

# Esa Räsänen

## List of Publications by Year in descending order

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134  
papers

2,201  
citations

236925

25  
h-index

289244

40  
g-index

137  
all docs

137  
docs citations

137  
times ranked

1660  
citing authors

#	ARTICLE	IF	CITATIONS
1	Semiclassical two-step model for strong-field ionization. <i>Physical Review A</i> , 2016, 94, .	2.5	114
2	Impurity effects in quantum dots: Toward quantitative modeling. <i>Physical Review B</i> , 2004, 70, .	3.2	107
3	Optimal Control of Quantum Rings by Terahertz Laser Pulses. <i>Physical Review Letters</i> , 2007, 98, 157404.	7.8	102
4	Three real-space discretization techniques in electronic structure calculations. <i>Physica Status Solidi (B): Basic Research</i> , 2006, 243, 1016-1053.	1.5	93
5	Introducing libeemd: a program package for performing the ensemble empirical mode decomposition. <i>Computational Statistics</i> , 2016, 31, 545-557.	1.5	84
6	Electronic structure of rectangular quantum dots. <i>Physical Review B</i> , 2003, 67, .	3.2	79
7	Effects of geometry and impurities on quantum rings in magnetic fields. <i>Physical Review B</i> , 2006, 73, .	3.2	76
8	Universal correction for the Becke-Johnson exchange potential. <i>Journal of Chemical Physics</i> , 2010, 132, 044112.	3.0	56
9	Testing of two-dimensional local approximations in the current-spin and spin-density-functional theories. <i>Physical Review B</i> , 2003, 67, .	3.2	47
10	Coexisting Honeycomb and Kagome Characteristics in the Electronic Band Structure of Molecular Graphene. <i>Nano Letters</i> , 2016, 16, 3519-3523.	9.1	41
11	Lower Bounds on the Exchange-Correlation Energy in Reduced Dimensions. <i>Physical Review Letters</i> , 2009, 102, 206406.	7.8	37
12	Becke-Johnson-type exchange potential for two-dimensional systems. <i>Physical Review B</i> , 2010, 81, .	3.2	36
13	Exchange-energy functionals for finite two-dimensional systems. <i>Physical Review B</i> , 2007, 76, .	3.2	34
14	Femtosecond laser pulse shaping for enhanced ionization. <i>Europhysics Letters</i> , 2009, 87, 53001.	2.0	34
15	Optimal laser control of double quantum dots. <i>Physical Review B</i> , 2008, 77, .	3.2	32
16	Electron-Electron Interactions in Artificial Graphene. <i>Physical Review Letters</i> , 2012, 108, 246803.	7.8	32
17	Rectangular quantum dots in high magnetic fields. <i>Physical Review B</i> , 2004, 69, .	3.2	30
18	Broken symmetry in density-functional theory: Analysis and cure. <i>Physical Review B</i> , 2004, 69, .	3.2	29

