Douglas G Macmartin

List of Publications by Year
in descending order

134	3,505	156536	198040
papers	citations	32 h-index	52 g-index

161	161	161	1995
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	How large is the design space for stratospheric aerosol geoengineering?. Earth System Dynamics, 2022, 13, 201-217.	2.7	10
2	Limitations of assuming internal mixing between different aerosol species: a case study with sulfate geoengineering simulations. Atmospheric Chemistry and Physics, 2022, 22, 1739-1756.	1.9	6
3	â€˜Bog here, marshland thereâ€™: tensions in co-producing scientific knowledge on solar geoengineering in the Arctic. Environmental Research Letters, 2022, 17, 045001.	2.2	3
4	Changes in Hadley circulation and intertropical convergence zone under strategic stratospheric aerosol geoengineering. Npj Climate and Atmospheric Science, 2022, 5, .	2.6	14
5	Management of equipment vibration for extremely large telescopes. Journal of Astronomical Telescopes, Instruments, and Systems, 2022, 8, .	1.0	0
6	The Overlooked Role of the Stratosphere Under a Solar Constant Reduction. Geophysical Research Letters, 2022, 49, .	1.5	4
7	Comparing different generations of idealized solar geoengineering simulations in the Geoengineering Model Intercomparison Project (GeoMIP). Atmospheric Chemistry and Physics, 2021, 21, 4231-4247.	1.9	22
8	Is Turning Down the Sun a Good Proxy for Stratospheric Sulfate Geoengineering?. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD033952.	1.2	33
9	Highâ€Łatitude Stratospheric Aerosol Geoengineering Can Be More Effective if Injection Is Limited to Spring. Geophysical Research Letters, 2021, 48, e2021GL092696.	1.5	26
10	Harnessing stratospheric diffusion barriers for enhanced climate geoengineering. Atmospheric Chemistry and Physics, 2021, 21, 8845-8861.	1.9	3
11	Identifying the sources of uncertainty in climate model simulations of solar radiation modification with the G6sulfur and G6solar Geoengineering Model Intercomparison Project (GeoMIP) simulations. Atmospheric Chemistry and Physics, 2021, 21, 10039-10063.	1.9	45
12	Sensitivity of Total Column Ozone to Stratospheric Sulfur Injection Strategies. Geophysical Research Letters, 2021, 48, e2021GL094058.	1.5	13
13	Characteristics of a Solar Geoengineering Deployment: Considerations for Governance. AESS Interdisciplinary Environmental Studies and Sciences Series, 2021, , 15-32.	0.2	1
14	Developing a framework for an interdisciplinary and international climate intervention strategies research program. Bulletin of the American Meteorological Society, 2021, , 1-17.	1.7	0
15	Potential impacts of stratospheric aerosol injection on drought risk managements over major river basins in Africa. Climatic Change, 2021, 169, 1.	1.7	18
16	Reduced Poleward Transport Due to Stratospheric Heating Under Stratospheric Aerosols Geoengineering. Geophysical Research Letters, 2020, 47, e2020GL089470.	1.5	32
17	Seasonally Modulated Stratospheric Aerosol Geoengineering Alters the Climate Outcomes. Geophysical Research Letters, 2020, 47, e2020GL088337.	1.5	27
18	Climate econometric models indicate solar geoengineering would reduce inter-country income inequality. Nature Communications, 2020, 11, 227.	5.8	31

