Katherine Calvin

List of Publications by Year
in descending order

134 papers	19,113 citations	24978 57 h-index	12910 131 g-index
158 all docs	158 docs citations	158 times ranked	18523 citing authors

#	Article	IF	Citations
1	The Shared Socioeconomic Pathways and their energy, land use, and greenhouse gas emissions implications: An overview. Global Environmental Change, 2017, 42, 153-168.	3.6	2,966
2	The RCP greenhouse gas concentrations and their extensions from 1765 to 2300. Climatic Change, 2011, 109, 213-241.	1.7	2,948
3	RCP4.5: a pathway for stabilization of radiative forcing by 2100. Climatic Change, 2011, 109, 77-94.	1.7	1,238
4	Scenarios towards limiting global mean temperature increase below 1.5 Â°C. Nature Climate Change, 2018, 8, 325-332.	8.1	795
5	Implications of Limiting CO ₂ Concentrations for Land Use and Energy. Science, 2009, 324, 1183-1186.	6.0	778
6	Land-use futures in the shared socio-economic pathways. Global Environmental Change, 2017, 42, 331-345.	3.6	645
7	Global emissions pathways under different socioeconomic scenarios for use in CMIP6: a dataset of harmonized emissions trajectories through the end of the century. Geoscientific Model Development, 2019, 12, 1443-1475.	1.3	496
8	Global cost estimates of reducing carbon emissions through avoided deforestation. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 10302-10307.	3.3	442
9	Fossil-fueled development (SSP5): An energy and resource intensive scenario for the 21st century. Global Environmental Change, 2017, 42, 297-315.	3.6	418
10	Harmonization of global land use change and management for the period 850â€"2100 (LUH2) for CMIP6. Geoscientific Model Development, 2020, 13, 5425-5464.	1.3	408
11	The Land Use Model Intercomparison Project (LUMIP) contribution to CMIP6: rationale and experimental design. Geoscientific Model Development, 2016, 9, 2973-2998.	1.3	343
12	Future air pollution in the Shared Socio-economic Pathways. Global Environmental Change, 2017, 42, 346-358.	3.6	277
13	The SSP4: A world of deepening inequality. Global Environmental Change, 2017, 42, 284-296.	3.6	265
14	Shared Socio-Economic Pathways of the Energy Sector â€" Quantifying the Narratives. Global Environmental Change, 2017, 42, 316-330.	3.6	247
15	GCAM v5.1: representing the linkages between energy, water, land, climate, and economic systems. Geoscientific Model Development, 2019, 12, 677-698.	1.3	211
16	Why do global long-term scenarios for agriculture differ? An overview of the AgMIP Global Economic Model Intercomparison. Agricultural Economics (United Kingdom), 2014, 45, 3-20.	2.0	183
17	Land-Management Options for Greenhouse Gas Removal and Their Impacts on Ecosystem Services and the Sustainable Development Goals. Annual Review of Environment and Resources, 2019, 44, 255-286.	5.6	181
18	The role of renewable energy in climate stabilization: results from the EMF27 scenarios. Climatic Change, 2014, 123, 427-441.	1.7	179

