

David Keith Wilson

List of Publications by Year in descending order

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138
papers

2,056
citations

279798

23
h-index

315739

38
g-index

178
all docs

178
docs citations

178
times ranked

798
citing authors

#	ARTICLE	IF	CITATIONS
1	Numerical modeling of mesoscale infrasound propagation in the Arctic. Journal of the Acoustical Society of America, 2022, 151, 138-157.	1.1	6
2	Signal power distributions for simulated outdoor sound propagation in varying refractive conditions. Journal of the Acoustical Society of America, 2022, 151, 3895-3906.	1.1	2
3	Vertical and slanted sound propagation in the near-ground atmosphere: Amplitude and phase fluctuations. Journal of the Acoustical Society of America, 2021, 149, 2055-2071.	1.1	12
4	Machine-learning of long-range sound propagation through simulated atmospheric turbulence. Journal of the Acoustical Society of America, 2021, 149, 4384-4395.	1.1	5
5	Urban noise distributions and the influence of geometric spreading on skewness. Journal of the Acoustical Society of America, 2021, 150, 783-800.	1.1	3
6	Vertical and slanted sound propagation in the near-ground atmosphere: Coherence and distributions. Journal of the Acoustical Society of America, 2021, 150, 3109-3126.	1.1	9
7	A computational method whose time had come. Journal of the Acoustical Society of America, 2020, 148, R7-R8.	1.1	3
8	Wave and extra-wide-angle parabolic equations for sound propagation in a moving atmosphere. Journal of the Acoustical Society of America, 2020, 147, 3969-3984.	1.1	14
9	Bayesian classifier performance for realistically randomized signals. , 2020, , .		0
10	A physics-informed neural network for sound propagation in the atmospheric boundary layer. Proceedings of Meetings on Acoustics, 2020, , .	0.3	5
11	Distribution of the two-point product of complex amplitudes in the fully saturated scattering regime. Journal of the Acoustical Society of America, 2020, 148, EL347-EL352.	1.1	3
12	Theory for spectral broadening of narrowband signals in the atmosphere and experiment with an acoustic source onboard an unmanned aerial vehicle. Journal of the Acoustical Society of America, 2019, 145, 3703-3714.	1.1	2
13	Street-scale Mapping of Urban Radio Frequency Noise at Very High Frequency and Ultra High Frequency. Radio Science, 2019, 54, 934-948.	1.6	5
14	Non-Markov character of the phase fluctuations for sound propagation over relatively small ranges in the turbulent atmosphere. Journal of the Acoustical Society of America, 2019, 145, 3359-3369.	1.1	4
15	Extra-wide-angle parabolic equations in motionless and moving media. Journal of the Acoustical Society of America, 2019, 145, 1031-1047.	1.1	8
16	Mimicking a perfectly matched layer with a porous medium. Proceedings of Meetings on Acoustics, 2019, , .	0.3	0
17	Summary of Special Session "Uncertainty in Propagation Prediction". Proceedings of Meetings on Acoustics, 2019, , .	0.3	0
18	Bayesian learning of random signal distributions in complex environments. , 2019, , .		0

