Stefan Skupin

List of Publications by Year
in descending order

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149 papers	4,885 citations	109137 35 h-index	95083 68 g-index
151 all docs	151 docs citations	151 times ranked	2417 citing authors

#	Article	IF	Citations
1	Ultrashort filaments of light in weakly ionized, optically transparent media. Reports on Progress in Physics, 2007, 70, 1633-1713.	8.1	939
2	Multiple Filamentation of Terawatt Laser Pulses in Air. Physical Review Letters, 2004, 92, 225002.	2.9	178
3	Stable rotating dipole solitons in nonlocal optical media. Optics Letters, 2006, 31, 1100.	1.7	172
4	Ultrafast Spatiotemporal Dynamics of Terahertz Generation by Ionizing Two-Color Femtosecond Pulses in Gases. Physical Review Letters, 2010, 105, 053903.	2.9	168
5	Tailoring terahertz radiation by controlling tunnel photoionization events in gases. New Journal of Physics, 2011, 13, 123029.	1.2	168
6	Stability of two-dimensional spatial solitons in nonlocal nonlinear media. Physical Review E, 2006, 73, 066603.	0.8	167
7	Nonlocal Stabilization of Nonlinear Beams in a Self-Focusing Atomic Vapor. Physical Review Letters, 2007, 98, 263902.	2.9	152
8	Self-compression by femtosecond pulse filamentation: Experiments versus numerical simulations. Physical Review E, 2006, 74, 056604.	0.8	144
9	3D Numerical Simulations of THz Generation by Two-Color Laser Filaments. Physical Review Letters, 2013, 110, 073901.	2.9	125
10	Rydberg-Induced Solitons: Three-Dimensional Self-Trapping of Matter Waves. Physical Review Letters, 2011, 106, 170401.	2.9	112
11	Filamentation of femtosecond light pulses in the air: Turbulent cells versus long-range clusters. Physical Review E, 2004, 70, 046602.	0.8	102
12	Spatiotemporal Rogue Events in Optical Multiple Filamentation. Physical Review Letters, 2013, 111, 243903.	2.9	93
13	Enhancing precision in fs-laser material processing by simultaneous spatial and temporal focusing. Light: Science and Applications, 2014, 3, e169-e169.	7.7	91
14	Generation of terahertz radiation from ionizing two-color laser pulses in Ar filled metallic hollow waveguides. Optics Express, 2010, 18, 9658.	1.7	90
15	Boosting Terahertz Generation in Laser-Field Ionized Gases Using a Sawtooth Wave Shape. Physical Review Letters, 2015, 114, 183901.	2.9	87
16	Multifilamentation transmission through fog. Physical Review E, 2005, 72, 026611.	0.8	85
17	Supercontinuum emission and enhanced self-guiding of infrared femtosecond filaments sustained by third-harmonic generation in air. Physical Review E, 2005, 71, 016602.	0.8	80
18	Role of the carrier-envelope phase in laser filamentation. Applied Physics B: Lasers and Optics, 2011, 103, 563-570.	1.1	78

