

Joseph A Shaw

List of Publications by Year in descending order

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148
papers

3,736
citations

172457

29
h-index

138484

58
g-index

149
all docs

149
docs citations

149
times ranked

2616
citing authors

#	ARTICLE	IF	CITATIONS
1	Review of passive imaging polarimetry for remote sensing applications. <i>Applied Optics</i> , 2006, 45, 5453.	2.1	1,249
2	Radiometry and the Friis transmission equation. <i>American Journal of Physics</i> , 2013, 81, 33-37.	0.7	153
3	A shallow subsurface controlled release facility in Bozeman, Montana, USA, for testing near surface CO2 detection techniques and transport models. <i>Environmental Earth Sciences</i> , 2010, 60, 227-239.	2.7	146
4	Scanning-laser glint measurements of sea-surface slope statistics. <i>Applied Optics</i> , 1997, 36, 4202.	2.1	119
5	Polarization lidar measurements of honey bees in flight for locating land mines. <i>Optics Express</i> , 2005, 13, 5853.	3.4	94
6	Dual-field imaging polarimeter using liquid crystal variable retarders. <i>Applied Optics</i> , 2006, 45, 5470.	2.1	89
7	Digital all-sky polarization imaging of partly cloudy skies. <i>Applied Optics</i> , 2008, 47, H190.	2.1	82
8	Degree of linear polarization in spectral radiances from water-viewing infrared radiometers. <i>Applied Optics</i> , 1999, 38, 3157.	2.1	68
9	Correcting for focal-plane-array temperature dependence in microbolometer infrared cameras lacking thermal stabilization. <i>Optical Engineering</i> , 2013, 52, 061304.	1.0	61
10	Radiometric cloud imaging with an uncooled microbolometer thermal infrared camera. <i>Optics Express</i> , 2005, 13, 5807.	3.4	60
11	The physics of near-infrared photography. <i>European Journal of Physics</i> , 2013, 34, S51-S71.	0.6	56
12	Infrared spectral radiance measurements in the tropical Pacific atmosphere. <i>Journal of Geophysical Research</i> , 1997, 102, 4353-4356.	3.3	50
13	Cloud statistics measured with the infrared cloud imager (ICI). <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2005, 43, 2000-2007.	6.3	50
14	Optical detection of honeybees by use of wing-beat modulation of scattered laser light for locating explosives and land mines. <i>Applied Optics</i> , 2006, 45, 1839.	2.1	50
15	Infrared cloud imaging in support of Earth-space optical communication. <i>Optics Express</i> , 2009, 17, 7862.	3.4	45
16	Wavelength dependence of the degree of polarization in cloud-free skies: simulations of real environments. <i>Optics Express</i> , 2012, 20, 15559.	3.4	45
17	Physics principles in radiometric infrared imaging of clouds in the atmosphere. <i>European Journal of Physics</i> , 2013, 34, S111-S121.	0.6	45
18	Range-resolved optical detection of honeybees by use of wing-beat modulation of scattered light for locating land mines. <i>Applied Optics</i> , 2007, 46, 3007.	2.1	42