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19	Correspondence between sound propagation in discrete and continuous random media with application to forest acoustics. Journal of the Acoustical Society of America, 2018, 143, 1194-1205.	1.1	2
20	Acoustic pulse propagation in forests. Journal of the Acoustical Society of America, 2018, 143, 968-979.	1.1	1
21	An experimental study of the atmospheric-driven variability of impulse sounds. Journal of the Acoustical Society of America, 2018, 144, 822-840.	1.1	12
22	Statistical Characterization of Sound Propagation Over Vertical and Slanted Paths in a Turbulent Atmosphere. Acta Acustica United With Acustica, 2018, 104, 571-585.	0.8	7
23	Bayesian estimation of mean transmission loss along multiple paths with randomly scattered signals. Proceedings of Meetings on Acoustics, 2018, , .	0.3	2
24	Modeling RF and acoustic signal propagation in complex environments. , 2018, , .		0
25	Modeling of signal propagation and sensor performance for infrasound and blast noise. Proceedings of SPIE, 2017, , .	0.8	0
26	Impact of signal scattering and parametric uncertainties on receiver operating characteristics. , 2017, , .		1
27	EASEE: an open architecture approach for modeling battlespace signal and sensor phenomenology. , 2017, , .		0
28	Strength and wave parameters for sound propagation in random media. Journal of the Acoustical Society of America, 2017, 141, 2079-2092.	1.1	6
29	Effective wavenumbers for sound scattering by trunks, branches, and the canopy in a forest. Journal of the Acoustical Society of America, 2017, 142, EL177-EL183.	1.1	3
30	Radiative transfer formulation for forest acoustics. Journal of the Acoustical Society of America, 2017, 142, 3767-3780.	1.1	4
31	Optimisation of numbers, types, and locations of wireless sensors with communication, finite supply, and multiple-sensor coverage constraints. International Journal of Sensor Networks, 2017, 23, 222.	0.4	2
32	Multilevel modeling and regression of community annoyance to transportation noise. Journal of the Acoustical Society of America, 2017, 142, 2905-2918.	1.1	8
33	Scattered signal distributions, parametric uncertainties, and Bayesian sequential updating. Proceedings of Meetings on Acoustics, 2017, , .	0.3	6
34	Comparisons between physics-based, engineering, and statistical learning models for outdoor sound propagation. Journal of the Acoustical Society of America, 2016, 139, 2640-2655.	1.1	7
35	Cross-frequency coherence and pulse propagation in a turbulent atmosphere. Journal of the Acoustical Society of America, 2016, 140, 678-691.	1.1	7
36	Acoustic pulse propagation in an urban environment using a three-dimensional numerical simulation. Journal of the Acoustical Society of America, 2014, 135, 3231-3242.	1.1	17

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37	Spatial-temporal coherence of acoustic signals propagating in a refractive, turbulent atmosphere. Journal of the Acoustical Society of America, 2014, 136, 2414-2431.	1.1	11
38	Description and quantification of uncertainty in outdoor sound propagation calculations. Journal of the Acoustical Society of America, 2014, 136, 1013-1028.	1.1	18
39	Variational inference of cluster-weighted models for local and global sensitivity analysis. International Journal of Reliability and Safety, 2014, 8, 196.	0.2	1
40	Statistical moments of a wideband acoustic signal. Proceedings of Meetings on Acoustics, 2014, , .	0.3	0
41	Sonic Anemometer as a Small Acoustic Tomography Array. Boundary-Layer Meteorology, 2013, 149, 165-178.	2.3	3
42	Integration of radio-frequency transmission and radar in general software for multimodal battlefield signal modeling. Proceedings of SPIE, 2013, , .	0.8	0
43	Characterization of infrared imaging performance within a general statistical framework for environmental impacts on battlefield signals and sensing. , 2013, , .		1
44	Assessment of systematic measurement errors for acoustic travel-time tomography of the atmosphere. Journal of the Acoustical Society of America, 2013, 134, 1802-1813.	1.1	6
45	Information-criterion based selection of models for community noise annoyance. Journal of the Acoustical Society of America, 2013, 133, EL195-EL201.	1.1	9
46	Source localization results for airborne acoustic platforms in the 2010 Yuma Proving Ground test. Proceedings of SPIE, 2013, , .	0.8	1
47	Application of the equivalent source method to directional noise sources. Noise Control Engineering Journal, 2012, 60, 137.	0.3	2
48	General software for multimodal signal modeling and optimal sensor placement: Environmental Awareness for Sensor and Emitter Employment (EASEE). , 2012, , .		0
49	Software for multimodal battlefield signal modeling and optimal sensor placement. , 2012, , .		1
50	Source localization corrections for airborne acoustic platforms based on a climatological assessment of temperature and wind velocity profiles. Proceedings of SPIE, 2012, , .	0.8	1
51	Utilization of an acoustic tomography array as a large sonic anemometer/thermometer. Proceedings of Meetings on Acoustics, 2012, , .	0.3	1
52	Variational Inference of Cluster-Weighted Models for Sensitivity Analysis. , 2011, , .		0
53	Incorporating source directionality into outdoor sound propagation calculations. Journal of the Acoustical Society of America, 2011, 130, 3608-3622.	1.1	14
54	Effect of randomly varying impedance on the interference of the direct and ground-reflected waves. Journal of the Acoustical Society of America, 2011, 130, 1844-1850.	1.1	5

