

# Sergej Flach

## List of Publications by Year in descending order

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136  
papers

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citations

66343

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g-index

138  
all docs

138  
docs citations

138  
times ranked

5871  
citing authors

#	ARTICLE	IF	CITATIONS
1	Many-body localization transition from flat-band fine tuning. Physical Review B, 2022, 105, .	3.2	7
2	Logarithmic expansion of many-body wave packets in random potentials. Physical Review A, 2022, 105, .	2.5	2
3	Anti- <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi mathvariant="script">PT</mml:mi></mml:math> flatbands. Physical Review A, 2022, 105, .	2.5	5
4	Lyapunov Spectrum Scaling for Classical Many-Body Dynamics Close to Integrability. Physical Review Letters, 2022, 128, 134102.	7.8	8
5	Frequency Map Analysis of Spatiotemporal Chaos in the Nonlinear Disordered Kleinâ€“Gordon Lattice. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2022, 32, .	1.7	1
6	Thermalization dynamics of macroscopic weakly nonintegrable maps. Chaos, 2022, 32, 063113.	2.5	1
7	Probing Band Topology Using Modulational Instability. Physical Review Letters, 2021, 126, 073901.	7.8	17
8	Wannier-Stark flatbands in Bravais lattices. Physical Review Research, 2021, 3, .	3.6	6
9	Nonlinear Bloch wave dynamics in photonic Aharonovâ€“Bohm cages. APL Photonics, 2021, 6, .	5.7	4
10	Flat-band generator in two dimensions. Physical Review B, 2021, 103, .	3.2	23
11	Fragile many-body ergodicity from action diffusion. Physical Review E, 2021, 104, 014218.	2.1	5
12	Nonlinear caging in all-bands-flat lattices. Physical Review B, 2021, 104, .	3.2	23
13	Quantum caging in interacting many-body all-bands-flat lattices. Physical Review B, 2021, 104, .	3.2	17
14	Measuring $\hat{\mu}$ -FPUT Cores and Tails. Physics, 2021, 3, 879-887.	1.4	1
15	Heat percolation in many-body flat-band localizing systems. Physical Review B, 2021, 104, .	3.2	8
16	Anderson localization of excitations in disordered Gross-Pitaevskii lattices. Physical Review A, 2021, 104, .	2.5	0
17	Metal-insulator transition in infinitesimally weakly disordered flat bands. Physical Review B, 2021, 104, .	3.2	9
18	Many-body flatband localization. Physical Review B, 2020, 102, .	3.2	49



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37	Localization of weakly disordered flat band states. European Physical Journal B, 2017, 90, 1.	1.5	93
38	Quantum subdiffusion with two- and three-body interactions. European Physical Journal B, 2017, 90, 1.	1.5	8
39	Interacting ultracold atomic kicked rotors: loss of dynamical localization. Scientific Reports, 2017, 7, 41139.	3.3	15
40	Compact localized states and flat-band generators in one dimension. Physical Review B, 2017, 95, .	3.2	114
41	Chiral flat bands: Existence, engineering, and stability. Physical Review B, 2017, 96, .	3.2	90
42	Flat bands in lattices with non-Hermitian coupling. Physical Review B, 2017, 96, .	3.2	69
43	Analyzing chaos in higher order disordered quartic-sextic Klein-Gordon lattices using q -statistics. Chaos, Solitons and Fractals, 2017, 104, 129-134.	5.1	9
44	Fractional lattice charge transport. Scientific Reports, 2017, 7, 40860.	3.3	3
45	Stability through asymmetry: Modulationally stable nonlinear supermodes of asymmetric non-Hermitian optical couplers. Physical Review A, 2017, 95, .	2.5	29
46	Landau-Zener Bloch Oscillations with Perturbed Flat Bands. Physical Review Letters, 2016, 116, 245301.	7.8	83
47	Nonlinear localized flat-band modes with spin-orbit coupling. Physical Review B, 2016, 94, .	3.2	32
48	The Asymmetric Active Coupler: Stable Nonlinear Supermodes and Directed Transport. Scientific Reports, 2016, 6, 33699.	3.3	29
49	Spreading, Nonergodicity, and Selftrapping: A Puzzle of Interacting Disordered Lattice Waves. Springer Proceedings in Physics, 2016, , 45-57.	0.2	3
50	Approximating metal-insulator transitions. International Journal of Modern Physics B, 2015, 29, 1550036.	2.0	2
51	Frequency Combs with Weakly Lasing Exciton-Polariton Condensates. Physical Review Letters, 2015, 114, 193901.	7.8	34
52	Flat-band engineering of mobility edges. Physical Review B, 2015, 91, .	3.2	48
53	Nonlinear Lattice Waves in Random Potentials. Lecture Notes in Mathematics, 2015, , 1-48.	0.2	5
54	Nonlinear lattice waves in heterogeneous media. Journal of Physics A: Mathematical and Theoretical, 2014, 47, 493001.	2.1	44

