David Keith

List of Publications by Year
in descending order

144 papers	12,325 citations	18482 62 h-index	28297 105 g-index
148 all docs	148 docs citations	148 times ranked	8747 citing authors

#	Article	IF	Citations
1	The value of information about solar geoengineering and the two-sided cost of bias. Climate Policy, 2023, 23, 355-365.	5.1	0
2	Solar geoengineering research on the U.S. policy agenda: when might its time come?. Environmental Politics, 2022, 31, 498-518.	5.4	6
3	An interactive stratospheric aerosol model intercomparison of solar geoengineering by stratospheric injection of SO₂ or accumulation-mode sulfuric acid aerosols. Atmospheric Chemistry and Physics, 2022, 22, 2955-2973.	4.9	13
4	Developing a Plumeâ€inâ€Grid Model for Plume Evolution in the Stratosphere. Journal of Advances in Modeling Earth Systems, 2022, 14, .	3.8	3
5	Designing a Radiative Antidote to CO₂. Geophysical Research Letters, 2021, 48, .	4.0	7
6	Aerosol Dynamics in the Near Field of the SCoPEx Stratospheric Balloon Experiment. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD033438.	3.3	3
7	Solar geoengineering can alleviate climate change pressures on crop yields. Nature Food, 2021, 2, 373-381.	14.0	20
8	OPTIMAL CLIMATE POLICY IN 3D: MITIGATION, CARBON REMOVAL, AND SOLAR GEOENGINEERING. Climate Change Economics, 2021, 12, .	5.0	8
9	Elicitation of US and Chinese expert judgments show consistent views on solar geoengineering. Humanities and Social Sciences Communications, 2021, 8, .	2.9	9
10	Parametric Insurance for Solar Geoengineering: Insights from the Pacific Catastrophe Risk Assessment and Financing Initiative. Global Policy, 2021, 12, 97-107.	1.7	1
11	Social science research to inform solar geoengineering. Science, 2021, 374, 815-818.	12.6	21
12	Toward constructive disagreement about geoengineering. Science, 2021, 374, 812-815.	12.6	18
13	Halving warming with stratospheric aerosol geoengineering moderates policy-relevant climate hazards. Environmental Research Letters, 2020, 15, 044011.	5.2	25
14	Estimating Impacts and Tradeâ€offs in Solar Geoengineering Scenarios With a Moist Energy Balance Model. Geophysical Research Letters, 2020, 47, e2020GL087290.	4.0	9
15	Experimental reaction rates constrain estimates of ozone response to calcium carbonate geoengineering. Communications Earth & Environment, 2020, 1, .	6.8	10
16	Exploring accumulation-mode H₂SO₄ versus SO₂ stratospheric sulfate geoengineering in a sectional aerosolâ€“chemistryâ€“climate model. Atmospheric Chemistry and Physics, 2019, 19, 4877-4897.	4.9	22
17	Multilateral parametric climate risk insurance: a tool to facilitate agreement about deployment of solar geoengineering?. Climate Policy, 2019, 19, 820-826.	5.1	15
18	Halving warming with idealized solar geoengineering moderates key climate hazards. Nature Climate Change, 2019, 9, 295-299.	18.8	139

