

Stefan Rotter

List of Publications by Year in descending order

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Version: 2024-02-01

158
papers

10,140
citations

66234

42
h-index

33814

99
g-index

161
all docs

161
docs citations

161
times ranked

5899
citing authors

#	ARTICLE	IF	CITATIONS
1	Non-Hermitian physics and PT symmetry. Nature Physics, 2018, 14, 11-19.	6.5	1,620
2	Parity–time symmetry and exceptional points in photonics. Nature Materials, 2019, 18, 783-798.	13.3	940
3	Loss-induced suppression and revival of lasing. Science, 2014, 346, 328-332.	6.0	748
4	Dynamically encircling an exceptional point for asymmetric mode switching. Nature, 2016, 537, 76-79.	13.7	684
5	Chiral modes and directional lasing at exceptional points. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 6845-6850.	3.3	422
6	Reversing the pump dependence of a laser at an exceptional point. Nature Communications, 2014, 5, 4034.	5.8	411
7	Light fields in complex media: Mesoscopic scattering meets wave control. Reviews of Modern Physics, 2017, 89, .	16.4	403
8	Pump-Induced Exceptional Points in Lasers. Physical Review Letters, 2012, 108, 173901.	2.9	396
9	Strong Interactions in Multimode Random Lasers. Science, 2008, 320, 643-646.	6.0	348
10	Cavity QED with Magnetically Coupled Collective Spin States. Physical Review Letters, 2011, 107, 060502.	2.9	275
11	A phonon laser operating at an exceptional point. Nature Photonics, 2018, 12, 479-484.	15.6	264
12	General description of quasiadiabatic dynamical phenomena near exceptional points. Physical Review A, 2015, 92, .	1.0	156
13	Gravity Resonance Spectroscopy Constrains Dark Energy and Dark Matter Scenarios. Physical Review Letters, 2014, 112, 151105.	2.9	136
14	Protecting a spin ensemble against decoherence in the strong-coupling regime of cavity QED. Nature Physics, 2014, 10, 720-724.	6.5	118
15	Constant-intensity waves and their modulation instability in non-Hermitian potentials. Nature Communications, 2015, 6, 7257.	5.8	105
16	Pump-Controlled Directional Light Emission from Random Lasers. Physical Review Letters, 2013, 111, 023902.	2.9	102
17	Perfectly Absorbing Exceptional Points and Chiral Absorbers. Physical Review Letters, 2019, 122, 093901.	2.9	101
18	Random anti-lasing through coherent perfect absorption in a disordered medium. Nature, 2019, 567, 351-355.	13.7	95

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19	Modular recursive Green's function method for ballistic quantum transport. Physical Review B, 2000, 62, 1950-1960.	1.1	94
20	Unconventional modes in lasers with spatially varying gain and loss. Physical Review A, 2011, 84, .	1.0	92
21	Random lasers for broadband directional emission. Optica, 2016, 3, 1035.	4.8	86
22	Constant-pressure sound waves in non-Hermitian disordered media. Nature Physics, 2018, 14, 942-947.	6.5	85
23	Spatiotemporal Control of Light Transmission through a Multimode Fiber with Strong Mode Coupling. Physical Review Letters, 2016, 117, 053901.	2.9	77
24	Breaking of PT Symmetry in Bounded and Unbounded Scattering Systems. Physical Review X, 2013, 3, .	2.8	67
25	Observation of mean path length invariance in light-scattering media. Science, 2017, 358, 765-768.	6.0	64
26	Probing Decoherence through Fano Resonances. Physical Review Letters, 2010, 105, 056801.	2.9	63
27	$\mathcal{P}\mathcal{T}$ -symmetry breaking in the steady state of microscopic gain-loss systems. New Journal of Physics, 2016, 18, 095003.	1.2	63
28	Wave propagation through disordered media without backscattering and intensity variations. Light: Science and Applications, 2017, 6, e17035-e17035.	7.7	60
29	Smooth Optimal Quantum Control for Robust Solid-State Spin Magnetometry. Physical Review Letters, 2015, 115, 190801.	2.9	57
30	Chiral and degenerate perfect absorption on exceptional surfaces. Nature Communications, 2022, 13, 599.	5.8	55
31	Coherent Coupling of Remote Spin Ensembles via a Cavity Bus. Physical Review Letters, 2017, 118, 140502.	2.9	53
32	Tunable Fano resonances in transport through microwave billiards. Physical Review E, 2004, 69, 046208.	0.8	50
33	Invariance property of wave scattering through disordered media. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 17765-17770.	3.3	50
34	Coherent transport through graphene nanoribbons in the presence of edge disorder. New Journal of Physics, 2012, 14, 123006.	1.2	49
35	Random Lasing with Systematic Threshold Behavior in Films of CdSe/CdS Core/Thick-Shell Colloidal Quantum Dots. ACS Nano, 2015, 9, 9792-9801.	7.3	49
36	Ballistic quantum transport at high energies and high magnetic fields. Physical Review B, 2003, 68, .	1.1	48

