

Sergej Flach

List of Publications by Year in descending order

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136
papers

10,282
citations

66234

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138
docs citations

138
times ranked

5871
citing authors

#	ARTICLE	IF	CITATIONS
1	Fano resonances in nanoscale structures. <i>Reviews of Modern Physics</i> , 2010, 82, 2257-2298.	16.4	2,434
2	Discrete breathers. <i>Physics Reports</i> , 1998, 295, 181-264.	10.3	1,092
3	Discrete breathers – Advances in theory and applications. <i>Physics Reports</i> , 2008, 467, 1-116.	10.3	774
4	Localizing Energy Through Nonlinearity and Discreteness. <i>Physics Today</i> , 2004, 57, 43-49.	0.3	442
5	Observation of Breathers in Josephson Ladders. <i>Physical Review Letters</i> , 2000, 84, 745-748.	2.9	357
6	Directed Current due to Broken Time-Space Symmetry. <i>Physical Review Letters</i> , 2000, 84, 2358-2361.	2.9	333
7	Artificial flat band systems: from lattice models to experiments. <i>Advances in Physics: X</i> , 2018, 3, 1473052.	1.5	315
8	Energy Thresholds for Discrete Breathers in One-, Two-, and Three-Dimensional Lattices. <i>Physical Review Letters</i> , 1997, 78, 1207-1210.	2.9	166
9	Detangling flat bands into Fano lattices. <i>Europhysics Letters</i> , 2014, 105, 30001.	0.7	165
10	Tunable transport with broken space-time symmetries. <i>Physics Reports</i> , 2014, 538, 77-120.	10.3	124
11	Flatbands under Correlated Perturbations. <i>Physical Review Letters</i> , 2014, 113, 236403.	2.9	117
12	Perspective: Photonic flatbands. <i>APL Photonics</i> , 2018, 3, 070901.	3.0	116
13	Nonlinear Fano resonance and bistable wave transmission. <i>Physical Review E</i> , 2005, 71, 036626.	0.8	114
14	Light Scattering by a Finite Obstacle and Fano Resonances. <i>Physical Review Letters</i> , 2008, 100, 043903.	2.9	114
15	Compact localized states and flat-band generators in one dimension. <i>Physical Review B</i> , 2017, 95, .	1.1	114
16	The crossover from strong to weak chaos for nonlinear waves in disordered systems. <i>Europhysics Letters</i> , 2010, 91, 30001.	0.7	101
17	Flat band states: Disorder and nonlinearity. <i>Physical Review B</i> , 2013, 88, .	1.1	100
18	Unconventional Flatband Line States in Photonic Lieb Lattices. <i>Physical Review Letters</i> , 2018, 121, 263902.	2.9	96