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19	Improved laser glass cutting by spatio-temporal control of energy deposition using bursts of femtosecond pulses. Optics Express, 2017, 25, 33271.	1.7	77
20	Few-Cycle Light Bullets Created by Femtosecond Filaments. Physical Review Letters, 2008, 100, 113902.	2.9	73
21	Self-guiding of femtosecond light pulses in condensed media: Plasma generation versus chromatic dispersion. Physica D: Nonlinear Phenomena, 2006, 220, 14-30.	1.3	69
22	Chirp-induced dynamics of femtosecond filaments in air. Optics Letters, 2005, 30, 917.	1.7	68
23	Interaction of Femtosecond Light Filaments with Obscurants in Aerosols. Physical Review Letters, 2004, 93, 023901.	2.9	66
24	Self-channeling of ultrashort laser pulses in materials with anomalous dispersion. Physical Review E, 2005, 71, 065601.	0.8	61
25	Direct Observation of the Injection Dynamics of a Laser Wakefield Accelerator Using Few-Femtosecond Shadowgraphy. Physical Review Letters, 2015, 115, 055002.	2.9	61
26	Self-Organization of Light in Optical Media with Competing Nonlinearities. Physical Review Letters, 2016, 116, 163902.	2.9	58
27	Saturation of the nonlinear refractive index in atomic gases. Physical Review A, 2013, 87, .	1.0	53
28	Spectral dynamics of THz pulses generated by two-color laser filaments in air: the role of Kerr nonlinearities and pump wavelength. Optics Express, 2017, 25, 4720.	1.7	46
29	Creating Complex Optical Longitudinal Polarization Structures. Physical Review Letters, 2018, 120, 163903.	2.9	45
30	Temporal Self-Restoration of Compressed Optical Filaments. Physical Review Letters, 2008, 101, 213901.	2.9	43
31	Effect of electron heating on self-induced transparency in relativistic-intensity laser-plasma interactions. Physical Review E, 2012, 86, 056404.	0.8	43
32	Saturation of the filament density of ultrashort intense laser pulses in air. Applied Physics B: Lasers and Optics, 2010, 100, 77-84.	1.1	40
33	Broadband terahertz radiation from two-color mid- and far-infrared laser filaments in air. Physical Review A, 2018, 97, .	1.0	39
34	Terahertz spectroscopy from air plasmas created by two-color femtosecond laser pulses: The ALTESSE project. Europhysics Letters, 2019, 126, 24001.	0.7	39
35	Wavelength scaling of terahertz pulse energies delivered by two-color air plasmas. Optics Letters, 2019, 44, 1488.	1.7	38
36	Multifilamentation of powerful optical pulses in silica. Physical Review A, 2010, 81, .	1.0	32

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37	Terahertz pulse generation by two-color laser fields with circular polarization. New Journal of Physics, 2020, 22, 103038.	1.2	32
38	UVâ€“Supercontinuum generated by femtosecond pulse filamentation in air: Meter-range experiments versus numerical simulations. Applied Physics B: Lasers and Optics, 2006, 82, 341-345.	1.1	29
39	Optical femtosecond filaments in condensed media. Physical Review A, 2006, 74, .	1.0	29
40	Supercontinuum generation of ultrashort laser pulses in air at different central wavelengths. Optics Communications, 2007, 280, 173-182.	1.0	28
41	Rotating soliton solutions in nonlocal nonlinear media. Optics Express, 2008, 16, 9118.	1.7	28
42	Femtosecond laser pulse train interaction with dielectric materials. Applied Physics Letters, 2015, 107, .	1.5	28
43	THz field engineering in two-color femtosecond filaments using chirped and delayed laser pulses. New Journal of Physics, 2018, 20, 033026.	1.2	28
44	Self-recompression of laser filaments exiting a gas cell. Physical Review A, 2009, 79, .	1.0	27
45	Azimuthons in weakly nonlinear waveguides of different symmetries. Optics Express, 2010, 18, 27846.	1.7	27
46	Picosecond laser filamentation in air. New Journal of Physics, 2016, 18, 093005.	1.2	26
47	Theory of terahertz emission from femtosecond-laser-induced microplasmas. Physical Review E, 2016, 94, 063202.	0.8	26
48	Spiraling solitons and multipole localized modes in nonlocal nonlinear media. Physica B: Condensed Matter, 2007, 394, 351-356.	1.3	25
49	Filamentation of ultrashort laser pulses in silica glass and KDP crystals: A comparative study. Physical Review A, 2014, 90, .	1.0	25
50	Coulomb explosion of uniformly charged spheroids. Physical Review E, 2011, 84, 056404.	0.8	24
51	Directionality of terahertz emission from photoinduced gas plasmas. Optics Letters, 2011, 36, 3166.	1.7	23
52	Tracking azimuthons in nonlocal nonlinear media. Optical and Quantum Electronics, 2009, 41, 337-348.	1.5	21
53	Rotating three-dimensional solitons in Bose-Einstein condensates with gravitylike attractive nonlocal interaction. Physical Review A, 2010, 81, .	1.0	21
54	High-quality ion beams by irradiating a nano-structured target with a petawatt laser pulse. New Journal of Physics, 2009, 11, 093035.	1.2	20