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37	Focusing inside Disordered Media with the Generalized Wigner-Smith Operator. Physical Review Letters, 2017, 119, 033903.	2.9	46
38	Generating Particlelike Scattering States in Wave Transport. Physical Review Letters, 2011, 106, 120602.	2.9	45
39	Parity-time symmetry from stacking purely dielectric and magnetic slabs. Physical Review A, 2015, 91, .	1.0	45
40	Roadmap on wavefront shaping and deep imaging in complex media. JPhys Photonics, 2022, 4, 042501.	2.2	45
41	Ab initio self-consistent laser theory and random lasers. Nonlinearity, 2009, 22, C1-C18.	0.6	44
42	Spectral hole burning and its application in microwave photonics. Nature Photonics, 2017, 11, 36-39.	15.6	43
43	Principal modes in multimode fibers: exploring the crossover from weak to strong mode coupling. Optics Express, 2017, 25, 2709.	1.7	43
44	The single-channel regime of transport through random media. Nature Communications, 2014, 5, 3488.	5.8	42
45	Transition to Landau levels in graphene quantum dots. Physical Review B, 2010, 81, .	1.1	40
46	Scalable numerical approach for the steady-state ab initio laser theory. Physical Review A, 2014, 90, .	1.0	40
47	Optimal wave fields for micromanipulation in complex scattering environments. Nature Photonics, 2020, 14, 149-153.	15.6	37
48	Reconfigurable symmetry-broken laser in a symmetric microcavity. Nature Communications, 2020, 11, 1136.	5.8	35
49	Emergence of PT-symmetry breaking in open quantum systems. SciPost Physics, 2020, 9, .	1.5	35
50	Observation of chiral state transfer without encircling an exceptional point. Nature, 2022, 605, 256-261.	13.7	34
51	Nanowires with Surface Disorder: Giant Localization Lengths and Quantum-to-Classical Crossover. Physical Review Letters, 2006, 97, 116804.	2.9	33
52	Route from spontaneous decay to complex multimode dynamics in cavity QED. Physical Review A, 2014, 89, .	1.0	33
53	Topological insulator in the presence of spatially correlated disorder. Physical Review B, 2013, 88, .	1.1	32
54	Non-Markovian dynamics of a single-mode cavity strongly coupled to an inhomogeneously broadened spin ensemble. Physical Review A, 2014, 90, .	1.0	32