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19	Airborne lidar detection and characterization of internal waves in a shallow fjord. Journal of Applied Remote Sensing, 2012, 6, 063611.	1.3	42
20	Effects of surface reflectance on skylight polarization measurements at the Mauna Loa Observatory. Optics Express, 2011, 19, 16008.	3.4	41
21	Water Vapor Profiling Using a Widely Tunable, Amplified Diode-Laser-Based Differential Absorption Lidar (DIAL). Journal of Atmospheric and Oceanic Technology, 2009, 26, 733-745.	1.3	40
22	Long-wave infrared imaging for non-invasive beehive population assessment. Optics Express, 2011, 19, 399.	3.4	39
23	Comparison of full-sky polarization and radiance observations to radiative transfer simulations which employ AERONET products. Optics Express, 2011, 19, 18602.	3.4	39
24	Radiosonde Humidity Soundings and Microwave Radiometers during Nauru99. Journal of Atmospheric and Oceanic Technology, 2003, 20, 953-971.	1.3	38
25	A controlled field pilot for testing near surface CO2 detection techniques and transport models. Energy Procedia, 2009, 1, 2143-2150.	1.8	35
26	Polarized infrared emissivity for a rough water surface. Optics Express, 2000, 7, 375.	3.4	34
27	Multi-spectral imaging of vegetation for detecting CO2 leaking from underground. Environmental Earth Sciences, 2010, 60, 313-323.	2.7	34
28	Radiometric calibration of infrared imagers using an internal shutter as an equivalent external blackbody. Optical Engineering, 2014, 53, 123106.	1.0	32
29	Dual-polarization lidar using a liquid crystal variable retarder. Optical Engineering, 2006, 45, 106202.	1.0	31
30	Hyperspectral imaging and neural networks to classify herbicide-resistant weeds. Journal of Applied Remote Sensing, 2019, 13, 1.	1.3	26
31	Coronas and iridescence in mountain wave clouds. Applied Optics, 2003, 42, 476.	2.1	24
32	Improved calibration of infrared radiometers for cloud temperature remote sensing. Optical Engineering, 1993, 32, 1002.	1.0	23
33	Dual-polarization airborne lidar for freshwater fisheries management and research. Optical Engineering, 2017, 56, 031221.	1.0	23
34	Review of Alternative Methods for Estimating Terrestrial Emittance and Geothermal Heat Flux for Yellowstone National Park Using Landsat Imagery. GIScience and Remote Sensing, 2010, 47, 460-479.	5.9	21
35	Airborne lidar detection and mapping of invasive lake trout in Yellowstone Lake. Applied Optics, 2018, 57, 4111.	1.8	21
36	Polarimetric measurements of long-wave infrared spectral radiance from water. Applied Optics, 2001, 40, 5985.	2.1	20

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37	Atmospheric measurements with unattended FTIR and Lidar. , 2001, , .		20
38	Experimental observation of signature changes in bulk soil electrical conductivity in response to engineered surface CO ₂ leakage. International Journal of Greenhouse Gas Control, 2012, 7, 20-29.	4.6	19
39	Lidar remote sensing of the aquatic environment: invited. Applied Optics, 2020, 59, C92.	1.8	19
40	Computer-aided design of two dimensional electric-type hyperthermia applicators using the finite-difference time-domain method. IEEE Transactions on Biomedical Engineering, 1991, 38, 861-870.	4.2	18
41	Reflective all-sky thermal infrared cloud imager. Optics Express, 2018, 26, 11276.	3.4	18
42	Field demonstration of a wing-beat modulation lidar for the 3D mapping of flying insects. OSA Continuum, 2019, 2, 332.	1.8	18
43	Multispectral imaging systems on tethered balloons for optical remote sensing education and research. Journal of Applied Remote Sensing, 2012, 6, 063613.	1.3	17
44	Long-wave infrared imaging of vegetation for detecting leaking CO ₂ gas. Journal of Applied Remote Sensing, 2012, 6, 063612.	1.3	17
45	Modeling infrared lunar radiance. Optical Engineering, 1999, 38, 1763.	1.0	16
46	<title>Snapshot LWIR hyperspectral polarimetric imager for ocean surface sensing</title>. , 2000, 4133, 270.		16
47	The optics and physics of near infrared imaging. Proceedings of SPIE, 2015, , .	0.8	16
48	Instrument effects in polarized infrared images. Optical Engineering, 1995, 34, 1396.	1.0	15
49	Colors of thermal pools at Yellowstone National Park. Applied Optics, 2015, 54, B128.	1.8	15
50	Detection of Leaking CO ₂ Gas With Vegetation Reflectances Measured By a Low-Cost Multispectral Imager. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2012, 5, 699-706.	4.9	14
51	Discrimination of herbicide-resistant kochia with hyperspectral imaging. Journal of Applied Remote Sensing, 2018, 12, 1.	1.3	14
52	All-sky polarization imaging of cloud thermodynamic phase. Optics Express, 2019, 27, 3528.	3.4	14
53	Ground-Based Remote Sensor Observations during PROBE in the Tropical Western Pacific. Bulletin of the American Meteorological Society, 1999, 80, 257-270.	3.3	13
54	The Effect of Instrument Polarization Sensitivity on Sea Surface Remote Sensing with Infrared Spectroradiometers. Journal of Atmospheric and Oceanic Technology, 2002, 19, 820-827.	1.3	13

