Quantum Dots under Microwave Radiation”**
M.G. Vavilov and I.L. Aleiner
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61. **“Charge Pumping and Photovoltaic Effect in Open Quantum Dots”**
M.G. Vavilov, V. Ambegaokar, and I.L. Aleiner
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62. **“Universal Gap Fluctuations in the Superconductor Proximity Effect”**
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64. **“Influence of Interaction on Weak Localization”**
M.G. Vavilov and V. Ambegaokar
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65. **“Magnetic Oscillations in Superconductors”**
V.P. Mineev and M.G. Vavilov
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66. **“De Haas - van Alphen Oscillations in Unconventional Superconductors”**
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