Emil Wolf

List of Publications by Year
in descending order

138 papers	9,151 citations	50276 46 h-index	39675 94 g-index
138 all docs	138 docs citations	138 times ranked	2024 citing authors

#	Article	IF	Citations
1	Three-dimensional structure determination of semi-transparent objects from holographic data. Optics Communications, 1969, 1, 153-156.	2.1	1,230
2	Unified theory of coherence and polarization of random electromagnetic beams. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 312, 263-267.	2.1	769
3	New theory of partial coherence in the spaceâ€“frequency domain Part I: spectra and cross spectra of steady-state sources. Journal of the Optical Society of America, 1982, 72, 343.	1.2	553
4	Invariance of the Spectrum of Light on Propagation. Physical Review Letters, 1986, 56, 1370-1372.	7.8	360
5	Focal shifts in diffracted converging spherical waves. Optics Communications, 1981, 39, 211-215.	2.1	329
6	Coherence and radiometry*. Journal of the Optical Society of America, 1978, 68, 6.	1.2	294
7	Non-cosmological redshifts of spectral lines. Nature, 1987, 326, 363-365.	27.8	252
8	Changes in the state of polarization of a random electromagnetic beam on propagation. Optics Communications, 2005, 246, 35-43.	2.1	234
9	Generalized Stokes parameters of random electromagnetic beams. Optics Letters, 2005, 30, 198.	3.3	222
10	Correlation-induced spectral changes. Reports on Progress in Physics, 1996, 59, 771-818.	20.1	211
11	The far-zone behavior of the degree of polarization of electromagnetic beams propagating through atmospheric turbulence. Optics Communications, 2004, 233, 225-230.	2.1	198
12	Three-dimensional intensity distribution near the focus in systems of different Fresnel numbers. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1984, 1, 801.	1.5	184
13	Correlation-induced changes in the degree of polarization, the degree of coherence, and the spectrum of random electromagnetic beams on propagation. Optics Letters, 2003, 28, 1078.	3.3	183
14	Focal shift in focused truncated gaussian beams. Optics Communications, 1982, 42, 151-156.	2.1	161
15	Conditions for the validity of the Debye integral representation of focused fields. Optics Communications, 1981, 39, 205-210.	2.1	155
16	Polarization changes in partially coherent electromagnetic beams propagating through turbulent atmosphere. Waves in Random and Complex Media, 2004, 14, 513-523.	1.5	133
17	Red shifts and blue shifts of spectral lines emitted by two correlated sources. Physical Review Letters, 1987, 58, 2646-2648.	7.8	124
18	Beam conditions for radiation generated by an electromagnetic Gaussian Schell-model source. Optics Letters, 2004, 29, 1173.	3.3	122

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19	A method of generating electromagnetic Gaussian Schell-model beams. Journal of Optics, 2005, 7, 232-237.	1.5	121
20	Change in the polarization of partially coherent electromagnetic beams propagating through the turbulent atmosphere. Journal of Modern Optics, 2005, 52, 1611-1618.	1.3	116
21	Propagation-induced polarization changes in partially coherent optical beams. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2000, 17, 2019.	1.5	114
22	Redshifts and blueshifts of spectral lines caused by source correlations. Optics Communications, 1987, 62, 12-16.	2.1	111
23	Spectral changes produced by static scattering on a system of particles. Optics Letters, 1998, 23, 1340.	3.3	104
24	Analyticity of the angular spectrum amplitude of scattered fields and some of its consequences. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1985, 2, 886.	1.5	98
25	Application of correlation-induced spectral changes to inverse scattering. Optics Letters, 2007, 32, 3483.	3.3	92
26	Determination of the Amplitude and the Phase of Scattered Fields by Holography*. Journal of the Optical Society of America, 1970, 60, 18.	1.2	88
27	Some new aspects of Young's interference experiment. Physics Letters, Section A: General, Atomic and Solid State Physics, 1991, 157, 6-10.	2.1	79
28	Changes in the spectrum, in the spectral degree of polarization, and in the spectral degree of coherence of a partially coherent beam propagating through a gradient-index fiber. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2006, 23, 940.	1.5	79
29	Changes in the spectrum of a partially coherent light beam propagating in free space. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1988, 5, 1118.	1.5	78
30	Spectral changes produced in Young's interference experiment. Optics Communications, 1991, 81, 150-154.	2.1	78
31	Coherence and polarization of electromagnetic beams modulated by random phase screens and their changes on propagation in free space. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2004, 21, 1907.	1.5	77
32	Correlation-induced Doppler-type frequency shifts of spectral lines. Physical Review Letters, 1989, 63, 2220-2223.	7.8	75
33	Inverse problems with quasi-homogeneous random media. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1994, 11, 1128.	1.5	75
34	Invisible Bodies and Uniqueness of the Inverse Scattering Problem. Journal of Modern Optics, 1993, 40, 785-792.	1.3	74
35	Determination of the electric cross-spectral density matrix of a random electromagnetic beam. Optics Communications, 2003, 226, 57-60.	2.1	69
36	Nonpropagating string excitations. American Journal of Physics, 1998, 66, 121-123.	0.7	64