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55	Icy wave-cloud lunar corona and cirrus iridescence. <i>Applied Optics</i> , 2011, 50, F6.	2.1	13
56	Infrared Moon imaging for remote sensing of atmospheric smoke layers. <i>Applied Optics</i> , 2015, 54, B64.	1.8	13
57	Fractal laser glints from the ocean surface. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 1997, 14, 1144.	1.5	12
58	Measuring the modulation transfer function of an imaging spectrometer with rooflines of opportunity. <i>Optical Engineering</i> , 2010, 49, 103201.	1.0	12
59	Hyperspectral Dimensionality Reduction Based on Inter-Band Redundancy Analysis and Greedy Spectral Selection. <i>Remote Sensing</i> , 2021, 13, 3649.	4.0	12
60	The snows of interior Alaska. <i>Atmospheric Environment Part A General Topics</i> , 1993, 27, 2091-2096.	1.3	11
61	Coronas and Iridescence in Mountain Wave Clouds Over Northeastern Colorado. <i>Bulletin of the American Meteorological Society</i> , 2003, 84, 1373-1386.	3.3	11
62	Calibration of uncooled LWIR microbolometer imagers to enable long-term field deployment. , 2014, , .		11
63	Efficient Convolutional Neural Networks for Multi-Spectral Image Classification. , 2019, , .		11
64	Observations of downwelling infrared spectral radiance at Mauna Loa, Hawaii during the 1997-1998 ENSO event. <i>Geophysical Research Letters</i> , 1999, 26, 1727-1730.	4.0	10
65	Low-cost multispectral vegetation imaging system for detecting leaking CO ₂ gas. <i>Applied Optics</i> , 2012, 51, A59.	1.8	10
66	Visualization of all-sky polarization images referenced in the instrument, scattering, and solar principal planes. <i>Optical Engineering</i> , 2019, 58, 1.	1.0	10
67	Glittering Light on Water. <i>Optics and Photonics News</i> , 1999, 10, 43.	0.5	9
68	Infrared polarization in the natural Earth environment. , 2002, 4819, 129.		8
69	Comparison of Long-Wave Infrared Imaging and Visible/Near-Infrared Imaging of Vegetation for Detecting Leaking CO_2 Gas. <i>IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing</i> , 2014, 7, 1651-1657.	4.9	8
70	Visible and invisible mirages: comparing inferior mirages in the visible and thermal infrared. <i>Applied Optics</i> , 2015, 54, B76.	1.8	8
71	Blue sun glints on water viewed through a polarizer. <i>Applied Optics</i> , 2017, 56, G36.	2.1	8
72	Lidar measurements of the diffuse attenuation coefficient in Yellowstone Lake. <i>Applied Optics</i> , 2020, 59, 3097.	1.8	8