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19	Agriculture and climate change in global scenarios: why don't the models agree. Agricultural Economics (United Kingdom), 2014, 45, 85-101.	2.0	172
20	Hotspots of uncertainty in landâ€use and landâ€cover change projections: a globalâ€scale model comparison. Global Change Biology, 2016, 22, 3967-3983.	4.2	171
21	Which practices coâ€deliver food security, climate change mitigation and adaptation, and combat land degradation and desertification?. Global Change Biology, 2020, 26, 1532-1575.	4.2	164
22	Long-term global water projections using six socioeconomic scenarios in an integrated assessment modeling framework. Technological Forecasting and Social Change, 2014, 81, 205-226.	6.2	159
23	Post-2020 climate agreements in the major economies assessed in the light of global models. Nature Climate Change, 2015, 5, 119-126.	8.1	158
24	Bioenergy in energy transformation and climate management. Climatic Change, 2014, 123, 477-493.	1.7	154
25	Near-term acceleration in the rate of temperature change. Nature Climate Change, 2015, 5, 333-336.	8.1	151
26	Land-use transition for bioenergy and climate stabilization: model comparison of drivers, impacts and interactions with other land use based mitigation options. Climatic Change, 2014, 123, 495-509.	1.7	140
27	A comprehensive view of global potential for hydro-generated electricity. Energy and Environmental Science, 2015, 8, 2622-2633.	15.6	129
28	The role of Asia in mitigating climate change: Results from the Asia modeling exercise. Energy Economics, 2012, 34, S251-S260.	5.6	126
29	Fossil resource and energy security dynamics in conventional and carbon-constrained worlds. Climatic Change, 2014, 123, 413-426.	1.7	123
30	Key determinants of global land-use projections. Nature Communications, 2019, 10, 2166.	5.8	123
31	The vulnerabilities of agricultural land and food production to future water scarcity. Global Environmental Change, 2019, 58, 101944.	3.6	120
32	Landâ€based measures to mitigate climate change: Potential and feasibility by country. Global Change Biology, 2021, 27, 6025-6058.	4.2	114
33	2.6: Limiting climate change to 450Âppm CO2 equivalent in the 21st century. Energy Economics, 2009, 31, S107-S120.	5.6	106
34	Integrated assessment of global water scarcity over the 21st century under multiple climate change mitigation policies. Hydrology and Earth System Sciences, 2014, 18, 2859-2883.	1.9	106
35	Achieving CO2 reductions in Colombia: Effects of carbon taxes and abatement targets. Energy Economics, 2016, 56, 575-586.	5.6	105
36	WHAT DOES THE 2Â°C TARGET IMPLY FOR A GLOBAL CLIMATE AGREEMENT IN 2020? THE LIMITS STUDY ON DURBAN PLATFORM SCENARIOS. Climate Change Economics, 2013, 04, 1340008.	2.9	103

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37	Assessing uncertainties in land cover projections. Global Change Biology, 2017, 23, 767-781.	4.2	103
38	Trade-offs of different land and bioenergy policies on the path to achieving climate targets. Climatic Change, 2014, 123, 691-704.	1.7	98
39	Global economic consequences of deploying bioenergy with carbon capture and storage (BECCS). Environmental Research Letters, 2016, 11, 095004.	2.2	97
40	The Ongoing Need for High-Resolution Regional Climate Models: Process Understanding and Stakeholder Information. Bulletin of the American Meteorological Society, 2020, 101, E664-E683.	1.7	90
41	Global land use for 2015â€“2100 at 0.05Â° resolution under diverse socioeconomic and climate scenarios. Scientific Data, 2020, 7, 320.	2.4	89
42	Agriculture, land use, energy and carbon emission impacts of global biofuel mandates to mid-century. Applied Energy, 2014, 114, 763-773.	5.1	79
43	Balancing global water availability and use at basin scale in an integrated assessment model. Climatic Change, 2016, 136, 217-231.	1.7	79
44	Deep mitigation of CO2 and non-CO2 greenhouse gases toward 1.5â€‰Â°C and 2â€‰Â°C futures. Nature Communications, 2021, 12, 6245.	5.8	78
45	Climate mitigation and the future of tropical landscapes. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 19633-19638.	3.3	76
46	Understanding the contribution of non-carbon dioxide gases in deep mitigation scenarios. Global Environmental Change, 2015, 33, 142-153.	3.6	75
47	Disturbance legacies and climate jointly drive tree growth and mortality in an intensively studied boreal forest. Global Change Biology, 2014, 20, 216-227.	4.2	74
48	CO2 emission mitigation and fossil fuel markets: Dynamic and international aspects of climate policies. Technological Forecasting and Social Change, 2015, 90, 243-256.	6.2	74
49	A multi-model assessment of the co-benefits of climate mitigation for global air quality. Environmental Research Letters, 2016, 11, 124013.	2.2	72
50	Integrated human-earth system modelingâ€"state of the science and future directions. Environmental Research Letters, 2018, 13, 063006.	2.2	72
51	The impact of interventions in the global land and agriâ€food sectors on Natureâ€™s Contributions to People and the UN Sustainable Development Goals. Global Change Biology, 2020, 26, 4691-4721.	4.2	70
52	The contribution of Paris to limit global warming to 2 Â°C. Environmental Research Letters, 2015, 10, 125002.	2.2	69
53	Comparing supply-side specifications in models of global agriculture and the food system. Agricultural Economics (United Kingdom), 2014, 45, 21-35.	2.0	68
54	Can radiative forcing be limited to 2.6ÂWmâ ̂'2 without negative emissions from bioenergy AND CO2 capture and storage?. Climatic Change, 2013, 118, 29-43.	1.7	67