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19	Strictly correlated uniform electron droplets. <i>Physical Review B</i> , 2011, 83, .	3.2	29
20	Time-dependent density-functional theory of strong-field ionization of atoms by soft x rays. <i>Physical Review A</i> , 2014, 90, .	2.5	29
21	Density gradients for the exchange energy of electrons in two dimensions. <i>Physical Review A</i> , 2009, 79, .	2.5	28
22	Gaussian approximations for the exchange-energy functional of current-carrying states: Applications to two-dimensional systems. <i>Physical Review A</i> , 2009, 80, .	2.5	27
23	Interaction-Induced Spin Polarization in Quantum Dots. <i>Physical Review Letters</i> , 2010, 105, 046802.	7.8	27
24	Correlation energy of finite two-dimensional systems: Toward nonempirical and universal modeling. <i>Physical Review B</i> , 2009, 79, .	3.2	26
25	Wigner molecules in polygonal quantum dots: A density-functional study. <i>Physical Review B</i> , 2003, 67, .	3.2	25
26	Local correlation functional for electrons in two dimensions. <i>Physical Review B</i> , 2008, 78, .	3.2	25
27	Thermal effects on the Wigner localization and Friedel oscillations in many-electron nanowires. <i>Physical Review B</i> , 2016, 94, .	3.2	25
28	Half-Integer Filling-Factor States in Quantum Dots. <i>Physical Review Letters</i> , 2006, 96, 126805.	7.8	24
29	Strong quantum scarring by local impurities. <i>Scientific Reports</i> , 2016, 6, 37656.	3.3	24
30	Electronic exchange in quantum rings: Beyond the local-density approximation. <i>Physical Review B</i> , 2009, 79, .	3.2	23
31	Exchange-correlation orbital functionals in current-density functional theory: Application to a quantum dot in magnetic fields. <i>Physical Review B</i> , 2008, 77, .	3.2	22
32	Spin droplets in confined quantum Hall systems. <i>Physical Review B</i> , 2008, 77, .	3.2	22
33	Orbital-free energy functional for electrons in two dimensions. <i>Physical Review B</i> , 2009, 80, .	3.2	22
34	Strong-field-ionization suppression by light-field control. <i>Physical Review A</i> , 2012, 86, .	2.5	22
35	Optimal control of strong-field ionization with time-dependent density-functional theory. <i>Physical Review A</i> , 2013, 88, .	2.5	22
36	Quantum Lissajous Scars. <i>Physical Review Letters</i> , 2019, 123, 214101.	7.8	22

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37	Stability of vortex structures in quantum dots. <i>Physical Review B</i> , 2005, 71, .	3.2	21
38	Students' pre-knowledge as a guideline in the teaching of introductory thermal physics at university. <i>European Journal of Physics</i> , 2009, 30, 593-604.	0.6	21
39	Kirzhnits gradient expansion in two dimensions. <i>Physical Review B</i> , 2012, 85, .	3.2	21
40	Parameter-free density functional for the correlation energy in two dimensions. <i>Physical Review B</i> , 2010, 81, .	3.2	20
41	Optimal control of high-harmonic generation by intense few-cycle pulses. <i>Physical Review A</i> , 2014, 90, .	2.5	20
42	Toward an All-Around Semilocal Potential for Electronic Exchange. <i>Journal of Chemical Theory and Computation</i> , 2010, 6, 3664-3670.	5.3	19
43	Fractal dynamics in chaotic quantum transport. <i>Physical Review E</i> , 2013, 88, 022913.	2.1	19
44	Aharonov-Bohm effect in many-electron quantum rings. <i>Physical Review B</i> , 2010, 81, .	3.2	18
45	Ultrafast sequential charge transfer in a double quantum dot. <i>Physical Review B</i> , 2010, 82, .	3.2	17
46	Construction of the B88 Exchange-Energy Functional in Two Dimensions. <i>Journal of Chemical Theory and Computation</i> , 2014, 10, 1837-1842.	5.3	17
47	Electron localization function for two-dimensional systems. <i>Physical Review B</i> , 2008, 77, .	3.2	16
48	Controllable quantum scars in semiconductor quantum dots. <i>Physical Review B</i> , 2017, 96, .	3.2	16
49	Laplacian-level density functionals for the exchange-correlation energy of low-dimensional nanostructures. <i>Physical Review B</i> , 2010, 82, .	3.2	15
50	Fluctuations of Hi-Hat Timing and Dynamics in a Virtuoso Drum Track of a Popular Music Recording. <i>PLoS ONE</i> , 2015, 10, e0127902.	2.5	15
51	Tetrahedral chalcopyrite quantum dots for solar-cell applications. <i>Applied Physics Letters</i> , 2011, 99, .	3.3	14
52	Optimal local control of coherent dynamics in custom-made nanostructures. <i>Physical Review B</i> , 2013, 87, .	3.2	14
53	The Effects of Pharmacological Compounds on Beat Rate Variations in Human Long QT-Syndrome Cardiomyocytes. <i>Stem Cell Reviews and Reports</i> , 2016, 12, 698-707.	5.6	14
54	Exact Coulomb cutoff technique for supercell calculations in two dimensions. <i>Physical Review B</i> , 2009, 80, .	3.2	13

