Michael McElroy

List of Publications by Year
in descending order

57 papers	4,086 citations	126907 33 h-index	149698 56 g-index
58 all docs	58 docs citations	58 times ranked	4362 citing authors

#	Article	IF	Citations
1	Global potential for wind-generated electricity. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 10933-10938.	7.1	410
2	Isotopic composition of atmospheric CO2 inferred from carbon in C4 plant cellulose. Nature, 1991, 349, 127-131.	27.8	395
3	Chinaâ€™s CO2 peak before 2030 implied from characteristics and growth of cities. Nature Sustainability, 2019, 2, 748-754.	23.7	210
4	Glacial-to-interglacial variations in the carbon isotopic composition of atmospheric CO2. Nature, 1992, 357, 461-466.	27.8	207
5	Reducing curtailment of wind electricity in China by employing electric boilers for heat and pumped hydro for energy storage. Applied Energy, 2016, 184, 987-994.	10.1	186
6	Potential for Wind-Generated Electricity in China. Science, 2009, 325, 1378-1380.	12.6	163
7	Challenges faced by China compared with the US in developing wind power. Nature Energy, 2016, 1, .	39.5	153
8	A 3-D model analysis of the slowdown and interannual variability in the methane growth rate from 1988 to 1997. Global Biogeochemical Cycles, 2004, 18, n/a-n/a.	4.9	147
9	Prospective contributions of biomass pyrolysis to Chinaâ€™s 2050 carbon reduction and renewable energy goals. Nature Communications, 2021, 12, 1698.	12.8	146
10	Trade-driven relocation of air pollution and health impacts in China. Nature Communications, 2017, 8, 738.	12.8	129
11	Antarctic O₃: Chemical mechanisms for the spring decrease. Geophysical Research Letters, 1986, 13, 1296-1299.	4.0	127
12	Power System Capacity Expansion Under Higher Penetration of Renewables Considering Flexibility Constraints and Low Carbon Policies. IEEE Transactions on Power Systems, 2018, 33, 6240-6253.	6.5	127
13	The impact of power generation emissions on ambient PM2.5 pollution and human health in China and India. Environment International, 2018, 121, 250-259.	10.0	111
14	Impacts of fleet types and charging modes for electric vehicles on emissions under different penetrations of wind power. Nature Energy, 2018, 3, 413-421.	39.5	102
15	Seasonal variability of NOxemissions over east China constrained by satellite observations: Implications for combustion and microbial sources. Journal of Geophysical Research, 2007, 112, .	3.3	97
16	Source apportionment of atmospheric mercury pollution in China using the GEOS-Chem model. Environmental Pollution, 2014, 190, 166-175.	7.5	78
17	Gasification of coal and biomass as a net carbon-negative power source for environment-friendly electricity generation in China. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 8206-8213.	7.1	78
18	Prospects for shale gas production in China: Implications for water demand. Renewable and Sustainable Energy Reviews, 2016, 66, 742-750.	16.4	75

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19	Combined solar power and storage as cost-competitive and grid-compatible supply for Chinaâ€™s future carbon-neutral electricity system. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	70
20	The Potential of Photovoltaics to Power the Belt and Road Initiative. Joule, 2019, 3, 1895-1912.	24.0	66
21	Loss of ozone in the Arctic vortex for the winter of 1989. Geophysical Research Letters, 1990, 17, 561-564.	4.0	65
22	Traffic restrictions associated with the Sino-African summit: Reductions of NOxdetected from space. Geophysical Research Letters, 2007, 34, .	4.0	63
23	Indiaâ€™s potential for integrating solar and on- and offshore wind power into its energy system. Nature Communications, 2020, 11, 4750.	12.8	63
24	Offshore wind: An opportunity for cost-competitive decarbonization of Chinaâ€™s energy economy. Science Advances, 2020, 6, eaax9571.	10.3	62
25	Transition towards higher penetration of renewables: an overview of interlinked technical, environmental and socio-economic challenges. Journal of Modern Power Systems and Clean Energy, 2019, 7, 1-8.	5.4	60
26	Thermodynamic Modeling Suggests Declines in Water Uptake and Acidity of Inorganic Aerosols in Beijing Winter Haze Events during 2014/2015â€“2018/2019. Environmental Science and Technology Letters, 2019, 6, 752-760.	8.7	56
27	China's emission control strategies have suppressed unfavorable influences of climate on wintertime PM_{2.5} concentrations in Beijing since 2002. Atmospheric Chemistry and Physics, 2020, 20, 1497-1505.	4.9	47
28	Production of hydrogen from offshore wind in China and cost-competitive supply to Japan. Nature Communications, 2021, 12, 6953.	12.8	47
29	Contribution of Particulate Nitrate Photolysis to Heterogeneous Sulfate Formation for Winter Haze in China. Environmental Science and Technology Letters, 2020, 7, 632-638.	8.7	43
30	Integrated Energy Systems for Higher Wind Penetration in China: Formulation, Implementation and Impacts. IEEE Transactions on Power Systems, 2017, , 1-1.	6.5	38
31	Economic and Climate Benefits of Electric Vehicles in China, the United States, and Germany. Environmental Science & Technology, 2019, 53, 11013-11022.	10.0	38
32	Influence of polar stratospheric clouds on the depletion of Antarctic ozone. Geophysical Research Letters, 1988, 15, 871-874.	4.0	35
33	Wind-generated Electricity in China: Decreasing Potential, Inter-annual Variability and Association with Changing Climate. Scientific Reports, 2017, 7, 16294.	3.3	34
34	A quantitative assessment of uncertainties affecting estimates of global mean OH derived from methyl chloroform observations. Journal of Geophysical Research, 2008, 113, .	3.3	30
35	A Reinforcement Learning-Based Decision System for Electricity Pricing Plan Selection by Smart Grid End Users. IEEE Transactions on Smart Grid, 2021, 12, 2176-2187.	9.0	30
36	Secular decrease of wind power potential in India associated with warming in the Indian Ocean. Science Advances, 2018, 4, eaat5256.	10.3	28