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19	Existence of localized excitations in nonlinear Hamiltonian lattices. <i>Physical Review E</i> , 1995, 51, 1503-1507.	0.8	95
20	Localization of weakly disordered flat band states. <i>European Physical Journal B</i> , 2017, 90, 1.	0.6	93
21	Chiral flat bands: Existence, engineering, and stability. <i>Physical Review B</i> , 2017, 96, .	1.1	90
22	Conditions on the existence of localized excitations in nonlinear discrete systems. <i>Physical Review E</i> , 1994, 50, 3134-3142.	0.8	89
23	Manifestation of Classical Bifurcation in the Spectrum of the Integrable Quantum Dimer. <i>Physical Review Letters</i> , 1996, 76, 1607-1610.	2.9	86
24	Landau-Zener Bloch Oscillations with Perturbed Flat Bands. <i>Physical Review Letters</i> , 2016, 116, 245301.	2.9	83
25	Moving lattice kinks and pulses: An inverse method. <i>Physical Review E</i> , 1999, 59, 6105-6115.	0.8	82
26	Moving discrete breathers?. <i>Physica D: Nonlinear Phenomena</i> , 1999, 127, 61-72.	1.3	80
27	Movability of localized excitations in nonlinear discrete systems: A separatrix problem. <i>Physical Review Letters</i> , 1994, 72, 1777-1781.	2.9	75
28	Broken Symmetries and Directed Collective Energy Transport in Spatially Extended Systems. <i>Physical Review Letters</i> , 2002, 88, 184101.	2.9	72
29	Energy Carriers in the Fermi-Pasta-Ulam ² Lattice: Solitons or Phonons?. <i>Physical Review Letters</i> , 2010, 105, 054102.	2.9	72
30	Breathers on lattices with long range interaction. <i>Physical Review E</i> , 1998, 58, R4116-R4119.	0.8	70
31	Flat bands in lattices with non-Hermitian coupling. <i>Physical Review B</i> , 2017, 96, .	1.1	69
32	Rectification of current in ac-driven nonlinear systems and symmetry properties of the Boltzmann equation. <i>Europhysics Letters</i> , 2001, 54, 141-147.	0.7	66
33	Tangent bifurcation of band edge plane waves, dynamical symmetry breaking and vibrational localization. <i>Physica D: Nonlinear Phenomena</i> , 1996, 91, 223-243.	1.3	63
34	Spreading of waves in nonlinear disordered media. <i>Chemical Physics</i> , 2010, 375, 548-556.	0.9	59
35	Integrability and localized excitations in nonlinear discrete systems. <i>Physical Review E</i> , 1994, 49, 836-850.	0.8	51
36	Discrete breathers in transient processes and thermal equilibrium. <i>Physica D: Nonlinear Phenomena</i> , 2004, 198, 120-135.	1.3	49

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37	Many-body flatband localization. <i>Physical Review B</i> , 2020, 102, .	1.1	49
38	1D phonon scattering by discrete breathers. <i>Physica D: Nonlinear Phenomena</i> , 1998, 119, 73-87.	1.3	48
39	Introduction: Nonlinear localized modes. <i>Chaos</i> , 2003, 13, 586-587.	1.0	48
40	Flat-band engineering of mobility edges. <i>Physical Review B</i> , 2015, 91, .	1.1	48
41	Anderson Localization or Nonlinear Waves: A Matter of Probability. <i>Physical Review Letters</i> , 2011, 107, 240602.	2.9	44
42	Nonlinear lattice waves in heterogeneous media. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2014, 47, 493001.	0.7	44
43	DC currents in Hamiltonian systems by Lévy flights. <i>Physica D: Nonlinear Phenomena</i> , 2002, 170, 131-142.	1.3	43
44	Interaction-induced fractional Bloch and tunneling oscillations. <i>Physical Review A</i> , 2010, 81, .	1.0	43
45	Localized excitations in a discrete Klein-Gordon system. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1993, 181, 232-238.	0.9	42
46	Wave Packet Spreading with Disordered Nonlinear Discrete-Time Quantum Walks. <i>Physical Review Letters</i> , 2019, 122, 040501.	2.9	42
47	Weakly Nonergodic Dynamics in the Gross-Pitaevskii Lattice. <i>Physical Review Letters</i> , 2018, 120, 184101.	2.9	40
48	Localized excitations in two-dimensional Hamiltonian lattices. <i>Physical Review E</i> , 1994, 50, 2293-2303.	0.8	39
49	Optical ratchets with discrete cavity solitons. <i>Optics Letters</i> , 2006, 31, 1702.	1.7	39
50	Edge-localized states in quantum one-dimensional lattices. <i>Physical Review A</i> , 2009, 79, .	1.0	39
51	Universal $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle d \langle \text{mml:mi} \rangle \langle \text{mml:mo} \rangle = \langle \text{mml:mo} \rangle \langle \text{mml:mn} \rangle 3 \langle \text{mml:mi} \rangle$ flat band generator from compact localized states. <i>Physical Review B</i> , 2019, 99, .		
52	Tunnelling in the nonintegrable trimer - a step towards quantum breathers. <i>Journal of Physics Condensed Matter</i> , 1997, 9, 7039-7061.	0.7	38
53	Resonant scattering of solitons. <i>Chaos</i> , 2003, 13, 874-879.	1.0	38
54	Obtaining breathers in nonlinear Hamiltonian lattices. <i>Physical Review E</i> , 1995, 51, 3579-3587.	0.8	37