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55	Asymmetric photoelectron momentum distributions due to quantum interference in strong-field ionization by a few-cycle pulse. <i>Physical Review A</i> , 2014, 89, .	2.5	13
56	Dirac physics in flakes of artificial graphene in magnetic fields. <i>Physical Review B</i> , 2014, 89, .	3.2	13
57	Effects of scarring on quantum chaos in disordered quantum wells. <i>Journal of Physics Condensed Matter</i> , 2019, 31, 105301.	1.8	13
58	Normal and Anomalous Diffusion in Soft Lorentz Gases. <i>Physical Review Letters</i> , 2019, 122, 064102.	7.8	13
59	Pfaffian and fragmented states at $\nu=5/2$ in quantum Hall droplets. <i>Physical Review B</i> , 2008, 78, .	3.2	12
60	Semi-local density functional for the exchange-correlation energy of electrons in two dimensions. <i>International Journal of Quantum Chemistry</i> , 2010, 110, 2308-2314.	2.0	12
61	Violation of a local form of the Lieb-Oxford bound. <i>Physical Review A</i> , 2012, 85, .	2.5	12
62	Imaginary time propagation code for large-scale two-dimensional eigenvalue problems in magnetic fields. <i>Computer Physics Communications</i> , 2013, 184, 769-776.	7.5	12
63	Optical control of entangled states in semiconductor quantum wells. <i>Physical Review B</i> , 2012, 86, .	3.2	11
64	Colle-Salvetti-type local density functional for the exchange-correlation energy in two dimensions. <i>Physical Review A</i> , 2010, 82, .	2.5	10
65	Density-functional investigation of molecular graphene: CO on Cu(111). <i>Physical Review B</i> , 2014, 90, .	3.2	10
66	Path integral Monte Carlo benchmarks for two-dimensional quantum dots. <i>Physical Review B</i> , 2017, 96, .	3.2	10
67	Time-dependent transport in Aharonov-Bohm interferometers. <i>New Journal of Physics</i> , 2012, 14, 053024.	2.9	9
68	Billiards in magnetic fields: A molecular dynamics approach. <i>Physical Review E</i> , 2010, 81, 016703.	2.1	8
69	Two-electron quantum dot in tilted magnetic fields: Sensitivity to the confinement model. <i>European Physical Journal B</i> , 2013, 86, 1.	1.5	8
70	Optimal control of quantum revival. <i>European Physical Journal B</i> , 2013, 86, 1.	1.5	8
71	Dynamical heart beat correlations during running. <i>Scientific Reports</i> , 2020, 10, 13627.	3.3	8
72	Electronic properties of model quantum-dot structures in zero and finite magnetic fields. <i>European Physical Journal B</i> , 2002, 26, 241-252.	1.5	7