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55	Shot Noise in the Chaotic-to-Regular Crossover Regime. <i>Physical Review Letters</i> , 2005, 94, 216801.	2.9	31
56	Ultralong relaxation times in bistable hybrid quantum systems. <i>Science Advances</i> , 2017, 3, e1701626.	4.7	31
57	Maximum information states for coherent scattering measurements. <i>Nature Physics</i> , 2021, 17, 564-568.	6.5	30
58	Topological modes in a laser cavity through exceptional state transfer. <i>Science</i> , 2022, 375, 884-888.	6.0	30
59	3D-printed phase waveplates for THz beam shaping. <i>Applied Physics Letters</i> , 2018, 112, .	1.5	29
60	Simulation of electron transport through a quantum dot with soft walls. <i>Physical Review B</i> , 2005, 72, .	1.1	28
61	Anti-reflection structure for perfect transmission through complex media. <i>Nature</i> , 2022, 607, 281-286.	13.7	28
62	Double-layered nanoparticle stacks for surface enhanced infrared absorption spectroscopy. <i>Nanoscale</i> , 2014, 6, 127-131.	2.8	27
63	Analytical study of quantum-feedback-enhanced Rabi oscillations. <i>Physical Review A</i> , 2015, 92, .	1.0	24
64	Scattering-free channels of invisibility across non-Hermitian media. <i>Optica</i> , 2020, 7, 619.	4.8	24
65	Scattering invariant modes of light in complex media. <i>Nature Photonics</i> , 2021, 15, 431-434.	15.6	23
66	Hybrid Quantum Systems with Collectively Coupled Spin States: Suppression of Decoherence through Spectral Hole Burning. <i>Physical Review Letters</i> , 2015, 115, 033601.	2.9	21
67	Unidirectional zero reflection as gauged parity-time symmetry. <i>New Journal of Physics</i> , 2017, 19, 123041.	1.2	21
68	Semiclassical theory for transmission through open billiards: Convergence towards quantum transport. <i>Physical Review E</i> , 2003, 67, 016206.	0.8	20
69	Effective PT-symmetric metasurfaces for subwavelength amplified sensing. <i>New Journal of Physics</i> , 2016, 18, 085004.	1.2	20
70	Particlelike wave packets in complex scattering systems. <i>Physical Review B</i> , 2016, 94, .	1.1	20
71	Angular Memory Effect of Transmission Eigenchannels. <i>Physical Review Letters</i> , 2019, 123, 203901.	2.9	20
72	Shaping the branched flow of light through disordered media. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 13260-13265.	3.3	19

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73	All-optical adaptive control of quantum cascade random lasers. <i>Nature Communications</i> , 2020, 11, 5530.	5.8	19
74	Sustained photon pulse revivals from inhomogeneously broadened spin ensembles. <i>Laser and Photonics Reviews</i> , 2016, 10, 1023-1030.	4.4	17
75	Scattering-free pulse propagation through invisible non-Hermitian media. <i>Physical Review B</i> , 2019, 99, .	1.1	17
76	Fano resonances and decoherence in transport through quantum dots. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2005, 29, 325-333.	1.3	16
77	Steady-state <i>ab initio</i> laser theory for fully or nearly degenerate cavity modes. <i>Physical Review A</i> , 2015, 92, .	1.0	16
78	Twofold \mathcal{PT} symmetry in doubly exponential optical lattices. <i>Physical Review A</i> , 2016, 93, .	1.0	16
79	Super- and Anti-Principal-Modes in Multimode Waveguides. <i>Physical Review X</i> , 2017, 7, .	2.8	16
80	<i>In situ</i> realization of particlelike scattering states in a microwave cavity. <i>Physical Review A</i> , 2018, 97, .	1.0	16
81	Echo Trains in Pulsed Electron Spin Resonance of a Strongly Coupled Spin Ensemble. <i>Physical Review Letters</i> , 2020, 125, 137701.	2.9	16
82	Transport in chaotic quantum dots: Effects of spatial symmetries which interchange the leads. <i>Physical Review B</i> , 2006, 73, .	1.1	15
83	Critical phenomena and nonlinear dynamics in a spin ensemble strongly coupled to a cavity. II. Semiclassical-to-quantum boundary. <i>Physical Review A</i> , 2019, 100, .	1.0	15
84	Pseudopath semiclassical approximation to transport through open quantum billiards: Dyson equation for diffractive scattering. <i>Physical Review E</i> , 2005, 72, 036223.	0.8	13
85	Diffractive paths for weak localization in quantum billiards. <i>Physical Review B</i> , 2008, 77, .	1.1	13
86	Surface scattering and band gaps in rough waveguides and nanowires. <i>Physical Review B</i> , 2012, 86, .	1.1	13
87	Constant Intensity Supermodes in Non-Hermitian Lattices. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2016, 22, 42-47.	1.9	13
88	Encircling exceptional points as a non-Hermitian extension of rapid adiabatic passage. <i>Physical Review A</i> , 2020, 102, .	1.0	13
89	Shape-preserving beam transmission through non-Hermitian disordered lattices. <i>Physical Review A</i> , 2020, 102, .	1.0	13
90	Observation of photonic constant-intensity waves and induced transparency in tailored non-Hermitian lattices. <i>Science Advances</i> , 2022, 8, .	4.7	13