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19	Tailoring Meridional and Seasonal Radiative Forcing by Sulfate Aerosol Solar Geoengineering. Geophysical Research Letters, 2018, 45, 1030-1039.	4.0	48
20	Solar geoengineering as part of an overall strategy for meeting the 1.5Â°C Paris target. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20160454.	3.4	103
21	Mortality tradeoff between air quality and skin cancer from changes in stratospheric ozone. Environmental Research Letters, 2018, 13, 034035.	5.2	8
22	Production of Sulfates Onboard an Aircraft: Implications for the Cost and Feasibility of Stratospheric Solar Geoengineering. Earth and Space Science, 2018, 5, 150-162.	2.6	16
23	Brief communication: Understanding solar geoengineering's potential to limit sea level rise requires attention from cryosphere experts. Cryosphere, 2018, 12, 2501-2513.	3.9	14
24	Climatic Impacts of Wind Power. Joule, 2018, 2, 2618-2632.	24.0	70
25	Observation-based solar and wind power capacity factors and power densities. Environmental Research Letters, 2018, 13, 104008.	5.2	59
26	Quantifying the impact of sulfate geoengineering on mortality from air quality and UV-B exposure. Atmospheric Environment, 2018, 187, 424-434.	4.1	48
27	Solar Geoengineering and Democracy. Global Environmental Politics, 2018, 18, 5-24.	3.0	52
28	A Process for Capturing CO2 from the Atmosphere. Joule, 2018, 2, 1573-1594.	24.0	976
29	Stopping Solar Geoengineering Through Technical Means: A Preliminary Assessment of Counterâ€Geoengineering. Earth's Future, 2018, 6, 1058-1065.	6.3	52
30	Unmask temporal trade-offs in climate policy debates. Science, 2017, 356, 492-493.	12.6	80
31	Solar geoengineering reduces atmospheric carbon burden. Nature Climate Change, 2017, 7, 617-619.	18.8	56
32	What do people think when they think about solar geoengineering? A review of empirical social science literature, and prospects for future research. Earth's Future, 2016, 4, 536-542.	6.3	80
33	Stratospheric solar geoengineering without ozone loss. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 14910-14914.	7.1	108
34	Improved aerosol radiative properties as a foundation for solar geoengineering risk assessment. Geophysical Research Letters, 2016, 43, 7758-7766.	4.0	74
35	The promise of negative emissions. Science, 2016, 354, 714-714.	12.6	24
36	Solar geoengineering could substantially reduce climate risksâ€"A research hypothesis for the next decade. Earth's Future, 2016, 4, 549-559.	6.3	67

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37	Modeling the effects of climate engineering. Science, 2016, 352, 1526-1527.	12.6	1
38	Solar geoengineering using solid aerosol in the stratosphere. Atmospheric Chemistry and Physics, 2015, 15, 11835-11859.	4.9	77
39	A temporary, moderate and responsive scenario for solar geoengineering. Nature Climate Change, 2015, 5, 201-206.	18.8	104
40	Two methods for estimating limits to large-scale wind power generation. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 11169-11174.	7.1	57
41	How much bulk energy storage is needed to decarbonize electricity?. Energy and Environmental Science, 2015, 8, 3409-3417.	30.8	66
42	A multi-model assessment of regional climate disparities caused by solar geoengineering. Environmental Research Letters, 2014, 9, 074013.	5.2	101
43	Geoengineering: The world's largest control problem. , 2014, , .		6
44	Solar geoengineering to limit the rate of temperature change. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20140134.	3.4	61
45	Dynamics of the coupled humanâ€"climate system resulting from closed-loop control of solar geoengineering. Climate Dynamics, 2014, 43, 243-258.	3.8	71
46	Compressed air energy storage with waste heat export: An Alberta case study. Energy Conversion and Management, 2014, 78, 114-124.	9.2	95
47	Field experiments on solar geoengineering: report of a workshop exploring a representative research portfolio. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20140175.	3.4	66
48	Stratospheric controlled perturbation experiment: a small-scale experiment to improve understanding of the risks of solar geoengineering. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20140059.	3.4	73
49	Outdoor Prototype Results for Direct Atmospheric Capture of Carbon Dioxide. Energy Procedia, 2013, 37, 6079-6095.	1.8	49
50	Public engagement on solar radiation management and why it needs to happen now. Climatic Change, 2013, 121, 567-577.	3.6	49
51	Climate policy under uncertainty: a case for solar geoengineering. Climatic Change, 2013, 121, 431-444.	3.6	94
52	Compressed air energy storage (CAES) with compressors distributed at heat loads to enable waste heat utilization. Applied Energy, 2013, 103, 165-179.	10.1	158
53	End the Deadlock on Governance of Geoengineering Research. Science, 2013, 339, 1278-1279.	12.6	106
54	Are global wind power resource estimates overstated?. Environmental Research Letters, 2013, 8, 015021.	5.2	84

