Emanuel C Gull

List of Publications by Year
in descending order

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117 papers	7,854 citations	57758 44 h-index	49909 87 g-index
122 all docs	122 docs citations	122 times ranked	3925 citing authors

#	Article	IF	Citations
1	Continuous-time MonteÂCarlo methods for quantum impurity models. Reviews of Modern Physics, 2011, 83, 349-404.	45.6	1,185
2	The ALPS project release 1.3: Open-source software for strongly correlated systems. Journal of Magnetism and Magnetic Materials, 2007, 310, 1187-1193.	2.3	623
3	The ALPS project release 2.0: open source software for strongly correlated systems. Journal of Statistical Mechanics: Theory and Experiment, 2011, 2011, P05001.	2.3	528
4	Solutions of the Two-Dimensional Hubbard Model: Benchmarks and Results from a Wide Range of Numerical Algorithms. Physical Review X, 2015, 5, .	8.9	398
5	Superconductivity and the Pseudogap in the Two-Dimensional Hubbard Model. Physical Review Letters, 2013, 110, 216405.	7.8	232
6	Continuous-time auxiliary-field Monte Carlo for quantum impurity models. Europhysics Letters, 2008, 82, 57003.	2.0	215
7	Spin Freezing Transition and Non-Fermi-Liquid Self-Energy in a Three-Orbital Model. Physical Review Letters, 2008, 101, 166405.	7.8	214
8	Order-by-disorder and spiral spin-liquid in frustrated diamond-lattice antiferromagnets. Nature Physics, 2007, 3, 487-491.	16.7	202
9	Towards the Solution of the Many-Electron Problem in Real Materials: Equation of State of the Hydrogen Chain with State-of-the-Art Many-Body Methods. Physical Review X, 2017, 7, .	8.9	171
10	Momentum-space anisotropy and pseudogaps: A comparative cluster dynamical mean-field analysis of the doping-driven metal-insulator transition in the two-dimensional Hubbard model. Physical Review B, 2010, 82, .	3.2	143
11	Taming the Dynamical Sign Problem in Real-Time Evolution of Quantum Many-Body Problems. Physical Review Letters, 2015, 115, 266802.	7.8	138
12	Numerically exact long-time magnetization dynamics at the nonequilibrium Kondo crossover of the Anderson impurity model. Physical Review B, 2013, 87, .	3.2	111
13	The Hubbard Model: A Computational Perspective. Annual Review of Condensed Matter Physics, 2022, 13, 275-302.	14.5	109
14	Diagrammatic Monte Carlo for correlated fermions. Europhysics Letters, 2010, 90, 10004.	2.0	107
15	Truncated configuration interaction expansions as solvers for correlated quantum impurity models and dynamical mean-field theory. Physical Review B, 2012, 86, .	3.2	107
16	Thermodynamics of the 3D Hubbard Model on Approaching the NÃ©el Transition. Physical Review Letters, 2011, 106, 030401.	7.8	99
17	Momentum-sector-selective metal-insulator transition in the eight-site dynamical mean-field approximation to the Hubbard model in two dimensions. Physical Review B, 2009, 80, .	3.2	98
18	Fluctuation Diagnostics of the Electron Self-Energy: Origin of the Pseudogap Physics. Physical Review Letters, 2015, 114, 236402.	7.8	95