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55	Optimal sensor placement with signal propagation effects and inhomogeneous coverage preferences. International Journal of Sensor Networks, 2011, 9, 107.	0.4	13
56	A computational study of the effect of windscreen shape and flow resistivity on turbulent wind noise reduction. Journal of the Acoustical Society of America, 2011, 129, 1740-1747.	1.1	26
57	Optimal placement of multiple types of communicating sensors with availability and coverage redundancy constraints. , 2010, , .		3
58	Environmental awareness for sensor and emitter employment. , 2010, , .		0
59	Full-field sensitivity analysis through dimension reduction and probabilistic surrogate models. Probabilistic Engineering Mechanics, 2010, 25, 380-392.	2.7	4
60	SIMULATION OF TURBULENT WIND NOISE REDUCTION BY POROUS WINDSCREENS USING HIGH-ORDER SCHEMES. Journal of Computational Acoustics, 2010, 18, 321-334.	1.0	16
61	Discrimination of Wind Noise and Sound Waves by Their Contrasting Spatial and Temporal Properties. Acta Acustica United With Acustica, 2010, 96, 991-1002.	0.8	10
62	Transverse-longitudinal coherence function of a sound field for line-of-sight propagation in a turbulent atmosphere. Waves in Random and Complex Media, 2009, 19, 670-691.	2.7	5
63	Behaviors of Vortex Wake in Random Atmospheric Turbulence. Journal of Aircraft, 2009, 46, 2139-2144.	2.4	9
64	Moment-screen method for wave propagation in a refractive medium with random scattering. Waves in Random and Complex Media, 2009, 19, 369-391.	2.7	9
65	Quasi-wavelet formulations of turbulence and other random fields with correlated properties. Probabilistic Engineering Mechanics, 2009, 24, 343-357.	2.7	9
66	On the influence of problem definition in sensor placement optimization. , 2009, , .		0
67	Recent progress in acoustic travel-time tomography of the atmospheric surface layer. Meteorologische Zeitschrift, 2009, 18, 125-133.	1.0	25
68	General framework for predicting environmental effects on signatures and sensor performance in complex environments. Proceedings of SPIE, 2009, , .	0.8	0
69	Quasi-wavelet formulations of turbulence and wave scattering. Meteorologische Zeitschrift, 2009, 18, 237-252.	1.0	3
70	Acoustic Travel-Time Tomography of the Atmospheric Surface Layer. , 2009, , .		0
71	Time-dependent stochastic inversion in acoustic tomography of the atmosphere with reciprocal sound transmission. Measurement Science and Technology, 2008, 19, 125501.	2.6	15
72	Source localization from an elevated acoustic sensor array in a refractive atmosphere. Journal of the Acoustical Society of America, 2008, 124, 3413-3420.	1.1	23

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73	Scattering of Urban Sound Energy from High-Performance Computations. , 2008, , .		2
74	Dependence of predictive skill for outdoor narrowband and broadband sound levels on the atmospheric representation. Noise Control Engineering Journal, 2008, 56, 465.	0.3	11
75	Sound-wave coherence in atmospheric turbulence with intrinsic and global intermittency. Journal of the Acoustical Society of America, 2008, 124, 743-757.	1.1	9
76	Signal fading curves from computed urban acoustic wave fields. , 2008, , .		2
77	Three-Dimensional Acoustic Travel-Time Tomography of the Atmosphere. Acta Acustica United With Acustica, 2008, 94, 349-358.	0.8	20
78	Implementing statistical acoustic characterization of urban terrain into a decision support tool. , 2008, , .		0
79	Probabilistic framework for characterizing uncertainty in the performance of networked battlefield sensors. Proceedings of SPIE, 2008, , .	0.8	3
80	Recent progress in acoustic tomography of the atmosphere. IOP Conference Series: Earth and Environmental Science, 2008, 1, 012008.	0.3	1
81	Characterization of uncertainty in outdoor sound propagation predictions. Journal of the Acoustical Society of America, 2007, 121, EL177-EL183.	1.1	16
82	Acoustic/seismic signal propagation and sensor performance modeling. , 2007, , .		4
83	Proper orthogonal decomposition and cluster weighted modeling for sensitivity analysis of sound propagation in the atmospheric surface layer. Journal of the Acoustical Society of America, 2007, 122, 1374-1390.	1.1	20
84	The effect of changing scatterer positions on acoustic time-reversal refocusing in a 2D urban environment at low frequencies. Journal of Geophysics and Engineering, 2007, 4, 276-284.	1.4	12
85	Spatial structure of low-frequency wind noise. Journal of the Acoustical Society of America, 2007, 122, EL223-EL228.	1.1	11
86	Spatial Processing of Urban Acoustic Wave Fields from High-Performance Computations. , 2007, , .		6
87	Pad $\hat{\circ}$ approximation in time-domain boundary conditions of porous surfaces. Journal of the Acoustical Society of America, 2007, 122, 107-112.	1.1	22
88	Tomographic reconstruction of atmospheric turbulence with the use of time-dependent stochastic inversion. Journal of the Acoustical Society of America, 2007, 122, 1416-1425.	1.1	36
89	Time-domain calculations of sound interactions with outdoor ground surfaces. Applied Acoustics, 2007, 68, 173-200.	3.3	47
90	Acoustic array tracking performance under moderately complex environmental conditions. Applied Acoustics, 2007, 68, 1241-1262.	3.3	12