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55	Energy dispersion in radiation pressure accelerated ion beams. New Journal of Physics, 2011, 13, 123003.	1.2	20
56	Sub-2fs pulses generated by self-channeling in the deep ultraviolet. Optics Letters, 2008, 33, 750.	1.7	19
57	Boundary conditions for arbitrarily shaped and tightly focused laser pulses in electromagnetic codes. Journal of Computational Physics, 2016, 321, 1110-1119.	1.9	19
58	Self-pinching of pulsed laser beams during filamentary propagation. Optics Express, 2009, 17, 16429.	1.7	18
59	Intensity modulated terahertz vortex wave generation in air plasma by two-color femtosecond laser pulses. Optics Letters, 2019, 44, 3889.	1.7	18
60	Collapse in the nonlocal nonlinear SchrÃ¶dinger equation. Nonlinearity, 2011, 24, 1987-2001.	0.6	17
61	Quasiperiodic oscillations and homoclinic orbits in the nonlinear nonlocal SchrÃ¶dinger equation. New Journal of Physics, 2013, 15, 083055.	1.2	17
62	An intuitive approach to structuring the three electric field components of light. New Journal of Physics, 2019, 21, 013032.	1.2	17
63	Cascaded self-compression of femtosecond pulses in filaments. New Journal of Physics, 2010, 12, 093046.	1.2	15
64	Terahertz emission from laser-driven gas plasmas: a plasmonic point of view. Optica, 2018, 5, 1617.	4.8	15
65	Plasma induced pulse breaking in filamentary self-compression. Laser Physics, 2010, 20, 1107-1113.	0.6	14
66	Spectral self-action of THz emission from ionizing two-color laser pulses in gases. New Journal of Physics, 2015, 17, 023060.	1.2	14
67	Intense pulses in air:â€ƒbreakup of rotational symmetry. Optics Letters, 2002, 27, 1812.	1.7	13
68	Stability of weakly nonlinear localized states in attractive potentials. Physical Review E, 2004, 70, 016614.	0.8	13
69	Self-focusing versus stimulated Brillouin scattering of laser pulses in fused silica. New Journal of Physics, 2010, 12, 103049.	1.2	13
70	Stability of solitary waves in random nonlocal nonlinear media. Physical Review A, 2012, 85, .	1.0	13
71	Broadband terahertz emission from two-color femtosecond-laser-induced microplasmas. Physical Review A, 2017, 96, .	1.0	13
72	Shaping convex edges in borosilicate glass by single pass perforation with an Airy beam. Optics Letters, 2021, 46, 2529.	1.7	13