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19	Local order and the gapped phase of the Hubbard model: A plaquette dynamical mean-field investigation. Europhysics Letters, 2008, 84, 37009.	2.0	89
20	Metal-insulator phase diagram and orbital selectivity in three-orbital models with rotationally invariant Hund coupling. Physical Review B, 2009, 79, .	3.2	83
21	Greenâ€™s Functions from Real-Time Bold-Line MonteÂCarlo Calculations: Spectral Properties of the Nonequilibrium Anderson Impurity Model. Physical Review Letters, 2014, 112, 146802.	7.8	80
22	Momentum-selective metal-insulator transition in the two-dimensional Hubbard model: An 8-site dynamical cluster approximation study. Physical Review B, 2009, 80, .	3.2	78
23	Systematically improvable multiscale solver for correlated electron systems. Physical Review B, 2015, 91, .	3.2	77
24	Submatrix updates for the continuous-time auxiliary-field algorithm. Physical Review B, 2011, 83, .	3.2	76
25	Antiferromagnetism and the gap of a Mott insulator: Results from analytic continuation of the self-energy. Physical Review B, 2009, 80, .	3.2	72
26	Updated core libraries of the ALPS project. Computer Physics Communications, 2017, 213, 235-251.	7.5	71
27	Implementation of the maximum entropy method for analytic continuation. Computer Physics Communications, 2017, 215, 149-155.	7.5	69
28	Direct Comparison of Many-Body Methods for Realistic Electronic Hamiltonians. Physical Review X, 2020, 10, .	8.9	68
29	Dynamical Mean Field Solution of the Bose-Hubbard Model. Physical Review Letters, 2010, 105, 096402.	7.8	67
30	Bold-line diagrammatic Monte Carlo method: General formulation and application to expansion around the noncrossing approximation. Physical Review B, 2010, 82, .	3.2	64
31	Energetics of superconductivity in the two-dimensional Hubbard model. Physical Review B, 2012, 86, .	3.2	64
32	Finite temperature quantum embedding theories for correlated systems. New Journal of Physics, 2017, 19, 023047.	2.9	63
33	Efficient implementation of the continuous-time hybridization expansion quantum impurity solver. Computer Physics Communications, 2013, 184, 1280-1286.	7.5	61
34	Performance analysis of continuous-time solvers for quantum impurity models. Physical Review B, 2007, 76, .	3.2	57
35	Numerically exact long-time behavior of nonequilibrium quantum impurity models. Physical Review B, 2011, 84, .	3.2	55
36	Physics of the pseudogap in eight-site cluster dynamical mean-field theory: Photoemission, Raman scattering, and in-plane and<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>c</mml:mi></mml:math>-axis conductivity. Physical Review B, 2010, 82, .	3.2	54

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37	Sparse sampling approach to efficient ab initio calculations at finite temperature. Physical Review B, 2020, 101, .	3.2	53
38	Green's functions from real-time bold-line Monte Carlo. Physical Review B, 2014, 89, .	3.2	51
39	Dynamical mean-field theory for bosons. New Journal of Physics, 2011, 13, 075013.	2.9	50
40	Mechanisms of finite-temperature magnetism in the three-dimensional Hubbard model. Physical Review B, 2015, 92, .	3.2	50
41	Continuous-time quantum Monte Carlo impurity solvers. Computer Physics Communications, 2011, 182, 1078-1082.	7.5	48
42	Charge ordering and correlation effects in the extended Hubbard model. Physical Review B, 2017, 95, .	3.2	47
43	Critical Exponents of Strongly Correlated Fermion Systems from Diagrammatic Multiscale Methods. Physical Review Letters, 2014, 112, 226401.	7.8	46
44	Equation of state of the fermionic two-dimensional Hubbard model. Physical Review B, 2013, 88, .	3.2	45
45	Continuous-time quantum Monte Carlo using worm sampling. Physical Review B, 2015, 92, .	3.2	43
46	Nevanlinna Analytical Continuation. Physical Review Letters, 2021, 126, 056402.	7.8	43
47	Numerically exact full counting statistics of the nonequilibrium Anderson impurity model. Physical Review B, 2018, 97, .	3.2	42
48	Strong-coupling phases of frustrated bosons on a two-leg ladder with ring exchange. Physical Review B, 2008, 78, .	3.2	40
49	Optical conductivity from cluster dynamical mean-field theory: Formalism and application to high-temperature superconductors. Physical Review B, 2009, 80, .	3.2	40
50	Spectral properties of the three-dimensional Hubbard model. Physical Review B, 2011, 83, .	3.2	39
51	Two-Particle Response in Cluster Dynamical Mean-Field Theory: Formalism and Application to the Raman Response of High-Temperature Superconductors. Physical Review Letters, 2012, 109, 106401.	7.8	37
52	Superconducting Fluctuations in the Normal State of the Two-Dimensional Hubbard Model. Physical Review Letters, 2015, 115, 116402.	7.8	37
53	Diagrammatic Monte Carlo for dual fermions. Physical Review B, 2016, 94, .	3.2	36
54	Currents and Green's functions of impurities out of equilibrium: Results from inchworm quantum Monte Carlo. Physical Review B, 2017, 95, .	3.2	36