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19	Uncertainty and the basis for confidence in solar geoengineering research. Nature Reviews Earth & Environment, 2020, 1, 64-75.	12.2	33
20	What goes up must come down: impacts of deposition in a sulfate geoengineering scenario. Environmental Research Letters, 2020, 15, 094063.	2.2	15
21	Assessing terrestrial biogeochemical feedbacks in a strategically geoengineered climate. Environmental Research Letters, 2020, 15, 104043.	2.2	8
22	Expanding the design space of stratospheric aerosol geoengineering to include precipitation-based objectives and explore trade-offs. Earth System Dynamics, 2020, 11, 1051-1072.	2.7	22
23	Reaching 1.5 and 2.0â€‰Â°C global surface temperature targets using stratospheric aerosol geoengineering. Earth System Dynamics, 2020, 11, 579-601.	2.7	50
24	An update on engineering issues concerning stratospheric aerosol injection for geoengineering. Environmental Research Communications, 2020, 2, 082001.	0.9	5
25	The Road toward Process-Level Understanding of Solar Geoengineering through a Multimodel Intercomparison. Bulletin of the American Meteorological Society, 2020, 101, E1572-E1575.	1.7	1
26	Seasonal Injection Strategies for Stratospheric Aerosol Geoengineering. Geophysical Research Letters, 2019, 46, 7790-7799.	1.5	29
27	Soil Moisture and Other Hydrological Changes in a Stratospheric Aerosol Geoengineering Large Ensemble. Journal of Geophysical Research D: Atmospheres, 2019, 124, 12773-12793.	1.2	38
28	Technical characteristics of a solar geoengineering deployment and implications for governance. Climate Policy, 2019, 19, 1325-1339.	2.6	17
29	Comparing Surface and Stratospheric Impacts of Geoengineering With Different SO₂ Injection Strategies. Journal of Geophysical Research D: Atmospheres, 2019, 124, 7900-7918.	1.2	56
30	Timescale for Detecting the Climate Response to Stratospheric Aerosol Geoengineering. Journal of Geophysical Research D: Atmospheres, 2019, 124, 1233-1247.	1.2	34
31	The Regional Hydroclimate Response to Stratospheric Sulfate Geoengineering and the Role of Stratospheric Heating. Journal of Geophysical Research D: Atmospheres, 2019, 124, 12587-12616.	1.2	73
32	Stratospheric Sulfate Aerosol Geoengineering Could Alter the Highâ€Latitude Seasonal Cycle. Geophysical Research Letters, 2019, 46, 14153-14163.	1.5	40
33	Mission-driven research for stratospheric aerosol geoengineering. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 1089-1094.	3.3	37
34	Holistic Assessment of SO 2 Injections Using CESM1(WACCM): Introduction to the Special Issue. Journal of Geophysical Research D: Atmospheres, 2019, 124, 444-450.	1.2	2
35	The Engineering of Climate Engineering. Annual Review of Control, Robotics, and Autonomous Systems, 2019, 2, 445-467.	7.5	36
36	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.	1.6	103

