

Björn Trauzettel

List of Publications by Citations

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99
papers

4,795
citations

32
h-index

67
g-index

102
ext. papers

5,327
ext. citations

4.7
avg. IF

5.66
L-index

| # | Paper | IF | Citations |
|----|--|------|-----------|
| 99 | Spin qubits in graphene quantum dots. <i>Nature Physics</i> , 2007 , 3, 192-196 | 16.2 | 804 |
| 98 | Sub-Poissonian shot noise in graphene. <i>Physical Review Letters</i> , 2006 , 96, 246802 | 7.4 | 693 |
| 97 | Aharonov-Bohm effect and broken valley degeneracy in graphene rings. <i>Physical Review B</i> , 2007 , 76, | 3.3 | 215 |
| 96 | Single valley Dirac fermions in zero-gap HgTe quantum wells. <i>Nature Physics</i> , 2011 , 7, 418-422 | 16.2 | 201 |
| 95 | Bound states and magnetic field induced valley splitting in gate-tunable graphene quantum dots. <i>Physical Review B</i> , 2009 , 79, | 3.3 | 144 |
| 94 | Quantum dots and spin qubits in graphene. <i>Nanotechnology</i> , 2010 , 21, 302001 | 3.4 | 122 |
| 93 | Spin-orbit interaction and anomalous spin relaxation in carbon nanotube quantum dots. <i>Physical Review B</i> , 2008 , 77, | 3.3 | 111 |
| 92 | Shot-noise detection in a carbon nanotube quantum dot. <i>Physical Review Letters</i> , 2006 , 96, 026803 | 7.4 | 111 |
| 91 | Majorana bound states and nonlocal spin correlations in a quantum wire on an unconventional superconductor. <i>Physical Review Letters</i> , 2013 , 110, 117002 | 7.4 | 101 |
| 90 | Failure of protection of Majorana based qubits against decoherence. <i>Physical Review B</i> , 2012 , 85, | 3.3 | 95 |
| 89 | Phonon-induced backscattering in helical edge states. <i>Physical Review Letters</i> , 2012 , 108, 086602 | 7.4 | 92 |
| 88 | Hyperfine interaction and electron-spin decoherence in graphene and carbon nanotube quantum dots. <i>Physical Review B</i> , 2009 , 80, | 3.3 | 88 |
| 87 | Photon-assisted electron transport in graphene: Scattering theory analysis. <i>Physical Review B</i> , 2007 , 75, | 3.3 | 77 |
| 86 | Transport properties of single-channel quantum wires with an impurity: Influence of finite length and temperature on average current and noise. <i>Physical Review B</i> , 2005 , 71, | 3.3 | 70 |
| 85 | First-order character and observable signatures of topological quantum phase transitions. <i>Physical Review Letters</i> , 2015 , 114, 185701 | 7.4 | 66 |
| 84 | Renormalization group approach for the scattering off a single Rashba impurity in a helical liquid. <i>Physical Review B</i> , 2012 , 86, | 3.3 | 65 |
| 83 | Parity meter for charge qubits: An efficient quantum entangler. <i>Physical Review B</i> , 2006 , 73, | 3.3 | 62 |