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55	Quasiparticle properties of the superconducting state of the two-dimensional Hubbard model. Physical Review B, 2015, 91, .	3.2	35
56	Impurity effects in highly frustrated diamond-lattice antiferromagnets. Physical Review B, 2011, 84, .	3.2	33
57	Thermodynamics and Magnetic Properties of the Anisotropic 3D Hubbard Model. Physical Review Letters, 2014, 112, 115301.	7.8	33
58	Pairing glue in the two-dimensional Hubbard model. Physical Review B, 2014, 90, .	3.2	33
59	Voltage Quench Dynamics of a Kondo System. Physical Review Letters, 2016, 116, 036801.	7.8	33
60	Chebyshev polynomial representation of imaginary-time response functions. Physical Review B, 2018, 98, .	3.2	32
61	Ab initio self-energy embedding for the photoemission spectra of NiO and MnO. Physical Review B, 2020, 102, .	3.2	31
62	Analytical continuation of matrix-valued functions: CarathÃ©odory formalism. Physical Review B, 2021, 104, .	3.2	31
63	Efficient Temperature-Dependent Greenâ€™s Function Methods for Realistic Systems: Using Cubic Spline Interpolation to Approximate Matsubara Greenâ€™s Functions. Journal of Chemical Theory and Computation, 2016, 12, 2250-2259.	5.3	30
64	Symmetry projection schemes for Gaussian Monte Carlo methods. Physical Review B, 2005, 72, .	3.2	29
65	Continuous-time hybridization expansion quantum impurity solver for multi-orbital systems with complex hybridizations. Computer Physics Communications, 2017, 215, 128-136.	7.5	29
66	Superconducting Phase and Pairing Fluctuations in the Half-Filled Two-Dimensional Hubbard Model. Physical Review Letters, 2011, 107, 126401.	7.8	28
67	Dynamics of Kondo voltage splitting after a quantum quench. Physical Review B, 2019, 100, .	3.2	28
68	Simulation of the NMR response in the pseudogap regime of the cuprates. Nature Communications, 2017, 8, 14986.	12.8	26
69	Quantum Monte Carlo solution of the dynamical mean field equations in real time. Physical Review B, 2017, 96, .	3.2	26
70	Overcomplete compact representation of two-particle Green's functions. Physical Review B, 2018, 97, .	3.2	26
71	Slope invariant <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>T</mml:mi></mml:math> -linear resistivity from local self-energy. Physical Review Research, 2020, 2, .	3.6	26
72	Role of three-particle vertex within dual fermion calculations. Physical Review B, 2017, 96, .	3.2	24

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73	Inclusion-exclusion principle for many-body diagrammatics. Physical Review B, 2018, 98, .	3.2	24
74	Charge order and antiferromagnetism in the extended Hubbard model. Physical Review B, 2019, 99, .	3.2	24
75	Testing self-energy embedding theory in combination with GW. Physical Review B, 2017, 96, .	3.2	22
76	Quenched dynamics in interacting one-dimensional systems: Appearance of current-carrying steady states from initial domain wall density profiles. Physical Review B, 2010, 82, .	3.2	20
77	Lead geometry and transport statistics in molecular junctions. Journal of Chemical Physics, 2019, 150, 244107.	3.0	20
78	Charge ordering and nonlocal correlations in the doped extended Hubbard model. Physical Review B, 2018, 97, .	3.2	19
79	Effect of propagator renormalization on the band gap of insulating solids. Physical Review B, 2019, 100, .	3.2	19
80	Numerically exact full counting statistics of the energy current in the Kondo regime. Physical Review B, 2019, 100, .	3.2	19
81	Multiorbital Quantum Impurity Solver for General Interactions and Hybridizations. Physical Review Letters, 2020, 124, 206405.	7.8	19
82	Legendre-spectral Dyson equation solver with super-exponential convergence. Journal of Chemical Physics, 2020, 152, 134107.	3.0	19
83	Optimized ensemble Monte Carlo simulations of dense Lennard-Jones fluids. Journal of Chemical Physics, 2005, 123, 204501.	3.0	18
84	Superconducting and pseudogap effects on the interplane conductivity and Raman scattering cross section in the two-dimensional Hubbard model. Physical Review B, 2013, 88, .	3.2	18
85	Magnetic and charge susceptibilities in the half-filled triangular lattice Hubbard model. Physical Review Research, 2020, 2, .	3.6	18
86	Magnetic susceptibility of cerium: An LDA<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mo>+</mml:mo></mml:math>DMFT study. Physical Review B, 2012, 85, .	3.2	16
87	Magnetic susceptibility and simulated neutron signal in the two-dimensional Hubbard model. Physical Review B, 2019, 100, .	3.2	16
88	Sum rule violation in self-consistent hybridization expansions. Physical Review B, 2013, 87, .	3.2	15
89	Opendf - An Implementation of the Dual Fermion Method for Strongly Correlated Systems. Physics Procedia, 2015, 68, 43-51.	1.2	15
90	Sparse sampling and tensor network representation of two-particle Green's functions. SciPost Physics, 2020, 8, .	4.9	15