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73	Ultrashort Pulse Laser Cutting of Glass by Controlled Fracture Propagation. Journal of Laser Micro Nanoengineering, 2016, 11, 66-70.	0.4	13
74	All-optical attoclock for imaging tunnelling wavepackets. Nature Physics, 2022, 18, 417-422.	6.5	12
75	Modeling ultrashort filaments of light. Discrete and Continuous Dynamical Systems, 2009, 23, 1099-1139.	0.5	11
76	Filamentary pulse self-compression: The impact of the cell windows. Physical Review A, 2011, 83, .	1.0	10
77	Effects of burst mode on transparent materials processing. , 2015, , .		10
78	Controlling the stimulated Brillouin scattering of self-focusing nanosecond laser pulses in silica glasses. Physical Review A, 2011, 83, .	1.0	9
79	GPU accelerated fully space and time resolved numerical simulations of self-focusing laser beams in SBS-active media. Journal of Computational Physics, 2013, 235, 606-625.	1.9	9
80	Modeling ultrafast shadowgraphy in laser-plasma interaction experiments. Plasma Physics and Controlled Fusion, 2016, 58, 065004.	0.9	9
81	Simulation of femtosecond pulse propagation in air. Optical and Quantum Electronics, 2003, 35, 573-582.	1.5	7
82	Ultrashort filaments of light in weakly ionized, optically transparent media. Reports on Progress in Physics, 2008, 71, 109801.	8.1	7
83	Pattern formation in the nonlinear SchrÃ¶dinger equation with competing nonlocal nonlinearities. Optical Data Processing and Storage, 2017, 3, .	3.3	7
84	Visualization of relativistic laser pulses in underdense plasma. Physical Review Accelerators and Beams, 2020, 23, .	0.6	6
85	Spatial Break-up of Femtosecond Laser Pulses in the Atmosphere. Physica Scripta, 2004, T107, 135.	1.2	5
86	Maxwell-consistent, symmetry- and energy-preserving solutions for ultrashort-laser-pulse propagation beyond the paraxial approximation. Physical Review A, 2018, 98, .	1.0	5
87	High-quality ion beams from nanometric double-layer targets and their application to hadron-therapy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 620, 63-66.	0.7	4
88	Effect of nonlinear dispersion on pulse self-compression in a defocusing noble gas. Physica D: Nonlinear Phenomena, 2011, 240, 963-970.	1.3	4
89	Terahertz pulse generation by multi-color laser fields with linear versus circular polarization. Optics Letters, 2021, 46, 5906.	1.7	4
90	Air-photonics terahertz platform with versatile micro-controller based interface and data acquisition. Review of Scientific Instruments, 2022, 93, 033004.	0.6	4

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91	Compression of ultrashort UV pulses in a self-defocusing gas. Physical Review A, 2010, 81, .	1.0	2
92	Tracking phase singularities in optical fields. , 2012, , .		2
93	Ultrabroadband spectroscopy for security applications. , 2015, , .		2
94	Simultaneous spatial and temporal focusing: a route towards confined nonlinear materials processing. , 2016, , .		2
95	Validity of the unidirectional propagation model: application to laser-driven terahertz emission. Journal of Physics Communications, 2017, 1, 055009.	0.5	2
96	Phase-matched high-order harmonic generation in pre-ionized noble gases. Scientific Reports, 2022, 12, 7715.	1.6	2
97	THz generation by ionizing two-color laser pulses in gases. , 2011, , .		1
98	Femtosecond laser cutting of glass by controlled fracture propagation. , 2015, , .		1
99	Nonlocal solitons. , 2011, , .		1
100	Vortex terahertz wave generation in air by femtosecond optical vortex pulses. , 2019, , .		1
101	Using airy beams for combined glass cutting and edge shaping. , 2022, , .		1
102	Azimuthal instabilities of intense femtosecond pulses propagating in air. , 0, , .		0
103	Collapse suppression by a positive index profile. , 2003, , .		0
104	Super-broadband continuum at UV-visible wavelengths generated by ultrashort laser-pulses in air. , 2005, , .		0
105	Propagation of TW laser pulses in air and applications to lightning control. , 0, , .		0
106	On the propagation of high intense laser pulses in media with normal and anomalous dispersion. , 0, , .		0
107	Stable rotating dipole solitons in nonlocal media. , 2006, , .		0
108	Spatio-temporally induced pulse self-compression in a white-light filament. , 2007, , .		0