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55	Mechanism of discrete breather excitation in driven micro-mechanical cantilever arrays. Europhysics Letters, 2006, 74, 452-458.	0.7	37
56	Discrete breathers in thermal equilibrium: distributions and energy gaps. Physica D: Nonlinear Phenomena, 2005, 202, 142-154.	1.3	35
57	Frequency Combs with Weakly Lasing Exciton-Polariton Condensates. Physical Review Letters, 2015, 114, 193901.	2.9	34
58	Subdiffusion of nonlinear waves in quasiperiodic potentials. New Journal of Physics, 2012, 14, 103036.	1.2	32
59	Nonlinear localized flat-band modes with spin-orbit coupling. Physical Review B, 2016, 94, .	1.1	32
60	Acoustic Breathers in Two-Dimensional Lattices. Physical Review Letters, 1997, 79, 4838-4841.	2.9	31
61	Fano Blockade by a Bose-Einstein Condensate in an Optical Lattice. Physical Review Letters, 2007, 98, 184102.	2.9	31
62	Slow relaxation and phase space properties of a conservative system with many degrees of freedom. Physical Review E, 1994, 49, 5018-5024.	0.8	30
63	Correlated metallic two-particle bound states in quasiperiodic chains. Europhysics Letters, 2012, 98, 66002.	0.7	30
64	The Fermi-Pasta-Ulam problem: Periodic orbits, normal forms and resonance overlap criteria. Physica D: Nonlinear Phenomena, 2008, 237, 908-917.	1.3	29
65	Delocalization and spreading in a nonlinear Stark ladder. Physical Review E, 2009, 80, 036201.	0.8	29
66	Interactions destroy dynamical localization with strong and weak chaos. Europhysics Letters, 2011, 96, 30004.	0.7	29
67	The Asymmetric Active Coupler: Stable Nonlinear Supermodes and Directed Transport. Scientific Reports, 2016, 6, 33699.	1.6	29
68	Stability through asymmetry: Modulationally stable nonlinear supermodes of asymmetric non-Hermitian optical couplers. Physical Review A, 2017, 95, .	1.0	29
69	Fermionic bound states on a one-dimensional lattice. Physical Review A, 2009, 80, .	1.0	28
70	WAVE INTERACTIONS IN LOCALIZING MEDIA – A COIN WITH MANY FACES. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2011, 21, 2107-2124.	0.7	28
71	ac-driven phase-dependent directed diffusion. Physical Review E, 2000, 61, 7215-7218.	0.8	27
72	Tail resonances of Fermi-Pasta-Ulam q-breathers and their impact on the pathway to equipartition. Chaos, 2007, 17, 023102.	1.0	27