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91	Statistics of transmission eigenvalues in two-dimensional quantum cavities: Ballistic versus stochastic scattering. <i>Physical Review B</i> , 2007, 75, .	1.1	12
92	Percolating states in the topological Anderson insulator. <i>Physical Review B</i> , 2015, 91, .	1.1	12
93	Interaction-induced mode switching in steady-state microlasers. <i>Optics Express</i> , 2016, 24, 41.	1.7	12
94	Variational Renormalization Group for Dissipative Spin-Cavity Systems: Periodic Pulses of Nonclassical Photons from Mesoscopic Spin Ensembles. <i>Physical Review Letters</i> , 2018, 121, 133601.	2.9	12
95	Speckle Engineering through Singular Value Decomposition of the Transmission Matrix. <i>Physical Review Letters</i> , 2021, 127, 093903.	2.9	12
96	Nanowires with surface disorder: Giant localization length and dynamical tunneling in the presence of directed chaos. <i>Physical Review B</i> , 2009, 80, .	1.1	11
97	Transport through open quantum dots: Making semiclassics quantitative. <i>Physical Review B</i> , 2010, 81, .	1.1	11
98	Disorder scattering in graphene nanoribbons. <i>Physica Status Solidi (B): Basic Research</i> , 2011, 248, 2598-2603.	0.7	11
99	Modulational instability in a PT-symmetric vector nonlinear Schrödinger system. <i>Physica D: Nonlinear Phenomena</i> , 2016, 336, 53-61.	1.3	11
100	Critical phenomena and nonlinear dynamics in a spin ensemble strongly coupled to a cavity. I. Semiclassical approach. <i>Physical Review A</i> , 2019, 100, .	1.0	11
101	Mean path length invariance in wave-scattering beyond the diffusive regime. <i>Communications Physics</i> , 2021, 4, .	2.0	10
102	Staggered repulsion of transmission eigenvalues in symmetric open mesoscopic systems. <i>Physical Review B</i> , 2008, 78, .	1.1	9
103	Bound states in Andreev billiards with soft walls. <i>Physical Review B</i> , 2005, 72, .	1.1	8
104	Temporal light control in complex media through the singular-value decomposition of the time-gated transmission matrix. <i>Physical Review A</i> , 2022, 105, .	1.0	8
105	Ring quantum cascade lasers with twisted wavefronts. <i>Scientific Reports</i> , 2018, 8, 7998.	1.6	7
106	Optimal Control of Coherent Light Scattering for Binary Decision Problems. <i>Physical Review Letters</i> , 2021, 127, 253902.	2.9	7
107	Transforming Space with Non-Hermitian Dielectrics. <i>Physical Review Letters</i> , 2022, 128, 183901.	2.9	7
108	Non-retracing orbits in Andreev billiards. <i>Physical Review B</i> , 2006, 73, .	1.1	5

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109	Reflection resonances in surface-disordered waveguides: strong higher-order effects of the disorder. <i>New Journal of Physics</i> , 2014, 16, 053026.	1.2	5
110	Customizing the Angular Memory Effect for Scattering Media. <i>Physical Review X</i> , 2021, 11, .	2.8	5
111	Comment on "Dynamic range of nanotube- and nanowire-based electromechanical systems" [Appl. Phys. Lett. 86, 223105 (2005)]. <i>Applied Physics Letters</i> , 2006, 88, 036101.	1.5	4
112	Interacting Quantum Dot Coupled to a Kondo Spin: A Universal Hamiltonian Study. <i>Physical Review Letters</i> , 2008, 100, 166601.	2.9	4
113	Transport through graphene nanoribbons: Suppression of transverse quantization by symmetry breaking. <i>Physica Status Solidi (B): Basic Research</i> , 2016, 253, 2366-2372.	0.7	4
114	Symmetry, stability, and computation of degenerate lasing modes. <i>Physical Review A</i> , 2017, 95, .	1.0	4
115	Optimal control of non-Markovian dynamics in a single-mode cavity strongly coupled to an inhomogeneously broadened spin ensemble. <i>Physical Review A</i> , 2017, 96, .	1.0	4
116	Decreasing excitation gap in Andreev billiards by disorder scattering. <i>Europhysics Letters</i> , 2008, 82, 47006.	0.7	3
117	Playing pinball with light. <i>Nature Physics</i> , 2014, 10, 412-413.	6.5	3
118	Diffusive to quasi-ballistic random laser: incoherent and coherent models. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2016, 33, 1888.	0.9	3
119	Exceptional quantum behaviour. <i>Nature Physics</i> , 2019, 15, 1214-1215.	6.5	3
120	Chladni figures in Andreev billiards. <i>European Physical Journal: Special Topics</i> , 2007, 145, 245-254.	1.2	2
121	Vectorial velocity filter for ultracold neutrons based on a surface-disordered mirror system. <i>Physical Review E</i> , 2014, 89, 032907.	0.8	2
122	Superabsorption by time-reversing superradiance. <i>Nature Photonics</i> , 2021, 15, 251-252.	15.6	2
123	Strong-coupling limit of a Kondo spin coupled to a mesoscopic quantum dot: Effective Hamiltonian in the presence of exchange correlations. <i>Physical Review B</i> , 2009, 80, .	1.1	1
124	A laser model for cosmology. <i>Nature</i> , 2017, 549, 163-164.	18.7	1
125	Wave control in non-Hermitian disordered media. , 2017, , .		1
126	Non-Hermitian focusing deep inside strongly disordered scattering media. , 2017, , .		1