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73	Stability of the shell structure in two-dimensional quantum dots. <i>Physical Review B</i> , 2005, 71, .	3.2	7
74	Giant vortices in rotating electron droplets. <i>Physical Review B</i> , 2006, 73, .	3.2	7
75	Exchange-correlation potential with a proper long-range behavior for harmonically confined electron droplets. <i>Physical Review B</i> , 2010, 82, .	3.2	7
76	Chalcopyrite Semiconductors for Quantum Well Solar Cells. <i>Advanced Energy Materials</i> , 2011, 1, 1109-1115.	19.5	7
77	Constraints of reduced density-matrix functional theory for the two-dimensional homogeneous electron gas. <i>Physical Review B</i> , 2011, 84, .	3.2	7
78	Quantitative modeling of spin relaxation in quantum dots. <i>Physical Review B</i> , 2012, 85, .	3.2	7
79	Scaling in the correlation energies of two-dimensional artificial atoms. <i>Journal of Physics Condensed Matter</i> , 2013, 25, 505504.	1.8	7
80	Suppression of strong-field ionization by optimal pulse shaping: Application to hydrogen and the hydrogen molecular ion. <i>Physical Review A</i> , 2015, 91, .	2.5	7
81	Stability of the Dirac cone in artificial graphene formed in quantum wells: a computational many-electron study. <i>New Journal of Physics</i> , 2016, 18, 083014.	2.9	7
82	Scaling and correlation properties of RR and QT intervals at the cellular level. <i>Scientific Reports</i> , 2019, 9, 3651.	3.3	7
83	Coherent quantum switch driven by optimized laser pulses. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2008, 40, 1593-1595.	2.7	6
84	Large quantum rings in the $\nu = 1/2$ quantum Hall regime. <i>Journal of Physics Condensed Matter</i> , 2009, 21, 025301.	1.8	6
85	Exchange and correlation energy functionals for two-dimensional open-shell systems. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2010, 42, 1232-1235.	2.7	6
86	Large two-dimensional electronic systems: Self-consistent energies and densities at low cost. <i>Physical Review B</i> , 2013, 87, .	3.2	6
87	Electron magneto-tunneling through single self-assembled InAs quantum dashes. <i>Applied Physics Express</i> , 2014, 7, 045001.	2.4	6
88	Information transfer in QT-RR dynamics: Application to QT-correction. <i>Scientific Reports</i> , 2018, 8, 14992.	3.3	6
89	Maximum-density-droplet formation in hard-wall quantum dots. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2004, 22, 490-493.	2.7	5
90	Electronic structures in single self-assembled InAs quantum dashes detected by nanogap metal electrodes. <i>Applied Physics Letters</i> , 2011, 99, 182104.	3.3	5

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91	Observation of sequential spin flips in quantum rings. <i>Physical Review B</i> , 2011, 84, .	3.2	5
92	Many-electron transport in Aharonov-Bohm interferometers: A time-dependent density-functional study. <i>European Physical Journal B</i> , 2013, 86, 1.	1.5	5
93	Scaling in the correlation energies of atomic ions. <i>Physical Review A</i> , 2014, 90, .	2.5	5
94	Finite-size effects and interactions in artificial graphene formed by repulsive scatterers. <i>Journal of Physics Condensed Matter</i> , 2015, 27, 425501.	1.8	5
95	Bill2d – A software package for classical two-dimensional Hamiltonian systems. <i>Computer Physics Communications</i> , 2016, 199, 133-138.	7.5	5
96	Fundamental gaps of quantum dots on the cheap. <i>Physical Review B</i> , 2019, 99, .	3.2	5
97	Propagation of waves in high Brillouin zones: Chaotic branched flow and stable superwires. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	5
98	Statistics of closed quantum dots: Effects of disorder and interactions. <i>Physical Review B</i> , 2005, 72, .	3.2	4
99	Optimal control strategies for coupled quantum dots. <i>Open Physics</i> , 2013, 11, .	1.7	4
100	Stable and efficient momentum-space solutions of the time-dependent Schrödinger equation for one-dimensional atoms in strong laser fields. <i>Journal of Computational Physics</i> , 2014, 279, 174-181.	3.8	4
101	Energy-dependent diffusion in a soft periodic Lorentz gas. <i>European Physical Journal: Special Topics</i> , 2019, 228, 143-160.	2.6	4
102	Diagonalizations on a correlated basis. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2005, 26, 441-445.	2.7	3
103	Many-particle dynamics and intershell effects in Wigner molecules. <i>Journal of Physics Condensed Matter</i> , 2011, 23, 395602.	1.8	2
104	Prediction of quantum dot characteristics through universal scaling relations. <i>Journal of Physics Condensed Matter</i> , 2014, 26, 355501.	1.8	2
105	Validity of power functionals for a homogeneous electron gas in reduced-density-matrix-functional theory. <i>Physical Review A</i> , 2016, 93, .	2.5	2
106	Hermitian one-particle density matrix through a semiclassical gradient expansion. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2016, 49, 015205.	2.1	2
107	Universal scaling relations for the energies of many-electron Hooke atoms. <i>Physical Review A</i> , 2017, 95, .	2.5	2
108	Control of Rydberg-state population with realistic femtosecond laser pulses. <i>Physical Review A</i> , 2018, 98, .	2.5	2