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| 82 | Appearance of fractional charge in the noise of nonchiral Luttinger liquids. <i>Physical Review Letters</i> , 2004 , 92, 226405 | 7.4 | 57 |
| 81 | Landauer-type transport theory for interacting quantum wires: application to carbon nanotube y junctions. <i>Physical Review Letters</i> , 2002 , 89, 226404 | 7.4 | 56 |
| 80 | From the adiabatic theorem of quantum mechanics to topological states of matter. <i>Physica Status Solidi - Rapid Research Letters</i> , 2013 , 7, 109-129 | 2.5 | 55 |
| 79 | Strain-induced band gaps in bilayer graphene. <i>Physical Review B</i> , 2012 , 85, | 3.3 | 50 |
| 78 | Fluctuation-driven topological Hund insulators. <i>Physical Review B</i> , 2013 , 87, | 3.3 | 50 |
| 77 | Temperature dependence of the conductivity of ballistic graphene. <i>Physical Review Letters</i> , 2009 , 103, 196801 | 7.4 | 50 |
| 76 | Intact Dirac Cones at Broken Sublattice Symmetry: Photoemission Study of Graphene on Ni and Co. <i>Physical Review X</i> , 2012 , 2, | 9.1 | 49 |
| 75 | Odd-frequency triplet superconductivity at the helical edge of a topological insulator. <i>Physical Review B</i> , 2015 , 92, | 3.3 | 47 |
| 74 | Charge-spin duality in nonequilibrium transport of helical liquids. <i>Physical Review B</i> , 2011 , 83, | 3.3 | 47 |
| 73 | Interplay of the Aharonov-Bohm effect and Klein tunneling in graphene. <i>Physical Review B</i> , 2010 , 81, | 3.3 | 46 |
| 72 | Optimal spin-entangled electron-hole pair pump. <i>Physical Review Letters</i> , 2005 , 94, 186804 | 7.4 | 44 |
| 71 | The AharonovBohm effect in graphene rings. <i>Solid State Communications</i> , 2012 , 152, 1411-1419 | 1.6 | 43 |
| 70 | Superconducting proximity effect in three-dimensional topological insulators in the presence of a magnetic field. <i>Physical Review B</i> , 2015 , 92, | 3.3 | 40 |
| 69 | Parity measurement in topological Josephson junctions. <i>Physical Review Letters</i> , 2014 , 112, 077002 | 7.4 | 40 |
| 68 | Group theoretical and topological analysis of the quantum spin Hall effect in silicene. <i>New Journal of Physics</i> , 2013 , 15, 085030 | 2.9 | 38 |
| 67 | Helical Dirac-Majorana interferometer in a superconductor/topological insulator sandwich structure. <i>Physical Review B</i> , 2011 , 83, | 3.3 | 32 |
| 66 | ac Magnetization transport and power absorption in nonitinerant spin chains. <i>Physical Review Letters</i> , 2008 , 101, 017202 | 7.4 | 32 |
| 65 | Random Rashba spin-orbit coupling at the quantum spin Hall edge. <i>Physical Review B</i> , 2014 , 89, | 3.3 | 31 |

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| 64 | Optical manipulation of edge-state transport in HgTe quantum wells in the quantum Hall regime. <i>Physical Review B</i> , 2009 , 79, | 3-3 | 31 |
| 63 | Oscillatory nonlinear conductance of an interacting quantum wire with an impurity. <i>Physical Review Letters</i> , 2003 , 91, 266402 | 7-4 | 31 |
| 62 | Signatures of Majorana bound states in transport properties of hybrid structures based on helical liquids. <i>Physical Review B</i> , 2014 , 89, | 3-3 | 30 |
| 61 | Coexisting edge states and gapless bulk in topological states of matter. <i>Physical Review Letters</i> , 2015 , 114, 136801 | 7-4 | 29 |
| 60 | Devices with electrically tunable topological insulating phases. <i>Applied Physics Letters</i> , 2013 , 102, 063503,4 | | 29 |
| 59 | Spin-dependent thermoelectric transport in HgTe/CdTe quantum wells. <i>Physical Review B</i> , 2012 , 86, | 3-3 | 29 |
| 58 | Coulomb drag shot noise in coupled Luttinger liquids. <i>Physical Review Letters</i> , 2002 , 88, 116401 | 7-4 | 29 |
| 57 | Quantum interference of edge supercurrents in a two-dimensional topological insulator. <i>Physical Review B</i> , 2015 , 92, | 3-3 | 28 |
| 56 | Time reversal symmetric topological exciton condensate in bilayer HgTe quantum wells. <i>Physical Review Letters</i> , 2014 , 112, 146405 | 7-4 | 27 |
| 55 | Emission of polarization-entangled microwave photons from a pair of quantum dots. <i>Physical Review Letters</i> , 2005 , 95, 127401 | 7-4 | 27 |
| 54 | Strong correlation effects on topological quantum phase transitions in three dimensions. <i>Physical Review B</i> , 2016 , 93, | 3-3 | 26 |
| 53 | Exact results for the Kondo screening cloud of two helical liquids. <i>Physical Review Letters</i> , 2013 , 110, 016602 | 7-4 | 24 |
| 52 | Fractional Wigner Crystal in the Helical Luttinger Liquid. <i>Physical Review Letters</i> , 2015 , 115, 206402 | 7-4 | 23 |
| 51 | How to distinguish between specular and retroconfigurations for Andreev reflection in graphene rings. <i>Physical Review Letters</i> , 2012 , 108, 106603 | 7-4 | 23 |
| 50 | Transport theory of carbon nanotube Y junctions. <i>New Journal of Physics</i> , 2003 , 5, 117-117 | 2-9 | 23 |
| 49 | Chiral anomaly in real space from stable fractional charges at the edge of a quantum spin Hall insulator. <i>Physical Review B</i> , 2016 , 94, | 3-3 | 23 |
| 48 | Detecting Majorana bound states by nanomechanics. <i>Physical Review B</i> , 2011 , 84, | 3-3 | 21 |
| 47 | Current fluctuations in an interacting quantum dot. <i>Physical Review Letters</i> , 2005 , 94, 166803 | 7-4 | 21 |