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37	Correlations between intensity fluctuations in stochastic electromagnetic beams of any state of coherence and polarization. Optics Communications, 2007, 272, 289-292.	2.1	64
38	Effects of coherence on the degree of polarization in a Young interference pattern. Optics Letters, 2006, 31, 688.	3.3	62
39	Frequency shifts of spectral lines generated by scattering from space-time fluctuations. Physical Review A, 1989, 40, 588-598.	2.5	59
40	Invariance and noninvariance of the spectra of stochastic electromagnetic beams on propogation. Optics Letters, 2006, 31, 2097.	3.3	58
41	A law of interference of electromagnetic beams of any state of coherence and polarization and the Fresnelâ€“Arago interference laws. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2004, 21, 2414.	1.5	54
42	Doppler-like frequency shifts generated by dynamic scattering. Physics Letters, Section A: General, Atomic and Solid State Physics, 1990, 146, 167-171.	2.1	52
43	Intensity fluctuations and the degree of cross-polarization in stochastic electromagnetic beams. Journal of Optics, 2008, 10, 055001.	1.5	52
44	Coherence and polarization properties of far fields generated by quasi-homogeneous planar electromagnetic sources. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2005, 22, 2547.	1.5	51
45	Polarization invariance in beam propagation. Optics Letters, 2007, 32, 3400.	3.3	51
46	Spectral degree of coherence of a random three-dimensional electromagnetic field. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2004, 21, 2382.	1.5	50
47	Coherence-induced polarization changes in light beams. Optics Letters, 2008, 33, 1180.	3.3	46
48	Theory of diffraction tomography for quasi-homogeneous random objects. Optics Communications, 1997, 133, 17-21.	2.1	44
49	Solution of the Phase Problem in the Theory of Structure Determination of Crystals from X-Ray Diffraction Experiments. Physical Review Letters, 2009, 103, 075501.	7.8	42
50	Spectral modulation by control of source correlations. Optics Communications, 1988, 65, 91-96.	2.1	41
51	Youngâ€™s interference experiment with light of any state of coherence and of polarization. Optics Communications, 2005, 252, 268-274.	2.1	41
52	The rayleigh range of gaussian schell-model beams. Journal of Modern Optics, 2001, 48, 1735-1741.	1.3	37
53	Invariance of spectrum of light generated by a class of quasi-homogenous sources on propagation through turbulence. Optics Communications, 2004, 241, 11-15.	2.1	37
54	Significance and measurability of the phase of a spatially coherent optical field. Optics Letters, 2003, 28, 5.	3.3	36

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55	Can a light beam be considered to be the sum of a completely polarized and a completely unpolarized beam?. Optics Letters, 2008, 33, 642.	3.3	35
56	Spectra, coherence and polarization in Youngâ€™s interference pattern formed by stochastic electromagnetic beams. Optics Communications, 2006, 265, 63-72.	2.1	33
57	Far-zone behavior of focused fields in systems with different Fresnel numbers. Optics Communications, 1995, 119, 453-459.	2.1	31
58	Polarization-induced spectral changes on propagation of stochastic electromagnetic beams. Physical Review E, 2007, 75, 056610.	2.1	31
59	Determination of field correlations from spectral measurements with application to synthetic aperture imaging. Radio Science, 1991, 26, 1239-1243.	1.6	30
60	Determination of the degree of coherence of light from spectroscopic measurements. Optics Communications, 1998, 145, 1-4.	2.1	29
61	Far-zone behavior of electromagnetic fields generated by fluctuating current distributions. Physical Review A, 1987, 36, 1258-1269.	2.5	28
62	Coherence filters and their uses II. One-dimensional realizations. Journal of Modern Optics, 1998, 45, 799-816.	1.3	27
63	Propagation of the electric correlation matrix and the van Cittertâ€“Zernike theorem for random electromagnetic fields. Journal of Modern Optics, 2006, 53, 969-978.	1.3	27
64	Structure of focused fields in systems with large Fresnel numbers. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1995, 12, 1947.	1.5	26
65	Effects of spatial coherence on near-field spectra. Optics Letters, 2003, 28, 170.	3.3	26
66	Effects of linear non-image-forming devices on spectra and on coherence and polarization properties of stochastic electromagnetic beams: part I: general theory. Journal of Modern Optics, 2005, 52, 2659-2671.	1.3	26
67	Spectral changes in electromagnetic stochastic beams propagating through turbulent atmosphere. Journal of Modern Optics, 2008, 55, 1199-1208.	1.3	25
68	Spectral changes of stochastic beams scattered on a deterministic medium. Optics Letters, 2012, 37, 2517.	3.3	25
69	Principles and development of diffraction tomography. , 1996, , 83-110.		24
70	The spectral degree of coherence of fully spatially coherent electromagnetic beams. Optics Communications, 2003, 227, 73-74.	2.1	24
71	Reconstruction of Scattering Potentials from Incomplete Data. Journal of Modern Optics, 1994, 41, 1679-1685.	1.3	23
72	Far-zone spectral isotropy in weak scattering on spatially random media. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1997, 14, 2820.	1.5	22