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55	Flatbands under Correlated Perturbations. Physical Review Letters, 2014, 113, 236403.	7.8	117
56	Detangling flat bands into Fano lattices. Europhysics Letters, 2014, 105, 30001.	2.0	165
57	Tunable transport with broken space-time symmetries. Physics Reports, 2014, 538, 77-120.	25.6	124
58	Enhancement of chaotic subdiffusion in disordered ladders with synthetic gauge fields. Physical Review E, 2014, 90, 032910.	2.1	7
59	Anderson localization and nonlinearity in flat bands. , 2013, , .		0
60	Flat band states: Disorder and nonlinearity. Physical Review B, 2013, 88, .	3.2	100
61	Decohering localized waves. Physical Review E, 2013, 88, 012901.	2.1	8
62	Make slow fast –How to speed up interacting disordered matter. Europhysics Letters, 2013, 101, 10011.	2.0	8
63	Discrete breathers in a nutshell. Nonlinear Theory and Its Applications IEICE, 2012, 3, 12-26.	0.6	1
64	Subdiffusion of nonlinear waves in quasiperiodic potentials. New Journal of Physics, 2012, 14, 103036.	2.9	32
65	Correlated metallic two-particle bound states in quasiperiodic chains. Europhysics Letters, 2012, 98, 66002.	2.0	30
66	Resonant invisibility with finite range interacting fermions. Physics Letters, Section A: General, Atomic and Solid State Physics, 2012, 376, 472-475.	2.1	4
67	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.	1.7	28
68	Thermal conductivity of nonlinear waves in disordered chains. Pramana - Journal of Physics, 2011, 77, 1007-1014.	1.8	10
69	Interactions destroy dynamical localization with strong and weak chaos. Europhysics Letters, 2011, 96, 30004.	2.0	29
70	Anderson Localization or Nonlinear Waves: A Matter of Probability. Physical Review Letters, 2011, 107, 240602.	7.8	44
71	Fano resonances in nanoscale structures. Reviews of Modern Physics, 2010, 82, 2257-2298.	45.6	2,434
72	Spreading of waves in nonlinear disordered media. Chemical Physics, 2010, 375, 548-556.	1.9	59