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55	The DOE E3SM v1.1 Biogeochemistry Configuration: Description and Simulated Ecosystemâ€Climate Responses to Historical Changes in Forcing. Journal of Advances in Modeling Earth Systems, 2020, 12, e2019MS001766.	1.3	65
56	ENERGY INVESTMENTS UNDER CLIMATE POLICY: A COMPARISON OF GLOBAL MODELS. Climate Change Economics, 2013, 04, 1340010.	2.9	61
57	Societal decisions about climate mitigation will have dramatic impacts on eutrophication in the 21st century. Nature Communications, 2019, 10, 939.	5.8	61
58	Critical adjustment of land mitigation pathways for assessing countriesâ€™ climate progress. Nature Climate Change, 2021, 11, 425-434.	8.1	61
59	Greenhouse Gas Policy Influences Climate via Direct Effects of Land-Use Change. Journal of Climate, 2013, 26, 3657-3670.	1.2	59
60	Implications of sustainable development considerations for comparability across nationally determined contributions. Nature Climate Change, 2018, 8, 124-129.	8.1	55
61	Implications of weak near-term climate policies on long-term mitigation pathways. Climatic Change, 2016, 136, 127-140.	1.7	54
62	Large Ensemble Analytic Framework for Consequenceâ€Driven Discovery of Climate Change Scenarios. Earth's Future, 2018, 6, 488-504.	2.4	54
63	Humans drive future water scarcity changes across all Shared Socioeconomic Pathways. Environmental Research Letters, 2020, 15, 014007.	2.2	50
64	A CROSS-MODEL COMPARISON OF GLOBAL LONG-TERM TECHNOLOGY DIFFUSION UNDER A 2Â°C CLIMATE CHANGE CONTROL TARGET. Climate Change Economics, 2013, 04, 1340013.	2.9	49
65	From land use to land cover: restoring the afforestation signal in a coupled integrated assessmentâ€“earth system model and the implications for CMIP5 RCP simulations. Biogeosciences, 2014, 11, 6435-6450.	1.3	49
66	Overview of EMF 22 U.S. transition scenarios. Energy Economics, 2009, 31, S198-S211.	5.6	47
67	Biospheric feedback effects in a synchronously coupled model of human and Earth systems. Nature Climate Change, 2017, 7, 496-500.	8.1	46
68	Climate extremes, landâ€“climate feedbacks and land-use forcing at 1.5Â°C. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20160450.	1.6	46
69	The integrated Earth system model version 1: formulation and functionality. Geoscientific Model Development, 2015, 8, 2203-2219.	1.3	44
70	The Climate Response to Emissions Reductions Due to COVIDâ€19: Initial Results From CovidMIP. Geophysical Research Letters, 2021, 48, e2020GL091883.	1.5	43
71	Bioenergy for climate change mitigation: Scale and sustainability. GCB Bioenergy, 2021, 13, 1346-1371.	2.5	43
72	Low-emission pathways in 11 major economies: comparison of cost-optimal pathways and Paris climate proposals. Climatic Change, 2017, 142, 491-504.	1.7	41