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| 46 | Transport signatures of superconducting hybrids with mixed singlet and chiral triplet states. <i>Physical Review B</i> , 2014 , 90, | 3.3 | 20 |
| 45 | Plasmons due to the interplay of Dirac and Schrödinger fermions. <i>Physical Review Letters</i> , 2014 , 112, 076804 | 7.4 | 18 |
| 44 | Andreev-like reflections with cold atoms. <i>Physical Review Letters</i> , 2008 , 100, 110404 | 7.4 | 17 |
| 43 | Transport properties of double quantum dots with electron-phonon coupling. <i>Physical Review B</i> , 2013 , 88, | 3.3 | 16 |
| 42 | Detection of qubit-oscillator entanglement in nanoelectromechanical systems. <i>Physical Review Letters</i> , 2010 , 104, 177205 | 7.4 | 16 |
| 41 | Entanglement of nanoelectromechanical oscillators by Cooper-pair tunneling. <i>Physical Review B</i> , 2013 , 88, | 3.3 | 15 |
| 40 | Signatures of topological order in ballistic bulk transport of HgTe quantum wells. <i>Physical Review B</i> , 2010 , 81, | 3.3 | 14 |
| 39 | Spin decoherence in graphene quantum dots due to hyperfine interaction. <i>Physical Review B</i> , 2012 , 86, | 3.3 | 14 |
| 38 | Ultralong spin decoherence times in graphene quantum dots with a small number of nuclear spins. <i>Physical Review B</i> , 2013 , 88, | 3.3 | 13 |
| 37 | All-electric qubit control in heavy hole quantum dots via non-Abelian geometric phases. <i>Physical Review B</i> , 2012 , 85, | 3.3 | 13 |
| 36 | Color-dependent conductance of graphene with adatoms. <i>Physical Review Letters</i> , 2011 , 106, 166806 | 7.4 | 11 |
| 35 | Spin Hall effect at interfaces between HgTe/CdTe quantum wells and metals. <i>Physical Review B</i> , 2011 , 84, | 3.3 | 11 |
| 34 | Transfer of entanglement from electrons to photons by optical selection rules. <i>New Journal of Physics</i> , 2005 , 7, 186-186 | 2.9 | 11 |
| 33 | Ly Flights due to Anisotropic Disorder in Graphene. <i>Physical Review Letters</i> , 2016 , 117, 046603 | 7.4 | 10 |
| 32 | Gapless topological superconductors: Model Hamiltonian and realization. <i>Physical Review B</i> , 2015 , 92, | 3.3 | 10 |
| 31 | Shot noise in lithographically patterned graphene nanoribbons. <i>Physical Review B</i> , 2013 , 88, | 3.3 | 10 |
| 30 | Direct proportionality between the Kondo cloud and current cross correlations in helical liquids. <i>Physical Review B</i> , 2014 , 89, | 3.3 | 9 |
| 29 | Quantum Hall effect in narrow graphene ribbons. <i>Physical Review B</i> , 2012 , 86, | 3.3 | 9 |