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127	Constant-Intensity Waves in Non-Hermitian Media. Springer Tracts in Modern Physics, 2018, , 535-555.	0.1	1
128	<i>Symmetry Goes Quantum</i> . Physics Magazine, 0, 11, .	0.1	1
129	Network lasers. Nature Photonics, 2019, 13, 140-141.	15.6	1
130	A Modular Method for the Efficient Calculation of Ballistic Transport Through Quantum Billiards. Lecture Notes in Computer Science, 2006, , 586-593.	1.0	1
131	Non-Hermitian invisibility based on constant-intensity waves. , 2017, , .		1
132	Invariance Property of the Fisher Information in Scattering Media. Physical Review Letters, 2021, 127, 233201.	2.9	1
133	Chaotic-to-regular crossover of shot noise in mesoscopic conductors. AIP Conference Proceedings, 2005, , .	0.3	0
134	Theory of the Spatial Structure of Non-linear Modes in Novel and Complex Laser Cavities. , 2007, , .		0
135	Shot noise in transport through quantum dots: ballistic versus diffractive scattering. , 2007, , .		0
136	Shot noise in transport through quantum dots: Clean versus disordered samples. Journal of Computational Electronics, 2007, 6, 109-111.	1.3	0
137	Using gate voltages to tune the noise properties of a mesoscopic cavity. , 2009, , .		0
138	Exceptional points in coupled microdisk THz quantum cascade lasers. , 2013, , .		0
139	Principal modes of a multimode fiber with strong mode coupling. , 2016, , .		0
140	Particle-like wave packets in complex scattering systems. , 2016, , .		0
141	Wave Engineering in Complex Media. , 2018, , .		0
142	Non-Hermitian Wave Control in Scattering Disordered Media. , 2018, , .		0
143	Towards Holistic Control of THz Quantum Cascade Random Lasers. , 2021, , .		0
144	Tailored non-Hermiticity induced suppression of scattering. , 2021, , .		0

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145	All-Optical Control of Quantum Cascade Random Lasers Enhanced by Deep Learning. , 2021, , .		0
146	Local tailoring of light in inhomogeneous scattering media. , 2021, , .		0
147	Light Confinement by Local Index Tailoring in Inhomogeneous Dielectrics. Laser and Photonics Reviews, 2021, 15, 2100115.	4.4	0
148	Theory of Diffusive Random Lasers. , 2008, , .		0
149	Lasing in Chaotic and Random Scattering Media. , 2009, , .		0
150	Probing decoherence through Fano resonances. , 2010, , .		0
151	Constant intensity waves and transmission through non-Hermitian disordered media. , 2016, , .		0
152	When the Structure Becomes Insignificant: Invariance of the Mean Path Length in Light-Scattering Media. , 2018, , .		0
153	Two-Dimensional Constant-Intensity Waves in Non-Hermitian Scattering Media. , 2019, , .		0
154	Implementing Optimal Field Configurations for Micromanipulation. , 2019, , .		0
155	A Random Anti-Laser Implemented by Coherent Perfect Absorption in a Disordered Medium. , 2019, , .		0
156	Periodic Cavity State Revivals from Atomic Frequency Combs. Physical Review Letters, 2021, 127, 180402.	2.9	0
157	Reflectionless wavepackets in non-Hermitian disordered lattices. , 2020, , .		0
158	Bimodal Directional Laser. , 2020, , .		0