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73	Coherence and polarization properties of electromagnetic laser modes. Optics Communications, 2006, 265, 60-62.	2.1	22
74	Coherence filters and their uses. I. Basic theory and examples. Journal of Modern Optics, 1997, 44, 1345-1353.	1.3	20
75	Comment on â€œComplete electromagnetic coherence in the spaceâ€“frequency domainâ€. Optics Letters, 2004, 29, 1712.	3.3	20
76	Radiance Functions of Partially Coherent Fields. Journal of Modern Optics, 1991, 38, 2053-2068.	1.3	17
77	Solution to the inverse scattering problem for strongly fluctuating media using partially coherent light. Optics Letters, 2002, 27, 1770.	3.3	17
78	Energy Conservation with Partially Coherent Sources Which Induce Spectral Changes in Emitted Radiation. Journal of Modern Optics, 1992, 39, 927-940.	1.3	16
79	Energy conservation law for randomly fluctuating electromagnetic fields. Physical Review E, 1999, 59, 4594-4599.	2.1	16
80	Coherence theory of pairs of correlated wave fields. Journal of Modern Optics, 2003, 50, 1791-1796.	1.3	16
81	A scalar-mode representation of stochastic, planar, electromagnetic sources. Optics Communications, 2006, 261, 19-22.	2.1	16
82	Propagation of Gaussian Schell-model Beams in Dispersive and Absorbing Media. Journal of Modern Optics, 1992, 39, 2007-2021.	1.3	15
83	Radiometry with Quasihomogeneous Sources. Journal of Modern Optics, 1995, 42, 787-798.	1.3	15
84	Cross-spectral density matrices of polarized light beams. Optics Letters, 2009, 34, 557.	3.3	15
85	Spatial coherence properties of azimuthally polarized laser modes. Optics Communications, 2008, 281, 5287-5290.	2.1	14
86	Higher-order Coherence Functions in the Space-frequency Domain. Journal of Modern Optics, 1993, 40, 1489-1496.	1.3	13
87	Cross-spectrally pure light and the spectral modulation law. Optics Communications, 1997, 138, 257-261.	2.1	13
88	Effects of linear non-image-forming devices on spectra and on coherence and polarization properties of stochastic electromagnetic beams: part II: examples. Journal of Modern Optics, 2005, 52, 2673-2685.	1.3	13
89	Quantum analysis of polarization properties of optical beams. Physical Review A, 2010, 82, .	2.5	13
90	Relationship between Complete Coherence in the Space-Time and in the Space-Frequency Domains. Physical Review Letters, 2010, 105, 063901.	7.8	13

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91	Partially coherent sources that generate the same far-field spectra as completely incoherent sources. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1988, 5, 1683.	1.5	12
92	Statistical similarity as a unifying concept of the theories of coherence and polarization of light. Optics Communications, 2010, 283, 4427-4429.	2.1	12
93	Theory of refraction and reflection with partially coherent electromagnetic beams. Physical Review A, 2012, 86, .	2.5	12
94	Transformation of coherence and of the spectrum of light by a moving diffuser. Journal of Modern Optics, 2001, 48, 717-727.	1.3	10
95	Spectral invariance in fields generated by quasi-homogeneous scaling law sources. Optics Communications, 2003, 215, 199-203.	2.1	10
96	Optimum depth of the information pit on the data surface of a compact disk. Journal of Modern Optics, 2003, 50, 199-206.	1.3	10
97	Polarization of completely coherent random electromagnetic beams. Optics Letters, 2006, 31, 146.	3.3	10
98	A spectral equivalence theorem. Optics Communications, 1989, 72, 1-6.	2.1	9
99	Coherence of two interfering beams modulated by a uniformly moving diffuser. Journal of Modern Optics, 2000, 47, 1569-1573.	1.3	9
100	Influence of Source Correlations on Spectra of Radiated Fields. , 1991, , 221-232.		9
101	Correlation-induced spectral changes and energy conservation. Physical Review A, 1996, 54, 4424-4427.	2.5	8
102	Chapter 7 The influence of Young's interference experiment on the development of statistical optics. Progress in Optics, 2007, 50, 251-273.	0.6	8
103	Geometrical optics limit of stochastic electromagnetic fields. Physical Review A, 2008, 77, .	2.5	8
104	On the physical contents of some integral equations for inverse scattering from inhomogeneous objects. Radio Science, 1986, 21, 627-634.	1.6	6
105	Polarization of a spatially fully coherent electromagnetic beam. Journal of Modern Optics, 2004, 51, 757-759.	1.3	6
106	Quantum theory of optical coherence of nonstationary light in the space-frequency domain. Physical Review A, 2010, 82, .	2.5	6
107	Does a light beam of very narrow bandwidth always behave as a monochromatic beam?. Physics Letters, Section A: General, Atomic and Solid State Physics, 2010, 374, 997-1000.	2.1	6
108	Coherence filters and their uses II. One-dimensional realizations. Journal of Modern Optics, 1998, 45, 799-816.	1.3	6