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73	The distribution and magnitude of emissions mitigation costs in climate stabilization under less than perfect international cooperation: SGM results. Energy Economics, 2009, 31, S187-S197.	5.6	40
74	Agriculture, forestry, and other land-use emissions in Latin America. Energy Economics, 2016, 56, 615-624.	5.6	40
75	Water Sector Assumptions for the Shared Socioeconomic Pathways in an Integrated Modeling Framework. Water Resources Research, 2018, 54, 6423-6440.	1.7	40
76	The role of direct air capture and negative emissions technologies in the shared socioeconomic pathways towards +1.5 Â°C and +2 Â°C futures. Environmental Research Letters, 2021, 16, 114012.	2.2	40
77	Early retirement of power plants in climate mitigation scenarios. Environmental Research Letters, 2020, 15, 094064.	2.2	38
78	A pathway of global food supply adaptation in a world with increasingly constrained groundwater. Science of the Total Environment, 2019, 673, 165-176.	3.9	37
79	Implications of simultaneously mitigating and adapting to climate change: initial experiments using GCAM. Climatic Change, 2013, 117, 545-560.	1.7	36
80	Quantifying the biophysical and socioeconomic drivers of changes in forest and agricultural land in South and Southeast Asia. Global Change Biology, 2019, 25, 2137-2151.	4.2	34
81	Future energy system challenges for Africa: Insights from Integrated Assessment Models. Energy Policy, 2015, 86, 705-717.	4.2	31
82	Regional responses to future, demand-driven water scarcity. Environmental Research Letters, 2018, 13, 094006.	2.2	30
83	Burning embers: towards more transparent and robust climate-change risk assessments. Nature Reviews Earth & Environment, 2020, 1, 516-529.	12.2	29
84	Accounting for radiative forcing from albedo change in future global land-use scenarios. Climatic Change, 2015, 131, 691-703.	1.7	28
85	Emissions reduction scenarios in the Argentinean Energy Sector. Energy Economics, 2016, 56, 552-563.	5.6	28
86	On linking an Earth system model to the equilibrium carbon representation of an economically optimizing land use model. Geoscientific Model Development, 2014, 7, 2545-2555.	1.3	26
87	The effect of African growth on future global energy, emissions, and regional development. Climatic Change, 2016, 136, 109-125.	1.7	26
88	Mitigating energy demand sector emissions: The integrated modelling perspective. Applied Energy, 2020, 261, 114347.	5.1	26
89	Meeting the radiative forcing targets of the representative concentration pathways in a world with agricultural climate impacts. Earth's Future, 2014, 2, 83-98.	2.4	25
90	Will economic growth and fossil fuel scarcity help or hinder climate stabilization?. Climatic Change, 2016, 136, 7-22.	1.7	25

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91	Sensitivity of climate mitigation strategies to natural disturbances. Environmental Research Letters, 2013, 8, 015018.	2.2	21
92	Demeter â€“ A Land Use and Land Cover Change Disaggregation Model. Journal of Open Research Software, 2018, 6, 15.	2.7	21
93	Energy and technology lessons since Rio. Energy Economics, 2012, 34, S7-S14.	5.6	20
94	Decomposing the impact of alternative technology sets on future carbon emissions growth. Energy Economics, 2012, 34, S359-S365.	5.6	19
95	Capital investment requirements for greenhouse gas emissions mitigation in power generation on near term to century time scales and global to regional spatial scales. Energy Economics, 2014, 46, 267-278.	5.6	18
96	A MULTI-MODEL ANALYSIS OF POST-2020 MITIGATION EFFORTS OF FIVE MAJOR ECONOMIES. Climate Change Economics, 2013, 04, 1340012.	2.9	17
97	<i>gcamdata</i>: An R Package for Preparation, Synthesis, andÂTracking of Input Data for the GCAM Integrated Human-Earth Systems Model. Journal of Open Research Software, 2019, 7, 6.	2.7	17
98	A MULTI-MODEL ANALYSIS OF THE REGIONAL AND SECTORAL ROLES OF BIOENERGY IN NEAR- AND LONG-TERM CO₂ EMISSIONS REDUCTION. Climate Change Economics, 2013, 04, 1340014.	2.9	16
99	A HINDCAST EXPERIMENT USING THE GCAM 3.0 AGRICULTURE AND LAND-USE MODULE. Climate Change Economics, 2017, 08, 1750005.	2.9	16
100	Calibration and analysis of the uncertainty in downscaling global land use and land cover projections from GCAM using Demeter (v1.0.0). Geoscientific Model Development, 2019, 12, 1753-1764.	1.3	15
101	EU 20-20-20 energy policy as a model for global climate mitigation. Climate Policy, 2014, 14, 581-598.	2.6	14
102	Benefits of greenhouse gas mitigation on the supply, management, and use of water resources in the United States. Climatic Change, 2015, 131, 127-141.	1.7	14
103	Implications of uncertain future fossil energy resources on bioenergy use and terrestrial carbon emissions. Climatic Change, 2016, 136, 57-68.	1.7	14
104	THE CRITICAL ROLE OF CONVERSION COST AND COMPARATIVE ADVANTAGE IN MODELING AGRICULTURAL LAND USE CHANGE. Climate Change Economics, 2020, 11, 2050004.	2.9	14
105	Integrated Assessment Modeling. , 2012, , 169-209.		13
106	Evaluation of integrated assessment model hindcast experiments: a case study of the GCAMÂ3.0 land use module. Geoscientific Model Development, 2017, 10, 4307-4319.	1.3	13
107	Implication of imposing fertilizer limitations on energy, agriculture, and land systems. Journal of Environmental Management, 2022, 305, 114391.	3.8	13
108	Comparing model results to national climate policy goals: Results from the Asia modeling exercise. Energy Economics, 2012, 34, S306-S315.	5.6	12