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91	Time-dependent stochastic inversion in acoustic travel-time tomography of the atmosphere. Journal of the Acoustical Society of America, 2006, 119, 2579-2588.	1.1	45
92	Prediction of outdoor sound transmission loss with an artificial neural network. Applied Acoustics, 2006, 67, 324-345.	3.3	22
93	Quasi-Wavelet Models of Turbulent Temperature Fluctuations. Boundary-Layer Meteorology, 2006, 120, 1-23.	2.3	11
94	Simulation of fluid flow in and around a porous windscreen. Journal of the Acoustical Society of America, 2006, 119, 3294-3295.	1.1	1
95	<title>High-fidelity simulation capability for virtual testing of seismic and acoustic sensors</title> . , 2005, 5796, 105.		0
96	Equations for finite-difference, time-domain simulation of sound propagation in moving inhomogeneous media and numerical implementation. Journal of the Acoustical Society of America, 2005, 117, 503-517.	1.1	130
97	Sound propagation through and scattering by internal gravity waves in a stably stratified atmosphere. Journal of the Acoustical Society of America, 2005, 118, 3420-3429.	1.1	29
98	Spherical wave propagation through inhomogeneous, anisotropic turbulence: Log-amplitude and phase correlations. Journal of the Acoustical Society of America, 2004, 115, 120-130.	1.1	9
99	Performance bounds for passive sensor arrays operating in a turbulent medium: Spherical-wave analysis. Journal of the Acoustical Society of America, 2004, 116, 987-1001.	1.1	10
100	Coherence function and mean field of plane and spherical sound waves propagating through inhomogeneous anisotropic turbulence. Journal of the Acoustical Society of America, 2004, 115, 497-506.	1.1	14
101	Quasi-Wavelet Model of Von Kármán Spectrum of Turbulent Velocity Fluctuations. Boundary-Layer Meteorology, 2004, 112, 33-56.	2.3	26
102	Quasi-wavelet calculations of sound scattering behind barriers. Applied Acoustics, 2004, 65, 605-627.	3.3	17
103	Time-domain equations for sound propagation in rigid-frame porous media (L). Journal of the Acoustical Society of America, 2004, 116, 1889-1892.	1.1	29
104	Development of a high-fidelity simulation capability for battlefield acoustics. , 2003, , .		3
105	Performance bounds for passive sensor arrays operating in a turbulent medium: Plane-wave analysis. Journal of the Acoustical Society of America, 2003, 113, 2704-2718.	1.1	22
106	Measurement and prediction of ultralow frequency ocean ambient noise off the eastern U.S. coast. Journal of the Acoustical Society of America, 2003, 113, 3117.	1.1	15
107	The sound-speed gradient and refraction in the near-ground atmosphere. Journal of the Acoustical Society of America, 2003, 113, 750-757.	1.1	27
108	Sound Propagation in the Nocturnal Boundary Layer. Journals of the Atmospheric Sciences, 2003, 60, 2473-2486.	1.7	21