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73	Interaction-induced fractional Bloch and tunneling oscillations. <i>Physical Review A</i> , 2010, 81, .	2.5	43
74	Energy Carriers in the Fermi-Pasta-Ulam <sup>2</sup> Lattice: Solitons or Phonons?. <i>Physical Review Letters</i> , 2010, 105, 054102.	7.8	72
75	The crossover from strong to weak chaos for nonlinear waves in disordered systems. <i>Europhysics Letters</i> , 2010, 91, 30001.	2.0	101
76	Transporting Cold Atoms in Optical Lattices with Ratchets: Mechanisms and Symmetries. <i>Springer Series in Optical Sciences</i> , 2010, , 181-194.	0.7	3
77	Publisher's Note: Control of wave packet spreading in nonlinear finite disordered lattices [Phys. Rev. E79, 016217 (2009)]. <i>Physical Review E</i> , 2009, 79, .	2.1	0
78	Control of wave packet spreading in nonlinear finite disordered lattices. <i>Physical Review E</i> , 2009, 79, 016217.	2.1	12
79	Edge-localized states in quantum one-dimensional lattices. <i>Physical Review A</i> , 2009, 79, .	2.5	39
80	Delocalization and spreading in a nonlinear Stark ladder. <i>Physical Review E</i> , 2009, 80, 036201.	2.1	29
81	Boundary effects on quantum -breathers in a Bose-Hubbard chain. <i>Physica D: Nonlinear Phenomena</i> , 2009, 238, 581-588.	2.8	12
82	Fermionic bound states on a one-dimensional lattice. <i>Physical Review A</i> , 2009, 80, .	2.5	28
83	Discrete breathers - Advances in theory and applications. <i>Physics Reports</i> , 2008, 467, 1-116.	25.6	774
84	The Fermi-Pasta-Ulam problem: Periodic orbits, normal forms and resonance overlap criteria. <i>Physica D: Nonlinear Phenomena</i> , 2008, 237, 908-917.	2.8	29
85	Light Scattering by a Finite Obstacle and Fano Resonances. <i>Physical Review Letters</i> , 2008, 100, 043903.	7.8	114
86	Fano Resonances: A Discovery that Was Not Made 100 Years Ago. <i>Optics and Photonics News</i> , 2008, 19, 48.	0.5	18
87	Discrete breathers in ac-driven nanoelectromechanical shuttle arrays. <i>Applied Physics Letters</i> , 2008, 93, 222110.	3.3	19
88	q-BREATHERS IN FPU-LATTICES - SCALING AND PROPERTIES FOR LARGE SYSTEMS. <i>International Journal of Modern Physics B</i> , 2007, 21, 3925-3932.	2.0	18
89	Fano Blockade by a Bose-Einstein Condensate in an Optical Lattice. <i>Physical Review Letters</i> , 2007, 98, 184102.	7.8	31
90	Quantum-breathers in a finite Bose-Hubbard chain: The case of two interacting bosons. <i>Physical Review B</i> , 2007, 75, .	3.2	20

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91	Tail resonances of Fermi-Pasta-Ulam q-breathers and their impact on the pathway to equipartition. Chaos, 2007, 17, 023102.	2.5	27
92	Discrete surface solitons in two-dimensional anisotropic photonic lattices. Physics Letters, Section A: General, Atomic and Solid State Physics, 2007, 364, 274-276.	2.1	26
93	Optical ratchets with discrete cavity solitons. Optics Letters, 2006, 31, 1702.	3.3	39
94	<title>Resonant light-light interaction in slab waveguides: angular filters and spectral hole burning</title>., 2006, 5975, 297.		0
95	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.	2.1	6
96	Mechanism of discrete breather excitation in driven micro-mechanical cantilever arrays. Europhysics Letters, 2006, 74, 452-458.	2.0	37
97	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.	1.7	11
98	Discrete breathers in thermal equilibrium: distributions and energy gaps. Physica D: Nonlinear Phenomena, 2005, 202, 142-154.	2.8	35
99	Nonlinear Fano resonance and bistable wave transmission. Physical Review E, 2005, 71, 036626.	2.1	114
100	Discrete breathers in transient processes and thermal equilibrium. Physica D: Nonlinear Phenomena, 2004, 198, 120-135.	2.8	49
101	Localizing Energy Through Nonlinearity and Discreteness. Physics Today, 2004, 57, 43-49.	0.3	442
102	Resonant scattering of solitons. Chaos, 2003, 13, 874-879.	2.5	38
103	Breathers in one-dimensional nonlinear thermalized lattice with an energy gap. Physica D: Nonlinear Phenomena, 2003, 186, 20-26.	2.8	25
104	Introduction: Nonlinear localized modes. Chaos, 2003, 13, 586-587.	2.5	48
105	On the Correlation Effect in Peierls's Hubbard Chains. Journal of the Physical Society of Japan, 2003, 72, 2277-2281.	1.6	7
106	Broken Symmetries and Directed Collective Energy Transport in Spatially Extended Systems. Physical Review Letters, 2002, 88, 184101.	7.8	72
107	DC currents in Hamiltonian systems by Lévy flights. Physica D: Nonlinear Phenomena, 2002, 170, 131-142.	2.8	43
108	Rectification of current in ac-driven nonlinear systems and symmetry properties of the Boltzmann equation. Europhysics Letters, 2001, 54, 141-147.	2.0	66