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73	Comparison of Infrared Atmospheric Brightness Temperatures Measured by a Fourier Transform Spectrometer and a Filter Radiometer. <i>Journal of Atmospheric and Oceanic Technology</i> , 1995, 12, 1124-1128.	1.3	7
74	Visual demonstration of three-scale sea-surface roughness under light wind conditions. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2005, 43, 1751-1762.	6.3	7
75	A survey of infrared polarization in the outdoors. <i>Proceedings of SPIE</i> , 2007, , .	0.8	7
76	Brilliant colours from a white snow cover. <i>Physics Education</i> , 2013, 48, 322-331.	0.5	7
77	The VIS-“SWIR spectrum of skylight polarization. <i>Applied Optics</i> , 2018, 57, 7974.	1.8	7
78	Atmospheric optics in the near infrared. <i>Applied Optics</i> , 2017, 56, G145.	2.1	7
79	Extended visual range during solar eclipses. <i>Applied Optics</i> , 2018, 57, 3250.	1.8	6
80	Influence of second-order reflections during polarimetric calibration with two wire-grid polarizers. <i>Optical Engineering</i> , 2019, 58, 1.	1.0	6
81	Digital all-sky polarization imaging of the total solar eclipse on 21 August 2017 in Rexburg, Idaho, USA. <i>Applied Optics</i> , 2020, 59, F41.	1.8	6
82	Scanning infrared radiometer for measuring the air-sea temperature difference. <i>Applied Optics</i> , 2001, 40, 4807.	2.1	5
83	Correcting Calibrated Infrared Sky Imagery for the Effect of an Infrared Window. <i>Journal of Atmospheric and Oceanic Technology</i> , 2009, 26, 2403-2412.	1.3	5
84	Large-area blackbody emissivity variation with observation angle. , 2009, , .		5
85	Continuous outdoor operation of an all-sky polarization imager. , 2010, , .		5
86	Cloud optical depth measured with ground-based, uncooled infrared imagers. , 2012, , .		5
87	Analyzing Change in Yellowstone's Terrestrial Emittance with Landsat Imagery. <i>GIScience and Remote Sensing</i> , 2012, 49, 317-345.	5.9	5
88	Temporal evolution of sky polarization during solar eclipse totality. , 2019, , .		5
89	Detection of polarization neutral points in observations of the combined corona and sky during the 21 August 2017 total solar eclipse. <i>Applied Optics</i> , 2020, 59, F71.	1.8	5
90	Simulations and experimental results of cloud thermodynamic phase classification with three SWIR spectral bands. <i>Journal of Applied Remote Sensing</i> , 2019, 13, 1.	1.3	5

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91	The Digital Blue Sky at Night. Optics and Photonics News, 2005, 16, 18.	0.5	4
92	Measurement of advective soil gas flux: results of field and laboratory experiments with CO ₂ . Environmental Earth Sciences, 2013, 70, 1717-1726.	2.7	4
93	Bidirectional-reflectance measurements for various snow crystal morphologies. Cold Regions Science and Technology, 2016, 124, 110-117.	3.5	4
94	Optical transmittance of 3D printing materials. Applied Optics, 2021, 60, 6573.	1.8	4
95	Generalized nighttime radiative deficits. Journal of Hydrology, 2021, 603, 126971.	5.4	4
96	Development of a wing-beat-modulation scanning lidar system for insect studies. , 2017, , .		4
97	All-sky polarization measurements of the total solar eclipse on 21 August 2017. , 2018, , .		4
98	Cloud thermodynamic phase detection with a 3-channel shortwave infrared polarimeter. , 2018, , .		4
99	<title>Measurements of midwave and longwave infrared polarization from water</title>. , 1999, , .		3
100	Observational Studies of Atmospheric Aerosols over Bozeman, Montana, Using a Two-Color Lidar, a Water Vapor DIAL, a Solar Radiometer, and a Ground-Based Nephelometer over a 24-h Period. Journal of Atmospheric and Oceanic Technology, 2011, 28, 320-336.	1.3	3
101	Detection of a poorly resolved airplane using SWIR polarization imaging. Proceedings of SPIE, 2016, , .	0.8	3
102	Airborne lidar detection of an underwater thermal vent. Journal of Applied Remote Sensing, 2017, 11, 1.	1.3	3
103	Detection of Insects in Class-Imbalanced Lidar Field Measurements. , 2021, , .		3
104	Measuring the spectral response of a division-of-focal-plane polarization imager using a grating monochromator. Applied Optics, 2022, 61, 2364.	1.8	3
105	Measuring Arctic clouds with the infrared cloud imager. , 2002, , .		2
106	Long-wave infrared imaging of vegetation for detecting leaking CO ₂ gas. Proceedings of SPIE, 2012, , .	0.8	2
107	Teaching and learning geometric optics in middle school through the Turning Eyes to the Big Sky project. Optical Engineering, 2013, 52, 069001.	1.0	2
108	Effects of wildfire smoke on atmospheric polarization. , 2014, , .		2