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55	Management of trade-offs in geoengineering through optimal choice of non-uniform radiative forcing. Nature Climate Change, 2013, 3, 365-368.	18.8	92
56	A Case for Climate Engineering. , 2013, , .		250
57	Effectiveness of stratospheric solar-radiation management as a function of climate sensitivity. Nature Climate Change, 2012, 2, 92-96.	18.8	22
58	The Fate of an Engineered Planet. Scientific American, 2012, 308, 34-36.	1.0	2
59	Cost analysis of stratospheric albedo modification delivery systems. Environmental Research Letters, 2012, 7, 034019.	5.2	128
60	An airâ€"liquid contactor for large-scale capture of CO ₂ from air. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 4380-4403.	3.4	119
61	Geomechanical modeling for CO2 storage in Nisku aquifer in Wabamun Lake area in Canada. International Journal of Greenhouse Gas Control, 2012, 10, 113-122.	4.6	53
62	A simple model to account for regional inequalities in the effectiveness of solar radiation management. Climatic Change, 2012, 110, 649-668.	3.6	90
63	Can we test geoengineering?. Energy and Environmental Science, 2011, 4, 5044.	30.8	47
64	LEED, Energy Savings, and Carbon Abatement: Related but Not Synonymous. Environmental Science & Technology, 2011, 45, 1757-1758.	10.0	9
65	Process design and costing of an air-contactor for air-capture. Energy Procedia, 2011, 4, 2861-2868.	1.8	12
66	Leakage detection and characterization through pressure monitoring. Energy Procedia, 2011, 4, 3534-3541.	1.8	20
67	Analytical models for determining pressure change in an overlying aquifer due to leakage. Energy Procedia, 2011, 4, 3833-3840.	1.8	14
68	Risk associated with H2S evolution in sour aquifers during CO2 injection. Energy Procedia, 2011, 4, 4117-4123.	1.8	5
69	The Wabamun Area Sequestration Project (WASP): A multidisciplinary study of gigaton scale CO2 storage in a deep saline carbonate aquifer. Energy Procedia, 2011, 4, 4793-4797.	1.8	1
70	Evolution of hydrogen sulfide in sour saline aquifers during carbon dioxide sequestration. International Journal of Greenhouse Gas Control, 2011, 5, 347-355.	4.6	20
71	Public understanding of solar radiation management. Environmental Research Letters, 2011, 6, 044006.	5.2	113
72	Research on global sun block needed now. Nature, 2010, 463, 426-427.	27.8	173

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73	Expert judgments about transient climate response to alternative future trajectories of radiative forcing. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 12451-12456.	7.1	71
74	Photophoretic levitation of engineered aerosols for geoengineering. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 16428-16431.	7.1	119
75	Efficient formation of stratospheric aerosol for climate engineering by emission of condensible vapor from aircraft. Geophysical Research Letters, 2010, 37, .	4.0	109
76	Land Use Greenhouse Gas Emissions from Conventional Oil Production and Oil Sands. Environmental Science & Technology, 2010, 44, 8766-8772.	10.0	76
77	The Truth About Dirty Oil: Is CCS the Answer?. Environmental Science & Technology, 2010, 44, 6010-6015.	10.0	14
78	Quantifying land use of oil sands production: a life cycle perspective. Environmental Research Letters, 2009, 4, 024004.	5.2	64
79	The effect of natural flow of aquifers and associated dispersion on the onset of buoyancyâ€driven convection in a saturated porous medium. AIChE Journal, 2009, 55, 475-485.	3.6	43
80	Anticipating public attitudes toward underground CO2 storage. International Journal of Greenhouse Gas Control, 2009, 3, 641-651.	4.6	65
81	Low-energy sodium hydroxide recovery for CO2 capture from atmospheric airâ€"Thermodynamic analysis. International Journal of Greenhouse Gas Control, 2009, 3, 376-384.	4.6	201
82	Analytical solution to evaluate salt precipitation during CO2 injection in saline aquifers. International Journal of Greenhouse Gas Control, 2009, 3, 600-611.	4.6	118
83	Low energy packed tower and caustic recovery for direct capture of CO2 from air. Energy Procedia, 2009, 1, 1535-1542.	1.8	60
84	Analytical Solution to Evaluate Salt Precipitation during CO2 Injection in Saline Aquifers. Energy Procedia, 2009, 1, 1775-1782.	1.8	14
85	An overview of the Wabamun Area CO2 Sequestration Project (WASP). Energy Procedia, 2009, 1, 2817-2824.	1.8	11
86	Feasibility of Injecting Large Volumes of CO2 into Aquifers. Energy Procedia, 2009, 1, 3113-3120.	1.8	40
87	Accelerating CO₂ Dissolution in Saline Aquifers for Geological Storage â€" Mechanistic and Sensitivity Studies. Energy & Fuels, 2009, 23, 3328-3336.	5.1	123
88	Why Capture CO ₂ from the Atmosphere?. Science, 2009, 325, 1654-1655.	12.6	594
89	Climate engineering responses to climate emergencies. IOP Conference Series: Earth and Environmental Science, 2009, 6, 452015.	0.3	15
90	Biomass with capture: negative emissions within social and environmental constraints: an editorial comment. Climatic Change, 2008, 87, 321-328.	3.6	47