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73	Dynamical Glass and Ergodization Times in Classical Josephson Junction Chains. <i>Physical Review Letters</i> , 2019, 122, 054102.	2.9	27
74	Discrete surface solitons in two-dimensional anisotropic photonic lattices. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2007, 364, 274-276.	0.9	26
75	Breathers in one-dimensional nonlinear thermalized lattice with an energy gap. <i>Physica D: Nonlinear Phenomena</i> , 2003, 186, 20-26.	1.3	25
76	Flat-band generator in two dimensions. <i>Physical Review B</i> , 2021, 103, .	1.1	23
77	Nonlinear caging in all-bands-flat lattices. <i>Physical Review B</i> , 2021, 104, .	1.1	23
78	Rotobreather dynamics in underdamped Josephson junction ladders. <i>Journal of Physics Condensed Matter</i> , 1999, 11, 321-334.	0.7	20
79	Quantum breathers in a finite Bose-Hubbard chain: The case of two interacting bosons. <i>Physical Review B</i> , 2007, 75, .	1.1	20
80	Discrete breathers in ac-driven nanoelectromechanical shuttle arrays. <i>Applied Physics Letters</i> , 2008, 93, 222110.	1.5	19
81	q-BREATHERS IN FPU-LATTICES – SCALING AND PROPERTIES FOR LARGE SYSTEMS. <i>International Journal of Modern Physics B</i> , 2007, 21, 3925-3932.	1.0	18
82	Fano Resonances: A Discovery that Was Not Made 100 Years Ago. <i>Optics and Photonics News</i> , 2008, 19, 48.	0.4	18
83	Dynamical glass in weakly nonintegrable Klein-Gordon chains. <i>Physical Review E</i> , 2019, 100, 032217.	0.8	18
84	Probing Band Topology Using Modulational Instability. <i>Physical Review Letters</i> , 2021, 126, 073901.	2.9	17
85	Quantum caging in interacting many-body all-bands-flat lattices. <i>Physical Review B</i> , 2021, 104, .	1.1	17
86	Interacting ultracold atomic kicked rotors: loss of dynamical localization. <i>Scientific Reports</i> , 2017, 7, 41139.	1.6	15
87	Observation of quincunx-shaped and dipole-like flatband states in photonic rhombic lattices without band-touching. <i>APL Photonics</i> , 2020, 5, 016107.	3.0	14
88	Control of wave packet spreading in nonlinear finite disordered lattices. <i>Physical Review E</i> , 2009, 79, 016217.	0.8	12
89	Boundary effects on quantum breathers in a Bose-Hubbard chain. <i>Physica D: Nonlinear Phenomena</i> , 2009, 238, 581-588.	1.3	12
90	Long-time correlations in a model of structural phase transitions with infinite range interaction. <i>European Physical Journal B</i> , 1991, 82, 419-424.	0.6	11

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91	COMPUTATIONAL STUDIES OF DISCRETE BREATHERS “ FROM BASICS TO COMPETING LENGTH SCALES. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2006, 16, 1645-1669.	0.7	11
92	Non-Gibbs states on a Bose-Hubbard lattice. Physical Review A, 2019, 99, .	1.0	11
93	Deep learning of chaos classification. Machine Learning: Science and Technology, 2020, 1, 045019.	2.4	11
94	Thermal conductivity of nonlinear waves in disordered chains. Pramana - Journal of Physics, 2011, 77, 1007-1014.	0.9	10
95	Analyzing chaos in higher order disordered quartic-sextic Klein-Gordon lattices using q -statistics. Chaos, Solitons and Fractals, 2017, 104, 129-134.	2.5	9
96	Metal-insulator transition in infinitesimally weakly disordered flat bands. Physical Review B, 2021, 104, .	1.1	9
97	Decohering localized waves. Physical Review E, 2013, 88, 012901.	0.8	8
98	Make slow fast “How to speed up interacting disordered matter. Europhysics Letters, 2013, 101, 10011.	0.7	8
99	Quantum subdiffusion with two- and three-body interactions. European Physical Journal B, 2017, 90, 1.	0.6	8
100	Floquet Anderson localization of two interacting discrete time quantum walks. Physical Review B, 2020, 101, .	1.1	8
101	Heat percolation in many-body flat-band localizing systems. Physical Review B, 2021, 104, .	1.1	8
102	Lyapunov Spectrum Scaling for Classical Many-Body Dynamics Close to Integrability. Physical Review Letters, 2022, 128, 134102.	2.9	8
103	On the Correlation Effect in Peierls’s Hubbard Chains. Journal of the Physical Society of Japan, 2003, 72, 2277-2281.	0.7	7
104	Enhancement of chaotic subdiffusion in disordered ladders with synthetic gauge fields. Physical Review E, 2014, 90, 032910.	0.8	7
105	Taming two interacting particles with disorder. Physical Review B, 2019, 100, .	1.1	7
106	Many-body localization transition from flat-band fine tuning. Physical Review B, 2022, 105, .	1.1	7
107	Fano resonance in two-dimensional optical waveguide arrays with a bi-modal defect. Physics Letters, Section A: General, Atomic and Solid State Physics, 2006, 354, 210-213.	0.9	6
108	Wannier-Stark flatbands in Bravais lattices. Physical Review Research, 2021, 3, .	1.3	6