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109	ac-driven phase-dependent directed diffusion. Physical Review E, 2000, 61, 7215-7218.	2.1	27
110	Observation of Breathers in Josephson Ladders. Physical Review Letters, 2000, 84, 745-748.	7.8	357
111	Directed Current due to Broken Time-Space Symmetry. Physical Review Letters, 2000, 84, 2358-2361.	7.8	333
112	Rotobreather dynamics in underdamped Josephson junction ladders. Journal of Physics Condensed Matter, 1999, 11, 321-334.	1.8	20
113	Moving lattice kinks and pulses: An inverse method. Physical Review E, 1999, 59, 6105-6115.	2.1	82
114	Incremental expansions for the ground-state energy of the two-dimensional Hubbard model. Physical Review B, 1999, 59, R5273-R5276.	3.2	4
115	Moving discrete breathers?. Physica D: Nonlinear Phenomena, 1999, 127, 61-72.	2.8	80
116	1D phonon scattering by discrete breathers. Physica D: Nonlinear Phenomena, 1998, 119, 73-87.	2.8	48
117	Discrete breathers. Physics Reports, 1998, 295, 181-264.	25.6	1,092
118	Breathers on lattices with long range interaction. Physical Review E, 1998, 58, R4116-R4119.	2.1	70
119	Acoustic Breathers in Two-Dimensional Lattices. Physical Review Letters, 1997, 79, 4838-4841.	7.8	31
120	Tunnelling in the nonintegrable trimer - a step towards quantum breathers. Journal of Physics Condensed Matter, 1997, 9, 7039-7061.	1.8	38
121	Energy Thresholds for Discrete Breathers in One-, Two-, and Three-Dimensional Lattices. Physical Review Letters, 1997, 78, 1207-1210.	7.8	166
122	Tangent bifurcation of band edge plane waves, dynamical symmetry breaking and vibrational localization. Physica D: Nonlinear Phenomena, 1996, 91, 223-243.	2.8	63
123	Manifestation of Classical Bifurcation in the Spectrum of the Integrable Quantum Dimer. Physical Review Letters, 1996, 76, 1607-1610.	7.8	86
124	Obtaining breathers in nonlinear Hamiltonian lattices. Physical Review E, 1995, 51, 3579-3587.	2.1	37
125	Existence of localized excitations in nonlinear Hamiltonian lattices. Physical Review E, 1995, 51, 1503-1507.	2.1	95
126	Localized excitations in two-dimensional Hamiltonian lattices. Physical Review E, 1994, 50, 2293-2303.	2.1	39



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127	Integrability and localized excitations in nonlinear discrete systems. Physical Review E, 1994, 49, 836-850.	2.1	51
128	Conditions on the existence of localized excitations in nonlinear discrete systems. Physical Review E, 1994, 50, 3134-3142.	2.1	89
129	Movability of localized excitations in nonlinear discrete systems: A separatrix problem. Physical Review Letters, 1994, 72, 1777-1781.	7.8	75
130	Slow relaxation and phase space properties of a conservative system with many degrees of freedom. Physical Review E, 1994, 49, 5018-5024.	2.1	30
131	Localized Excitations in Discrete Hamiltonian Systems. NATO ASI Series Series B: Physics, 1994, , 59-62.	0.2	0
132	Properties of Localized Excitations in 1D Discrete Systems. NATO ASI Series Series B: Physics, 1994, , 63-66.	0.2	0
133	Localized excitations in a discrete Klein-Gordon system. Physics Letters, Section A: General, Atomic and Solid State Physics, 1993, 181, 232-238.	2.1	42
134	Long-time correlations in a model of structural phase transitions with infinite range interaction. European Physical Journal B, 1991, 82, 419-424.	1.5	11
135	Mode coupling approximation in a model of structural phase transitions with infinite range interaction. European Physical Journal B, 1991, 85, 99-103.	1.5	4
136	Nonergodic lattice dynamics and high-Tc-superconductivity. Physica C: Superconductivity and Its Applications, 1988, 153-155, 237-238.	1.2	4