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91	Assessing geochemical carbon management. Climatic Change, 2008, 90, 217-242.	3.6	39
92	Improving the way we think about projecting future energy use and emissions of carbon dioxide. Climatic Change, 2008, 90, 189-215.	3.6	110
93	Predicting PVT data for CO2â€"brine mixtures for black-oil simulation of CO2 geological storage. International Journal of Greenhouse Gas Control, 2008, 2, 65-77.	4.6	134
94	Carbon Dioxide Capture from Atmospheric Air Using Sodium Hydroxide Spray. Environmental Science & Technology, 2008, 42, 2728-2735.	10.0	331
95	Expert Assessments of Future Photovoltaic Technologies. Environmental Science & Technology, 2008, 42, 9031-9038.	10.0	102
96	Regulating the Geological Sequestration of CO₂. Environmental Science & Technology, 2008, 42, 2718-2722.	10.0	38
97	Reservoir Engineering To Accelerate the Dissolution of CO₂ Stored in Aquifers. Environmental Science & Technology, 2008, 42, 2742-2747.	10.0	122
98	On the Climate Impact of Surface Roughness Anomalies. Journals of the Atmospheric Sciences, 2008, 65, 2215-2234.	1.7	87
99	Carbon neutral hydrocarbons. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2008, 366, 3901-3918.	3.4	81
100	Carbon-cycle feedbacks increase the likelihood of a warmer future. Geophysical Research Letters, 2007, 34, .	4.0	17
101	Scaling behavior of convective mixing, with application to geological storage of CO2. AICHE Journal, 2007, 53, 1121-1131.	3.6	203
102	Expert judgements on the response of the Atlantic meridional overturning circulation to climate change. Climatic Change, 2007, 82, 235-265.	3.6	101
103	Carbon Capture Retrofits and the Cost of Regulatory Uncertainty. Energy Journal, 2007, 28, 101-128.	1.7	60
104	The economics of large-scale wind power in a carbon constrained world. Energy Policy, 2006, 34, 395-410.	8.8	193
105	Evaluation of potential cost reductions from improved amine-based CO2 capture systems. Energy Policy, 2006, 34, 3765-3772.	8.8	95
106	Stability of a fluid in a horizontal saturated porous layer: effect of non-linear concentration profile, initial, and boundary conditions. Transport in Porous Media, 2006, 65, 193-211.	2.6	132
107	Elicitation of Expert Judgments of Aerosol Forcing. Climatic Change, 2006, 75, 195-214.	3.6	75
108	Climate Strategy with Co2 Capture from the Air. Climatic Change, 2006, 74, 17-45.	3.6	369