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109	Visible-to-SWIR wavelength variation of skylight polarization. , 2015, , .		2
110	Inflight observation of Bottlingerâ€™s rings. Applied Optics, 2017, 56, G113.	2.1	2
111	Trutinor: A Conceptual Study for a Next-Generation Earth Radiant Energy Instrument. Remote Sensing, 2020, 12, 3281.	4.0	2
112	Assessing produce freshness using hyperspectral imaging and machine learning. Journal of Applied Remote Sensing, 2021, 15, .	1.3	2
113	Hyperspectral Band Selection for Multispectral Image Classification with Convolutional Networks. , 2021, , .		2
114	Applying Gaussian Mixture Models to Detect Fish from Airborne LiDAR Measurements. , 2021, , .		2
115	Atmospheric measurements with unattended FTIR and Lidar. , 2001, , .		2
116	Camera characterization for all-sky polarization measurements during the 2017 solar eclipse. , 2017, , .		2
117	Polarization enhancement of passive SWIR cloud thermodynamic phase remote sensing. , 2019, , .		2
118	Light and Color in the Open Air: introduction to the feature issue. Applied Optics, 2011, 50, LC1.	2.1	1
119	Comparison of sky polarization observations to radiative transfer simulations which use AERONET retrieval data. , 2011, , .		1
120	Light and color in the open air: Introduction to the feature issue. Applied Optics, 2015, 54, LC1.	1.8	1
121	HeiÃŸe Physik im Yellowstone-Park. Physik in Unserer Zeit, 2017, 48, 37-42.	0.0	1
122	Light and color in the open airâ€™introduction to the feature issue. Applied Optics, 2017, 56, LC1.	1.8	1
123	Passive shortwave-infrared polarimetric sensing of cloud thermodynamic phase. Journal of Applied Remote Sensing, 2021, 15, .	1.3	1
124	Machine learning-based region of interest detection in airborne lidar fisheries surveys. Journal of Applied Remote Sensing, 2021, 15, .	1.3	1
125	Polarimetric characterization of a monochromator to measure the spectral response of a pixelated polarization imager. , 2021, , .		1
126	Automated Detection of Insects in Lidar Data. , 2021, , .		1

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127	Blue sun reflected from water: optical lessons from observations of nature. , 2017, , .		1
128	Seeing better in nature: contrast enhancement by near infrared imaging. European Journal of Physics, 2022, 43, 034001.	0.6	1
129	Optical Engineering. Optics and Photonics News, 2005, 16, 32.	0.5	0
130	Light and Color in the Open Air: introduction to the feature issue. Applied Optics, 2008, 47, LC1.	2.1	0
131	All-sky imaging of visible-wavelength atmospheric polarization at Mauna Loa, Hawaii. , 2010, , .		0
132	Observational studies of atmospheric aerosols in the lower troposphere using multiple sensors. , 2010, , .		0
133	Dual-polarization lidar identification of ice in a corona-producing wave cloud. Proceedings of SPIE, 2011, , .	0.8	0
134	Multispectral imaging system on tethered balloons for optical remote sensing education and outreach. , 2012, , .		0
135	How clear-sky polarization varies with wavelength in the visible-NIR. Proceedings of SPIE, 2013, , .	0.8	0
136	Das farbenprÄchtige Glitzern frischen Schnees. Physik in Unserer Zeit, 2014, 45, 97-98.	0.0	0
137	Rotwein zu Wasser. Physik in Unserer Zeit, 2015, 46, 12-16.	0.0	0
138	Development of a Narrow Field of View Infrared Cloud Imager System for Optical Propagation Measurements. , 2016, , .		0
139	Radiometric calibration of an ultra-compact microbolometer thermal imaging module. , 2017, , .		0
140	Cloud thermodynamic phase measured with a low-cost, ground-based, all-sky imaging polarimeter. , 2021, , .		0
141	Thermal Imaging of Vegetation to Detect CO2 Gas Leaking From Underground. , 2013, , .		0
142	Cloud thermodynamic phase detection using an all-sky imaging polarimeter. , 2017, , .		0
143	Observing halos through airplane windows. , 2017, , .		0
144	Extended visual range: an observation during a total solar eclipse. , 2019, , .		0

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145	Near infrared photography of atmospheric optical phenomena. , 2019, , .		0
146	Thermal imaging and heat islands: cross-discipline learning in optics and meteorology. , 2019, , .		0
147	Fisheye imaging of sky polarization at the August 2017 solar eclipse. , 2020, , .		0
148	Passive Polarimetric Remote Sensing of Cloud Thermodynamic Phase. , 2020, , .		0