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37	Response of Surface Ultraviolet and Visible Radiation to Stratospheric SO2 Injections. Atmosphere, 2018, 9, 432.	1.0	17
38	CESM1(WACCM) Stratospheric Aerosol Geoengineering Large Ensemble Project. Bulletin of the American Meteorological Society, 2018, 99, 2361-2371.	1.7	129
39	Effects of Different Stratospheric SO₂ Injection Altitudes on Stratospheric Chemistry and Dynamics. Journal of Geophysical Research D: Atmospheres, 2018, 123, 4654-4673.	1.2	58
40	Stratospheric Response in the First Geoengineering Simulation Meeting Multiple Surface Climate Objectives. Journal of Geophysical Research D: Atmospheres, 2018, 123, 5762-5782.	1.2	17
41	Persistent polar ocean warming in a strategically geoengineered climate. Nature Geoscience, 2018, 11, 910-914.	5.4	29
42	Minimizing motor cogging and vibration for the Thirty Meter Telescope. , 2017, , .		0
43	The Climate Response to Stratospheric Aerosol Geoengineering Can Be Tailored Using Multiple Injection Locations. Journal of Geophysical Research D: Atmospheres, 2017, 122, 12,574.	1.2	95
44	First Simulations of Designing Stratospheric Sulfate Aerosol Geoengineering to Meet Multiple Simultaneous Climate Objectives. Journal of Geophysical Research D: Atmospheres, 2017, 122, 12,616.	1.2	114
45	Sensitivity of Aerosol Distribution and Climate Response to Stratospheric SO₂ Injection Locations. Journal of Geophysical Research D: Atmospheres, 2017, 122, 12,591.	1.2	79
46	Stratospheric Dynamical Response and Ozone Feedbacks in the Presence of SO₂ Injections. Journal of Geophysical Research D: Atmospheres, 2017, 122, 12,557.	1.2	69
47	Radiative and Chemical Response to Interactive Stratospheric Sulfate Aerosols in Fully Coupled CESM1(WACCM). Journal of Geophysical Research D: Atmospheres, 2017, 122, 13,061.	1.2	128
48	Technical note: Simultaneous fully dynamic characterization of multiple inputâ€“output relationships in climate models. Atmospheric Chemistry and Physics, 2017, 17, 2525-2541.	1.9	3
49	Constraints on global temperature target overshoot. Scientific Reports, 2017, 7, 14743.	1.6	34
50	Geoengineering as a design problem. Earth System Dynamics, 2016, 7, 469-497.	2.7	96
51	Geoengineering with stratospheric aerosols: What do we not know after a decade of research?. Earth's Future, 2016, 4, 543-548.	2.4	35
52	Dynamic climate emulators for solar geoengineering. Atmospheric Chemistry and Physics, 2016, 16, 15789-15799.	1.9	26
53	Suppression of Atlantic Meridional Overturning Circulation Variability at Increased CO2. Journal of Climate, 2016, 29, 4155-4164.	1.2	12
54	On solar geoengineering and climate uncertainty. Geophysical Research Letters, 2015, 42, 7156-7161.	1.5	16

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55	A New Method of Comparing Forcing Agents in Climate Models*. Journal of Climate, 2015, 28, 8203-8218.	1.2	18
56	Impacts of ocean albedo alteration on Arctic sea ice restoration and Northern Hemisphere climate. Environmental Research Letters, 2015, 10, 044020.	2.2	20
57	Vibration budget for observatory equipment. Journal of Astronomical Telescopes, Instruments, and Systems, 2015, 1, 034005.	1.0	5
58	A temporary, moderate and responsive scenario for solar geoengineering. Nature Climate Change, 2015, 5, 201-206.	8.1	104
59	Process-based analysis of climate model ENSO simulations: Intermodel consistency and compensating errors. Journal of Geophysical Research D: Atmospheres, 2014, 119, 7396-7409.	1.2	6
60	A multi-model assessment of regional climate disparities caused by solar geoengineering. Environmental Research Letters, 2014, 9, 074013.	2.2	101
61	Measuring transmission and forces from observatory equipment vibration. , 2014, , .		2
62	Equipment vibration budget for the TMT. Proceedings of SPIE, 2014, , .	0.8	2
63	Geoengineering: The world's largest control problem. , 2014, , .		6
64	Solar geoengineering to limit the rate of temperature change. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20140134.	1.6	61
65	Explicit feedback and the management of uncertainty in meeting climate objectives with solar geoengineering. Environmental Research Letters, 2014, 9, 044006.	2.2	35
66	Using transfer functions to quantify El NiÃ±o Southern Oscillation dynamics in data and models. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2014, 470, 20140272.	1.0	7
67	Dynamics of the coupled humanâ€“climate system resulting from closed-loop control of solar geoengineering. Climate Dynamics, 2014, 43, 243-258.	1.7	71
68	Dynamic Analysis of the Actively-Controlled Segmented Mirror of the Thirty Meter Telescope. IEEE Transactions on Control Systems Technology, 2014, 22, 58-68.	3.2	9
69	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.	1.6	66
70	Systems engineering of the Thirty Meter Telescope for the construction phase. Proceedings of SPIE, 2014, , .	0.8	2
71	Unsteady wind loads for TMT: replacing parametric models with CFD. , 2014, , .		3
72	Real time wavefront control system for the Large Synoptic Survey Telescope (LSST). Proceedings of SPIE, 2014, , .	0.8	4