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109	Supercontinuum generation of femtosecond filaments at different laser wavelengths in air. , 2007, , .		0
110	Enhanced stability of nonlocal solitons in saturable focusing media. , 2007, , .		0
111	Spatio-temporal structure of sub-10-fs pulses generated in a self-compressed white-light filament. , 2007, , .		0
112	Self-healing of pulse compression in gas-cell-based filamentation experiments. , 2009, , .		0
113	Nonlinear photon *z*-pinching in filamentary self-compression. , 2009, , .		0
114	Three-dimensional self-focusing of laser pulses in SBS-active media. , 2010, , .		0
115	Rotating three-dimensional solitons. , 2010, , .		0
116	Stimulated Brillouin scattering in Kerr filamentation regimes. , 2011, , .		0
117	Influence of modulation and shape of laser pump pulses on stimulated Brillouin scattering in self-focusing regime in silica. , 2011, , .		0
118	Direction of THz emission by ionizing two-color pulses. , 2011, , .		0
119	Carrier-envelope phase in pulse compression mediated by filamentation. , 2011, , .		0
120	The spectrum of THz radiation from plasma produced by strong multicolor optical fields. , 2011, , .		0
121	Quasi-periodic shape-transformations of nonlocal higher-order solitons. , 2013, , .		0
122	THz generation by filamentation of two-color femtosecond laser pulses. , 2013, , .		0
123	Rogue waves in the beam profiles of multifilaments. , 2013, , .		0
124	Modeling the nonlinear refractive index in atomic gases. , 2013, , .		0
125	Picosecond laser filamentation in air. , 2015, , .		0
126	Modelling Laser Matter Interaction with Tightly Focused Laser Pulses in Electromagnetic Codes. , 2016, , .		0

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127	Towards compact efficient fs-laser-induced THz sources from microplasmas. , 2017, , .		0
128	Impact of the pump wavelength in THz emissions by two-color femtosecond laser filaments in air. , 2017, , .		0
129	Suitability of the unidirectional approach for describing laser-driven terahertz emission. , 2017, , .		0
130	Resonant Effects in Terahertz Generation with Laser-Induced Gas Plasmas. EPJ Web of Conferences, 2018, 195, 03011.	0.1	0
131	Plasmonic Resonances Affecting Terahertz Generation in Laser-Induced Gas-Plasmas. , 2018, , .		0
132	Terahertz Wave Generation in Air by Femtosecond Optical Vortex Pulses. , 2019, , .		0
133	Structuring the Three Electric Field Components of Light. , 2019, , .		0
134	Terahertz pulse generation by multi-color laser fields with linear vs. circular polarization. , 2021, , .		0
135	Airy beam enables single pass curved in-volume modifications and cutting of borosilicate glass. , 2021, , .		0
136	Filamentation of femtosecond pulses in air: Turbulent short-scale cells versus long-range clusters. , 2004, , .		0
137	Nonlinearly induced single mode behavior in multi-mode fibers. , 2004, , .		0
138	Spatio-temporal dynamics of ultrashort laser pulses in materials with anomalous dispersion. , 2005, , .		0
139	UV-supercontinuum generation and femtosecond filamentation in air. , 2005, , .		0
140	Nonlinear Photon z-Pinching in Filamentary Self-Compression. , 2009, , .		0
141	Double self-compression of femtosecond pulses in filaments. , 2010, , .		0
142	Azimuthons in weakly nonlinear waveguides. , 2010, , .		0
143	Radiative decay of bright solitons in nonlocal nonlinear media with random noise. , 2012, , .		0
144	THz Emissions from Air-Plasmas Created by Mid-and Far-Infrared Two-Color Femtosecond Pulses. , 2018, , .		0

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145	THz emissions by two-color filaments in air: Revisiting the wavelength scaling. , 2019, , .		0
146	Shaping the longitudinal electric field component of light. , 2019, , .		0
147	Wavelength Scaling of THz Emissions by Two-Color Filaments in Air. , 2019, , .		0
148	Air Laser-based TErahertz SpectroScopy of Explosives (ALTESSE) (Conference Presentation). , 2019, , .		0
149	Combining glass cutting and edge shaping by using optical Airy beams. , 2021, , .		0