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37	Modeling formulation and validation for accelerated simulation and flexibility assessment on large scale power systems under higher renewable penetrations. Applied Energy, 2019, 237, 145-154.	10.1	28
38	Synergies of Wind Power and Electrified Space Heating: Case Study for Beijing. Environmental Science & Technology, 2014, 48, 2016-2024.	10.0	27
39	Seasonal prediction of Indian wintertime aerosol pollution using the ocean memory effect. Science Advances, 2019, 5, eaav4157.	10.3	26
40	Human and animal wastes: Implications for atmospheric N2O and NOx. Global Biogeochemical Cycles, 2005, 19, n/a-n/a.	4.9	18
41	Costs for Integrating Wind into the Future ERCOT System with Related Costs for Savings in CO₂ Emissions. Environmental Science & Technology, 2011, 45, 3160-3166.	10.0	18
42	On the contribution of anthropogenic Cl to the increase in Î´13C of atmospheric methane. Global Biogeochemical Cycles, 2002, 16, 20-1-20-11.	4.9	16
43	Contributions of the Hadley and Ferrel Circulations to the Energetics of the Atmosphere over the Past 32 Years*. Journal of Climate, 2014, 27, 2656-2666.	3.2	16
44	Opportunity for Offshore Wind to Reduce Future Demand for Coal-Fired Power Plants in China with Consequent Savings in Emissions of CO₂. Environmental Science & Technology, 2014, 48, 14764-14771.	10.0	16
45	Projected global demand for air conditioning associated with extreme heat and implications for electricity grids in poorer countries. Energy and Buildings, 2022, 268, 112198.	6.7	16
46	Opportunities for household energy on the Qinghai-Tibet Plateau in line with United Nationsâ€™ Sustainable Development Goals. Renewable and Sustainable Energy Reviews, 2021, 144, 110982.	16.4	14
47	Sensitivity of modeled Indian monsoon to Chinese and Indian aerosol emissions. Atmospheric Chemistry and Physics, 2021, 21, 3593-3605.	4.9	13
48	Year round measurements of O3 and CO at a rural site near Beijing: variations in their correlations. Tellus, Series B: Chemical and Physical Meteorology, 2010, 62, 228-241.	1.6	11
49	Effects of atmospheric transport on column abundances of nitrogen and chlorine compounds in the Arctic stratosphere. Geophysical Research Letters, 1990, 17, 533-536.	4.0	9
50	Data visualization in smart grid and <scp>lowâ€carbon</scp> energy systems: A review. International Transactions on Electrical Energy Systems, 2021, 31, e12889.	1.9	9
51	Projected changes in seasonal and extreme summertime temperature and precipitation in India in response to COVID-19 recovery emissions scenarios. Environmental Research Letters, 2021, 16, 114025.	5.2	9
52	The contemporary and historical budget of atmospheric CO21This article is part of a Special Issue that honours the work of Dr. Donald M. Hunten FRSC who passed away in December 2010 after a very illustrious career.. Canadian Journal of Physics, 2012, 90, 707-716.	1.1	6
53	Challenge of global climate change: Prospects for a new energy paradigm. Frontiers of Environmental Science and Engineering in China, 2010, 4, 2-11.	0.8	5
54	Thermodynamic disequilibrium of the atmosphere in the context of global warming. Climate Dynamics, 2015, 45, 3513-3525.	3.8	5

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55	Grid integration of solar power in northwest China. , 2016, , .		3
56	SoC threshold optimization for battery storage in frequency regulation considering uncertainty of SoC measurement and automatic generation control fatigue loss of thermal power system. International Journal of Electrical Power and Energy Systems, 2022, 137, 107771.	5.5	3
57	Historical and Future Roles of Internal Atmospheric Variability in Modulating Summertime Greenland Ice Sheet Melt. Geophysical Research Letters, 2020, 47, e2019GL086913.	4.0	2