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91	Charge and spin criticality for the continuous Mott transition in a two-dimensional organic conductor. Physical Review B, 2011, 84, .	3.2	14
92	Dynamical charge susceptibility in the Hubbard model. Physical Review B, 2019, 100, .	3.2	14
93	Electron correlations in the cubic paramagnetic perovskite <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Sr</mml:mi><mml:mo>(</mml:mo><mml:mi) Tj ETQq1 1 0.784314 mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math> : Results from fully self-consistent self-energy embedding calculations. Physical Review B, 2021, 103, .	3.2	13
94	Numerical models come of age. Nature Physics, 2015, 11, 808-810.	16.7	12
95	Optimized broad-histogram ensembles for the simulation of quantum systems. Journal of Statistical Mechanics: Theory and Experiment, 2007, 2007, P12005-P12005.	2.3	11
96	Revealing strong correlations in higher-order transport statistics: A noncrossing approximation approach. Physical Review B, 2021, 103, .	3.2	11
97	Momentum-space cluster dual-fermion method. Physical Review B, 2018, 97, .	3.2	10
98	Optimized broad-histogram simulations for strong first-order phase transitions: droplet transitions in the large-QPotts model. Journal of Statistical Mechanics: Theory and Experiment, 2010, 2010, P01020.	2.3	9
99	Diagrammatic Monte Carlo method for impurity models with general interactions and hybridizations. Physical Review Research, 2020, 2, .	3.6	9
100	Theory of charged impurities in correlated electron materials: Application to muon spectroscopy of high-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mi>T</mml:mi><mml:mi>c</mml:mi></mml:msub></mml:mrow></mml:math>superco Physical Review B, 2010, 81, .	3.2	8
101	Ferromagnetic spin correlations in the two-dimensional Hubbard model. Physical Review Research, 2020, 2, .	3.6	8
102	Short-range charge fluctuations in the two-dimensional Hubbard model. Physical Review B, 2020, 101, .	3.2	7
103	Dynamical cluster approximation study of electron localization in the extended Hubbard model. Physical Review B, 2021, 104, .	3.2	7
104	Dynamic control of nonequilibrium metal-insulator transitions. Physical Review B, 2020, 102, .	3.2	6
105	Material-Specific Optimization of Gaussian Basis Sets against Plane Wave Data. Journal of Chemical Theory and Computation, 2021, 17, 5611-5622.	5.3	6
106	Phase transitions in partial summation methods: Results from the three-dimensional Hubbard model. Physical Review B, 2022, 105, .	3.2	6
107	Interaction-expansion inchworm Monte Carlo solver for lattice and impurity models. Physical Review B, 2022, 105, .	3.2	5
108	Comparative DMFT study of the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>e</mml:mi><mml:mi>g</mml:mi></mml:msub></mml:ma Hubbard model in thin films. Physical Review B, 2014, 89, .	3.2	4

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109	Efficient implementation of the continuous-time interaction-expansion quantum Monte Carlo method. Computer Physics Communications, 2020, 252, 106826.	7.5	4
110	Kondo cloud in a one-dimensional nanowire. Physical Review B, 2022, 105, .	3.2	4
111	Gaussian Quantum Monte Carlo methods with symmetry projection. AIP Conference Proceedings, 2006, , .	0.4	2
112	Continuous-time quantum impurity solvers. Physics Procedia, 2010, 6, 31-34.	1.2	2
113	Hypothesis testing of scientific Monte Carlo calculations. Physical Review E, 2017, 96, 053303.	2.1	2
114	Thermodynamics of the Hubbard model on stacked honeycomb and square lattices. European Physical Journal B, 2016, 89, 1.	1.5	1
115	Implementation of the bin hierarchy method for restoring a smooth function from a sampled histogram. Computer Physics Communications, 2019, 236, 205-213.	7.5	1
116	Fermionic and Continuous Time Quantum Monte Carlo. Springer Series in Solid-state Sciences, 2013, , 293-319.	0.3	0
117	Ensemble Optimization Techniques for the Simulation of Slowly Equilibrating Systems. Springer Proceedings in Physics, 2009, , 33-47.	0.2	0