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73	Studying geoengineering with natural and anthropogenic analogs. Climatic Change, 2013, 121, 445-458.	1.7	76
74	A robust model predictive control algorithm augmented with a reactive safety mode. Automatica, 2013, 49, 1251-1260.	3.0	27
75	Frequency Domain Multimodel Analysis of the Response of Atlantic Meridional Overturning Circulation to Surface Forcing. Journal of Climate, 2013, 26, 8323-8340.	1.2	20
76	Management of trade-offs in geoengineering through optimal choice of non-uniform radiative forcing. Nature Climate Change, 2013, 3, 365-368.	8.1	92
77	Suppressing low-order eigenmodes with local control for deformable mirrors. Optical Engineering, 2012, 51, 026601.	0.5	6
78	In-plane effects on segmented-mirror control. Applied Optics, 2012, 51, 1929.	0.9	6
79	Concept, modeling, and performance prediction of a low-cost, large deformable mirror. Applied Optics, 2012, 51, 515.	0.9	9
80	Control of a Hypersegmented Space Telescope. Journal of Guidance, Control, and Dynamics, 2012, 35, 861-867.	1.6	1
81	Distributed control of large deformable mirrors. Proceedings of SPIE, 2012, , .	0.8	1
82	Geoengineering: Whiter skies?. Geophysical Research Letters, 2012, 39, .	1.5	23
83	Can we test geoengineering?. Energy and Environmental Science, 2011, 4, 5044.	15.6	47
84	Distributed Force Control of Deformable Mirrors. European Journal of Control, 2011, 17, 249-260.	1.6	10
85	The frequency response of temperature and precipitation in a climate model. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	40
86	Integrated modeling of a laboratory setup for a large deformable mirror. , 2011, , .		0
87	Control system modeling for the Thirty Meter Telescope primary mirror. , 2011, , .		3
88	Feedback control of vortex shedding from an inclined flat plate. Theoretical and Computational Fluid Dynamics, 2011, 25, 221-232.	0.9	9
89	Servo design and analysis for the Thirty Meter Telescope primary mirror actuators. , 2010, , .		6
90	Progress in developing a low-cost deformable mirror. , 2010, , .		1

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91	Testing and improving ENSO models by process using transfer functions. Geophysical Research Letters, 2010, 37, .	1.5	12
92	Wind buffeting of large telescopes. Applied Optics, 2010, 49, 625.	2.1	21
93	Interaction matrix uncertainty in active (and adaptive) optics. Applied Optics, 2009, 48, 2105.	2.1	9
94	Experimental validation of single-iteration multigrid wavefront reconstruction at the Palomar Observatory. Optics Letters, 2008, 33, 2047.	1.7	3
95	Warm-started wavefront reconstruction for adaptive optics. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2008, 25, 1147.	0.8	20
96	TMT telescope structure system: design and development progress report. Proceedings of SPIE, 2008, , .	0.8	12
97	Factors Affecting ENSOâ€™s Period. Journals of the Atmospheric Sciences, 2008, 65, 1570-1586.	0.6	51
98	Analysis of TMT primary mirror control-structure interaction. Proceedings of SPIE, 2008, , .	0.8	13
99	Applying engineering feedback analysis tools to climate dynamics. , 2008, , .		0
100	Dynamic analysis of TMT. , 2008, , .		10
101	Finite element analysis of TMT vibrations transmitted through Telescope-Enclosure-Soil Interaction. Proceedings of SPIE, 2008, , .	0.8	3
102	Control analysis of the TMT primary segment assembly. Proceedings of SPIE, 2008, , .	0.8	9
103	Optimal nonlinear guidance with inner-loop feedback for hypersonic re-entry. , 2006, , .		8
104	Linear models for control of cavity flow oscillations. Journal of Fluid Mechanics, 2006, 547, 317.	1.4	96
105	Modeling wind-buffeting of the Thirty Meter Telescope. , 2006, , .		3
106	Wind loads on ground-based telescopes. Applied Optics, 2006, 45, 7912.	2.1	26
107	Two-Way Feedback Interaction between the Thermohaline and Wind-Driven Circulations. Journal of Physical Oceanography, 2006, 36, 914-929.	0.7	6
108	Buffeting of large telescopes: Wind-tunnel measurements of the flow inside a generic enclosure. Journal of Fluids and Structures, 2006, 22, 3-19.	1.5	8