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109	Sources which generate fields whose spectra are invariant on propagation. Optics Communications, 1995, 119, 447-452.	2.1	5
110	Research Frontier. Physics Teacher, 1971, 9, 207-210.	0.3	4
111	Comment on a paper â€˜Radiation from arbitrarily polarized spatially incoherent sourceâ€™. Optics Communications, 2004, 242, 321-322.	2.1	4
112	An inverse problem in the theory of stochastic electromagnetic beams. Optics Communications, 2009, 282, 141-142.	2.1	4
113	Towards Spectroscopy of Partially Coherent Sources. , 1993, , 369-382.		4
114	Invariance properties of random pulses and of other random fields in dispersive media. Physical Review E, 1995, 52, 5532-5539.	2.1	3
115	Coherence effects in the near-field. Journal of Modern Optics, 2004, 51, 1603-1612.	1.3	3
116	The effect of a moving diffuser on a random electromagnetic beam. Journal of Modern Optics, 2005, 52, 791-796.	1.3	3
117	Beam criteria for propagation of electromagnetic beams in the turbulent atmosphere. Optics Communications, 2008, 281, 948-952.	2.1	2
118	Stokes beams formed by superposition of a completely unpolarized and a completely polarized Gaussian Schell-model beam. Optics Communications, 2012, 285, 4719-4726.	2.1	2
119	The Rayleigh range of Gaussian Schell-model beams. Journal of Modern Optics, 2001, 48, 1735-1741.	1.3	1
120	Energy conservation with partially coherent sources which generate frequency shifts of spectral lines. , 1990, , .		0
121	Coherence Effects in Radiometry and Spectroscopy. Optical Review, 1995, 2, 13-13.	2.0	0
122	An interference law for electromagnetic beams of any state of coherence and polarization. , 2004, , FTuG15.		0
123	Coherence-Induced Polarization Changes in Stochastic Electromagnetic Beams. , 2008, , .		0
124	Quantum Theory of Optical Coherence in the Space-frequency Domain. , 2011, , .		0
125	Spectral invariance on propagation. , 2004, , .		0
126	Control of spatial coherence and associated polarization changes by the use of liquid-crystal spatial light modulators. , 2004, , .		0

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127	Realizability conditions and synthesis of electromagnetic Gaussian Schell-model sources. , 2005, , .		0
128	Generalized Jones-Mueller polarization calculus. , 2005, , .		0
129	Coherence and polarization properties of far-fields generated by quasi-homogeneous electromagnetic sources. , 2005, , .		0
130	Invariance and non-invariance of the spectra of stochastic electromagnetic beams on propagation. , 2006, , .		0
131	Coherence and Polarization Properties of Electromagnetic Laser Modes. , 2006, , .		0
132	Correlation between Intensity Fluctuations in a Stochastic Electromagnetic Beam and the Degree of Cross-polarization. , 2007, , .		0
133	Unified Theory of Coherence and Polarization and Some of Its Applications. , 2007, , .		0
134	The degree of coherence of azimuthally polarized laser modes. , 2008, , .		0
135	Theory of Optical Coherence in the Space-time and in the Space-frequency Domains. , 2010, , .		0
136	Some Applications of the Unified Theory of Coherence and Polarization of Light. , 2010, , .		0
137	On the Possibility of Generating Doppler-Like Frequency Shifts of Spectral Lines by Scattering from Space-Time Fluctuations. , 1990, , 1235-1238.		0
138	Sudarshan's Optical Researches. Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences, 1997, 52, 2-2.	1.5	0