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| 28 | Measuring the momentum of a nanomechanical oscillator through the use of two tunnel junctions. <i>Physical Review Letters</i> , 2008 , 100, 027202 | 7.4 | 9 |
| 27 | Improved position measurement of nanoelectromechanical systems using cross correlations. <i>Physical Review B</i> , 2007 , 76, | 3.3 | 9 |
| 26 | Effect of interactions on the noise of chiral Luttinger liquid systems. <i>Physical Review B</i> , 2004 , 70, | 3.3 | 9 |
| 25 | Equilibration in closed quantum systems: Application to spin qubits. <i>Physical Review B</i> , 2015 , 92, | 3.3 | 8 |
| 24 | Screening properties and plasmons of Hg(Cd)Te quantum wells. <i>Physical Review B</i> , 2014 , 90, | 3.3 | 8 |
| 23 | Even-odd effects in NSN scattering problems: Application to graphene nanoribbons. <i>Physical Review B</i> , 2013 , 87, | 3.3 | 8 |
| 22 | Transport properties of a superconducting single-electron transistor coupled to a nanomechanical oscillator. <i>Physical Review B</i> , 2009 , 79, | 3.3 | 8 |
| 21 | Weak-measurement theory of quantum-dot spin qubits. <i>Physical Review B</i> , 2007 , 76, | 3.3 | 8 |
| 20 | Temperature dependence of coulomb drag between finite-length quantum wires. <i>Physical Review Letters</i> , 2007 , 99, 086404 | 7.4 | 8 |
| 19 | Entanglement transfer from electrons to photons in quantum dots: an open quantum system approach. <i>Nanotechnology</i> , 2010 , 21, 274001 | 3.4 | 7 |
| 18 | Statistics of charge transfer through impurities in strongly correlated 1D metals. <i>Annalen Der Physik</i> , 2007 , 16, 661-671 | 2.6 | 7 |
| 17 | Interplay of topology and interactions in quantum Hall topological insulators: U(1) symmetry, tunable Luttinger liquid, and interaction-induced phase transitions. <i>Physical Review B</i> , 2016 , 94, | 3.3 | 7 |
| 16 | Evidence for broken Galilean invariance at the quantum spin Hall edge. <i>Physical Review B</i> , 2015 , 92, | 3.3 | 6 |
| 15 | Interacting weak topological insulators and their transition to Dirac semimetal phases. <i>Physical Review B</i> , 2015 , 92, | 3.3 | 6 |
| 14 | How irrelevant operators affect the determination of fractional charge. <i>Physical Review Letters</i> , 2003 , 91, 026801 | 7.4 | 5 |
| 13 | Flux sensitivity of quantum spin Hall rings. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2016 , 75, 379-384 | 3 | 4 |
| 12 | \mathbb{Z}_2 Green's function topology of Majorana wires. <i>New Journal of Physics</i> , 2013 , 15, 065006 | 2.9 | 4 |
| 11 | Momentum and position detection in nanoelectromechanical systems beyond the Born and Markov approximations. <i>Physical Review B</i> , 2011 , 83, | 3.3 | 4 |

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| 10 | Theory of Spin Qubits in Nanostructures. <i>Journal of the Physical Society of Japan</i> , 2008 , 77, 031012 | 1.5 | 4 |
| 9 | Negativity of the excess noise in a quantum wire capacitively coupled to a gate. <i>Physical Review B</i> , 2007 , 75, | 3.3 | 4 |
| 8 | Long-wavelength spatial oscillations of high-frequency current noise in one-dimensional electron systems. <i>Physical Review B</i> , 2003 , 67, | 3.3 | 4 |
| 7 | Correlation and current anomalies in helical quantum dots. <i>Physical Review B</i> , 2016 , 94, | 3.3 | 4 |
| 6 | Charge and spin density in the helical Luttinger liquid. <i>Europhysics Letters</i> , 2016 , 113, 37002 | 1.6 | 3 |
| 5 | Addendum: Group theoretical and topological analysis of the quantum spin Hall effect in silicene. <i>New Journal of Physics</i> , 2015 , 17, 119401 | 2.9 | 2 |
| 4 | Special issue on Graphene. <i>Semiconductor Science and Technology</i> , 2010 , 25, 030301 | 1.8 | 2 |
| 3 | Local topological phase transitions in periodic condensed matter systems. <i>European Physical Journal B</i> , 2012 , 85, 1 | 1.2 | 1 |
| 2 | Thermal electron spin flip in quantum dots. <i>Physical Review B</i> , 2015 , 92, | 3.3 | 1 |
| 1 | Reprint of : Flux sensitivity of quantum spin Hall rings. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2016 , 82, 185-190 | 3 | 0 |