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109	The Costs of Wind's Variability: Is There a Threshold?. Electricity Journal, 2005, 18, 69-77.	2.5	49
110	Engineering economic analysis of biomass IGCC with carbon capture and storage. Biomass and Bioenergy, 2005, 29, 440-450.	5.7	157
111	Using CaO- and MgO-rich industrial waste streams for carbon sequestration. Energy Conversion and Management, 2005, 46, 687-699.	9.2	167
112	Regulating the Underground Injection of CO2. Environmental Science & Technology, 2005, 39, 499A-505A.	10.0	22
113	The influence of large-scale wind power on global climate. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 16115-16120.	7.1	255
114	Initial Public Perceptions of Deep Geological and Oceanic Disposal of Carbon Dioxide. Environmental Science & Technology, 2004, 38, 6441-6450.	10.0	149
115	Fossil electricity and CO2 sequestration: how natural gas prices, initial conditions and retrofits determine the cost of controlling CO2 emissions. Energy Policy, 2004, 32, 367-382.	8.8	70
116	Carbon storage: the economic efficiency of storing CO2 in leaky reservoirs. , 2004, , 165-182.		1
117	Carbon storage: the economic efficiency of storing CO 2 in leaky reservoirs. Clean Technologies and Environmental Policy, 2003, 5, 181-189.	4.1	61
118	A strategy for introducing hydrogen into transportation. Energy Policy, 2003, 31, 1357-1367.	8.8	119
119	Regulating the Ultimate Sink:Â Managing the Risks of Geologic CO2Storage. Environmental Science & Technology, 2003, 37, 3476-3483.	10.0	138
120	Assessment of Potential Carbon Dioxide Reductions Due to Biomassâ˘Coal Cofiring in the United States. Environmental Science & Technology, 2003, 37, 5081-5089.	10.0	79
121	ENVIRONMENTAL SCIENCE: Enhanced: Rethinking Hydrogen Cars. Science, 2003, 301, 315-316.	12.6	65
122	Bury, Burn or Both: A Two-for-One Deal on Biomass Carbon and Energy. Climatic Change, 2002, 54, 375-377.	3.6	14
123	The Real Cost of Wind Energy. Science, 2001, 294, 1000-1003.	12.6	13
124	Airborne interferometer for atmospheric emission and solar absorption. Applied Optics, 2001, 40, 5463.	2.1	7
125	Accurate Spectrally Resolved Infrared Radiance Observation from Space: Implications for the Detection of Decade-to-Centuryâ€"Scale Climatic Change. Journal of Climate, 2001, 14, 979-990.	3.2	21
126	Electricity from Fossil Fuels without CO2Emissions: Assessing the Costs of Carbon Dioxide Capture and Sequestration in U.S. Electricity Markets. Journal of the Air and Waste Management Association, 2001, 51, 1452-1459.	1.9	12

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127	Hydrogen as a Transportation Fuel. Environment, 2001, 43, 43-45.	1.4	5
128	Sinks, Energy Crops and Land Use: Coherent Climate Policy Demands an Integrated Analysis of Biomass. Climatic Change, 2001, 49, 1-10.	3.6	28
129	Geoengineering. Nature, 2001, 409, 420-420.	27.8	63
130	GEOENGINEERING THECLIMATE: History and Prospect. Annual Review of Environment and Resources, 2000, 25, 245-284.	1.2	449
131	Stratosphere-troposphere exchange: Inferences from the isotopic composition of water vapor. Journal of Geophysical Research, 2000, 105, 15167-15173.	3.3	58
132	The effect of climate change on ozone depletion through changes in stratospheric water vapour. Nature, 1999, 402, 399-401.	27.8	193
133	CLIMATE CHANGE:Fossil Fuels Without CO2 Emissions. , 1998, 282, 1053-1054.		131
134	When is it appropriate to combine expert judgments?. Climatic Change, 1996, 33, 139-143.	3.6	69
135	Meridional energy transport: uncertainty in zonal means. Tellus, Series A: Dynamic Meteorology and Oceanography, 1995, 47, 30-44.	1.7	27
136	Subjective Judgments by Climate Experts. Environmental Science & Technology, 1995, 29, 468A-476A.	10.0	143
137	Subjective judgements by climate experts. Environmental Science & Technology, 1995, 29, 468A-476A.	10.0	110
138	A serious look at geoengineering. Eos, 1992, 73, 289-289.	0.1	81
139	Numerical model of a multiple-grating interferometer. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1992, 9, 1601.	1.5	11
140	Atom optics using microfabricated structures. Applied Physics B, Photophysics and Laser Chemistry, 1992, 54, 369-374.	1.5	29
141	An interferometer for atoms. Physical Review Letters, 1991, 66, 2693-2696.	7.8	487
142	Free-standing gratings and lenses for atom optics. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1991, 9, 2846.	1.6	23
143	Diffraction of Atoms by a Transmission Grating. Physical Review Letters, 1988, 61, 1580-1583.	7.8	175
144	An Economic Anatomy of Optimal Climate Policy. SSRN Electronic Journal, 0, , .	0.4	5