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109	Multifractality of correlated two-particle bound states in quasiperiodic chains. <i>Physical Review B</i> , 2020, 101, .	1.1	5
110	Fragile many-body ergodicity from action diffusion. <i>Physical Review E</i> , 2021, 104, 014218.	0.8	5
111	Nonlinear Lattice Waves in Random Potentials. <i>Lecture Notes in Mathematics</i> , 2015, , 1-48.	0.1	5
112	Density resolved wave packet spreading in disordered Gross-Pitaevskii lattices. <i>SciPost Physics Core</i> , 2020, 3, .	0.9	5
113	Anti- $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mi mathvariant="script"} \rangle \text{PT} \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ flatbands. <i>Physical Review A</i> , 2022, 105, .	1.0	5
114	Nonergodic lattice dynamics and high-Tc-superconductivity. <i>Physica C: Superconductivity and Its Applications</i> , 1988, 153-155, 237-238.	0.6	4
115	Mode coupling approximation in a model of structural phase transitions with infinite range interaction. <i>European Physical Journal B</i> , 1991, 85, 99-103.	0.6	4
116	Incremental expansions for the ground-state energy of the two-dimensional Hubbard model. <i>Physical Review B</i> , 1999, 59, R5273-R5276.	1.1	4
117	Resonant invisibility with finite range interacting fermions. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2012, 376, 472-475.	0.9	4
118	Nonlinear Bloch wave dynamics in photonic Aharonovâ€“Bohm cages. <i>APL Photonics</i> , 2021, 6, .	3.0	4
119	Spreading, Nonergodicity, and Selftrapping: A Puzzle of Interacting Disordered Lattice Waves. <i>Springer Proceedings in Physics</i> , 2016, , 45-57.	0.1	3
120	Fractional lattice charge transport. <i>Scientific Reports</i> , 2017, 7, 40860.	1.6	3
121	Quench dynamics in disordered two-dimensional Gross-Pitaevskii lattices. <i>Physical Review A</i> , 2020, 102, .	1.0	3
122	Transporting Cold Atoms in Optical Lattices with Ratchets: Mechanisms and Symmetries. <i>Springer Series in Optical Sciences</i> , 2010, , 181-194.	0.5	3
123	Approximating metalâ€“insulator transitions. <i>International Journal of Modern Physics B</i> , 2015, 29, 1550036.	1.0	2
124	Fano Resonances in Flat Band Networks. <i>Springer Series in Optical Sciences</i> , 2018, , 311-329.	0.5	2
125	Logarithmic expansion of many-body wave packets in random potentials. <i>Physical Review A</i> , 2022, 105, .	1.0	2
126	Discrete breathers in a nutshell. <i>Nonlinear Theory and Its Applications IEICE</i> , 2012, 3, 12-26.	0.4	1

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127	Measuring $\hat{\mu}$ -FPUT Cores and Tails. Physics, 2021, 3, 879-887.	0.5	1
128	Anomalous transport in a topological Wannier-Stark ladder. Physical Review Research, 2020, 2, .	1.3	1
129	Frequency Map Analysis of Spatiotemporal Chaos in the Nonlinear Disordered Klein-Gordon Lattice. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2022, 32, .	0.7	1
130	Thermalization dynamics of macroscopic weakly nonintegrable maps. Chaos, 2022, 32, 063113.	1.0	1
131	<title>Resonant light-light interaction in slab waveguides: angular filters and spectral hole burning</title>. , 2006, 5975, 297.		0
132	Publisher's Note: Control of wave packet spreading in nonlinear finite disordered lattices [Phys. Rev. E79, 016217 (2009)]. Physical Review E, 2009, 79, .	0.8	0
133	Anderson localization and nonlinearity in flat bands. , 2013, , .		0
134	Localized Excitations in Discrete Hamiltonian Systems. NATO ASI Series Series B: Physics, 1994, , 59-62.	0.2	0
135	Properties of Localized Excitations in 1D Discrete Systems. NATO ASI Series Series B: Physics, 1994, , 63-66.	0.2	0
136	Anderson localization of excitations in disordered Gross-Pitaevskii lattices. Physical Review A, 2021, 104, .	1.0	0