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109	System for computationally efficient adaptation of active control of sound or vibration. Journal of the Acoustical Society of America, 2006, 120, 575.	0.5	0
110	Hierarchic Estimation for Control of Segmented-Mirror Telescopes. Journal of Guidance, Control, and Dynamics, 2005, 28, 1072-1076.	1.6	5
111	Parametric modeling and control of telescope wind-induced vibration. , 2004, 5497, 266.		10
112	Dynamics and Control of Shock Motion in a Near-Isentropic Inlet. Journal of Aircraft, 2004, 41, 846-853.	1.7	51
113	Closed-loop Control of Vortex Shedding in a Separated Diffuser Using an Inverse Method. , 2004, , .		1
114	Measurement accuracy in control of segmented-mirror telescopes. Applied Optics, 2004, 43, 608.	2.1	20
115	Control and alignment of segmented-mirror telescopes: matrices, modes, and error propagation. Applied Optics, 2004, 43, 1223.	2.1	48
116	Modeling tools to estimate the performance of the Thirty Meter Telescope: an integrated approach. , 2004, 5497, 237.		7
117	Wind tunnel testing of a generic telescope enclosure. , 2004, 5495, 270.		5
118	Local, hierarchic, and iterative reconstructors for adaptive optics. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2003, 20, 1084.	0.8	17
119	Dynamic Separation Control in Low-Speed Diffuser with Varying Downstream Boundary Condition. , 2003, , .		2
120	Inverse Technique for Vortex Imaging and Its Application to Feedback Flow Control. , 2003, , .		5
121	Control of the California Extremely Large Telescope primary mirror. , 2003, 4840, 69.		11
122	Sparse-matrix wavefront reconstruction: simulations and experiments. , 2003, , .		6
123	Control challenges for extremely large telescopes. , 2003, 5054, 275.		7
124	Advanced Segmented Silicon Space Telescope (ASSiST). , 2002, 4849, 103.		2
125	Flow control opportunities in gas turbine engines. , 2000, , .		70
126	COLLOCATED STRUCTURAL CONTROL FOR REDUCTION OF AIRCRAFT CABIN NOISE. Journal of Sound and Vibration, 1996, 190, 105-119.	2.1	18

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127	AIRCRAFT FUSELAGE NOISE TRANSMISSION MEASUREMENTS USING A RECIPROCITY TECHNIQUE. Journal of Sound and Vibration, 1995, 187, 467-483.	2.1	4
128	Robust control design and implementation on the Middeck Active Control Experiment. Journal of Guidance, Control, and Dynamics, 1994, 17, 1163-1170.	1.6	30
129	Broadband control of flexible structures using statistical energy analysis concepts. Journal of Guidance, Control, and Dynamics, 1994, 17, 361-369.	1.6	12
130	Covariance averaging in the analysis of uncertain systems. IEEE Transactions on Automatic Control, 1993, 38, 1858-1862.	3.6	10
131	<title>MIT Middeck Active Control Experiment (MACE): noncollocated payload pointing control</title>. , 1993, , .		0
132	Structural control experiments using an âˆž power flow approach. Journal of Sound and Vibration, 1991, 148, 223-241.	2.1	10
133	Control of uncertain structures using an H(infinity) power flow approach. Journal of Guidance, Control, and Dynamics, 1991, 14, 521-530.	1.6	66
134	Collocated structural control: motivation and methodology. , 0, , .		5