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109	Density functional approach to the band gaps of finite and periodic two-dimensional systems. <i>Physical Review B</i> , 2021, 104, .	3.2	2
110	Characterization of deformed quantum dots by modeling single-electron-tunneling experiments. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2005, 26, 477-481.	2.7	1
111	Coulomb-interacting billiards in circular cavities. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2013, 46, 235102.	2.1	1
112	Stability of spin droplets in realistic quantum Hall devices. <i>Journal of Physics Condensed Matter</i> , 2013, 25, 155604.	1.8	1
113	Optimal control of charge with local gates in quantum-dot lattices. <i>European Physical Journal B</i> , 2014, 87, 1.	1.5	1
114	Self-consistent total-energy approximation for electron gas systems. <i>Physica Status Solidi (B): Basic Research</i> , 2015, 252, 496-501.	1.5	1
115	Controlled high-fidelity navigation in the charge stability diagram of a double quantum dot. <i>Journal of Physics Condensed Matter</i> , 2015, 27, 115303.	1.8	1
116	Extended Ewald summation technique. <i>Computer Physics Communications</i> , 2016, 206, 64-68.	7.5	1
117	Optimal control of photoelectron emission by realistic waveforms. <i>Journal of Modern Optics</i> , 2017, 64, 1784-1792.	1.3	1
118	Robust Estimation of the Scaling Exponent in Detrended Fluctuation Analysis of Beat Rate Variability. , 0, , .		1
119	Chalcopyrite Quantum Wells and Dots in Solar-Cell Applications. <i>Springer Series in Materials Science</i> , 2014, , 115-130.	0.6	1
120	Short- and Long-Range Correlations in Beat Rate Variability of Human Pluripotent-Stem-Cell-Derived Cardiomyocytes. , 0, , .		1
121	Level anticrossings in quantum dots. <i>AIP Conference Proceedings</i> , 2005, , .	0.4	0
122	Magnetization of Two-Dimensional Quantum Rings. <i>AIP Conference Proceedings</i> , 2006, , .	0.4	0
123	Addition-energy distributions of realistic few-electron quantum dots. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2006, 34, 624-627.	2.7	0
124	On the lower bound on the exchange-correlation energy in two dimensions. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2010, 42, 1236-1238.	2.7	0
125	Many-body effects in quantum rings: From the Aharonov-Bohm transport to the quantum Hall regime. , 2011, , .		0
126	Spin Droplet Formation in Quantum Dots. , 2011, , .		0



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127	Two-step semiclassical model for strong-field ionization with interference and multielectron polarization effects. Journal of Physics: Conference Series, 2015, 635, 092047.	0.4	0
128	Non-perturbative semiclassical model for strong-field ionization. Journal of Physics: Conference Series, 2017, 875, 022019.	0.4	0
129	Long-range auto-correlations in limit order book markets: Inter-and cross-event analysis. , 2017, , .		0
130	Detection of ST-Segment Variation in ECG Using Transfer Entropy. , 0, , .		0
131	Nonlinear Effects of Winter Swimming and Sauna Recreational Activities on the Heart Rate Variability. , 0, , .		0
132	Intrinsic Complexity of RR and QT Intervals at the Cellular Level. , 0, , .		0
133	Online Tool for Dynamical Heart Rate Variability Analysis. , 0, , .		0
134	Towards Accurate and Model-Free QT Correction. , 2021, , .		0