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109	Simulation of detection and beamforming with acoustical ground sensors. , 2002, 4743, 50.		11
110	<title>Battlefield decision aid for acoustical ground sensors with interface to meteorological data sources</title>. , 2001, , .		2
111	An Alternative Function For The Wind And Temperature Gradients In Unstable Surface Layers. Boundary-Layer Meteorology, 2001, 99, 151-158.	2.3	86
112	Atmospheric scattering for varying degrees of saturation and turbulent intermittency. Journal of the Acoustical Society of America, 2001, 109, 1871-1880.	1.1	12
113	Statistical moments of the sound field propagating in a random, refractive medium near an impedance boundary. Journal of the Acoustical Society of America, 2001, 109, 1909-1922.	1.1	13
114	Sound propagation in a turbulent atmosphere near the ground: A parabolic equation approach. Journal of the Acoustical Society of America, 2001, 109, 1894-1908.	1.1	27
115	A turbulence spectral model for sound propagation in the atmosphere that incorporates shear and buoyancy forcings. Journal of the Acoustical Society of America, 2000, 108, 2021-2038.	1.1	51
116	Experimental determination of the effective structure-function parameter for atmospheric turbulence. Journal of the Acoustical Society of America, 1999, 105, 912-914.	1.1	1
117	Acoustic scattering and the spectrum of atmospheric turbulence. Journal of the Acoustical Society of America, 1999, 105, 30-34.	1.1	47
118	Calculated coherence and extinction of sound waves propagating through anisotropic, shear-induced turbulent velocity fluctuations. Journal of the Acoustical Society of America, 1999, 105, 658-671.	1.1	9
119	Acoustic scintillations and angle-of-arrival fluctuations observed outdoors with a large planar vertical microphone array. Journal of the Acoustical Society of America, 1999, 106, L24-L29.	1.1	3
120	Performance bounds for acoustic direction-of-arrival arrays operating in atmospheric turbulence. Journal of the Acoustical Society of America, 1998, 103, 1306-1319.	1.1	54
121	Scattering of acoustic waves by intermittent temperature and velocity fluctuations. Journal of the Acoustical Society of America, 1997, 101, 2980-2982.	1.1	9
122	A Three-Dimensional Correlation/Spectral Model for Turbulent Velocities in a Convective Boundary Layer. Boundary-Layer Meteorology, 1997, 85, 35-52.	2.3	17
123	Simple, relaxational models for the acoustical properties of porous media. Applied Acoustics, 1997, 50, 171-188.	3.3	121
124	The effect of turbulent intermittency on scattering into an acoustic shadow zone. Journal of the Acoustical Society of America, 1996, 99, 3393-3400.	1.1	25
125	Empirical Orthogonal Function Analysis of the Weakly Convective Atmospheric Boundary Layer. Part II: Eddy Energetics. Journals of the Atmospheric Sciences, 1996, 53, 824-841.	1.7	16
126	Empirical Orthogonal Function Analysis of the Weakly Convective Atmospheric Boundary Layer. Part I: Eddy Structures. Journals of the Atmospheric Sciences, 1996, 53, 801-823.	1.7	24

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127	Atmospheric turbulence effects on acoustic angle-of-arrival estimations. Journal of the Acoustical Society of America, 1996, 100, 2746-2747.	1.1	0
128	Acoustic propagation through anisotropic, surface-layer turbulence. Journal of the Acoustical Society of America, 1994, 96, 1080-1095.	1.1	36
129	Acoustic Tomographic Monitoring of the Atmospheric Surface Layer. Journal of Atmospheric and Oceanic Technology, 1994, 11, 751-769.	1.3	63
130	Sound propagation in the atmospheric surface layer: Comparison of experiment with FFP predictions. Applied Acoustics, 1993, 40, 325-346.	3.3	25
131	Relaxation-matched modeling of propagation through porous media, including fractal pore structure. Journal of the Acoustical Society of America, 1993, 94, 1136-1145.	1.1	107
132	Sound field computations in a stratified, moving medium. Journal of the Acoustical Society of America, 1993, 94, 400-407.	1.1	21
133	Acoustic tomographic monitoring of the atmospheric boundary layer. Journal of the Acoustical Society of America, 1992, 92, 3441-3441.	1.1	4
134	Natural temporal variability of atmospheric acoustic absorption coefficients. Applied Acoustics, 1991, 34, 111-121.	3.3	7
135	Use of wave-number-domain windows in fast field programs. Journal of the Acoustical Society of America, 1991, 89, 448-450.	1.1	5
136	Forchheimer-type nonlinearities for high-intensity propagation of pure tones in air-saturated porous media. Journal of the Acoustical Society of America, 1988, 84, 350-359.	1.1	22
137	Ask an Acoustician: D. Keith Wilson. Acoustics Today, 0, 16, 71.	1.0	0
138	Non-Markov behavior of acoustic phase variance in the atmospheric boundary layer. Waves in Random and Complex Media, 0, , 1-16.	2.7	1