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109	GLOBAL MARKET AND ECONOMIC WELFARE IMPLICATIONS OF CHANGES IN AGRICULTURAL YIELDS DUE TO CLIMATE CHANGE. Climate Change Economics, 2020, 11, 2050005.	2.9	12
110	Are scenario projections overly optimistic about future yield progress?. Global Environmental Change, 2020, 64, 102120.	3.6	11
111	The role of global agricultural market integration in multiregional economic modeling: Using hindcast experiments to validate an Armington model. Economic Analysis and Policy, 2021, 72, 1-17.	3.2	11
112	The impact of agricultural trade approaches on global economic modeling. Global Environmental Change, 2022, 73, 102413.	3.6	11
113	Future bioenergy expansion could alter carbon sequestration potential and exacerbate water stress in the United States. Science Advances, 2022, 8, eabm8237.	4.7	11
114	Characteristics of human-climate feedbacks differ at different radiative forcing levels. Global and Planetary Change, 2019, 180, 126-135.	1.6	10
115	GCAM-USA v5.3_water_dispatch: integrated modeling of subnational US energy, water, and land systems within a global framework. Geoscientific Model Development, 2022, 15, 2533-2559.	1.3	10
116	A crop yield change emulator for use in GCAM and similar models: Persephone v1.0. Geoscientific Model Development, 2019, 12, 1319-1350.	1.3	9
117	The domestic and international implications of future climate for U.S. agriculture in GCAM. PLoS ONE, 2020, 15, e0237918.	1.1	8
118	Assessing the Interactions among U.S. Climate Policy, Biomass Energy, and Agricultural Trade. Energy Journal, 2014, 35, .	0.9	8
119	Modeling the Economic and Environmental Impacts of Land Scarcity Under Deep Uncertainty. Earth's Future, 2022, 10, .	2.4	8
120	Quantifying Humanâ€Mediated Carbon Cycle Feedbacks. Geophysical Research Letters, 2018, 45, 11,370.	1.5	7
121	Global climate, energy, and economic implications of international energy offsets programs. Climatic Change, 2015, 133, 583-596.	1.7	6
122	Future aerosol emissions: a multi-model comparison. Climatic Change, 2016, 138, 13-24.	1.7	6
123	Initial Land Use/Cover Distribution Substantially Affects Global Carbon and Local Temperature Projections in the Integrated Earth System Model. Global Biogeochemical Cycles, 2020, 34, e2019GB006383.	1.9	6
124	The effects of climate sensitivity and carbon cycle interactions on mitigation policy stringency. Climatic Change, 2015, 131, 35-50.	1.7	4
125	Importance of Cross-Sector Interactions When Projecting Forest Carbon across Alternative Socioeconomic Futures. Journal of Forest Economics, 2019, 34, 205-231.	0.1	4
126	Global agricultural responses to interannual climate and biophysical variability. Environmental Research Letters, 2021, 16, 104037.	2.2	4

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127	Near-term limits to mitigation: Challenges arising from contrary mitigation effects from indirect land-use change and sulfur emissions. Energy Economics, 2014, 42, 233-239.	5.6	3
128	Integrated Assessment Modeling integrated assessment modeling (IAM). , 2012, , 5398-5428.		3
129	Modeling land use and land cover change: using a hindcast to estimate economic parameters in gcamland v2.0. Geoscientific Model Development, 2022, 15, 429-447.	1.3	3
130	plutus: An R package to calculate electricity investments and stranded assets from the Global Change Analysis Model (GCAM). Journal of Open Source Software, 2021, 6, 3212.	2.0	1
131	Regional Low-Emission Pathways from Global Models. SSRN Electronic Journal, 0, , .	0.4	1
132	gcamland v1.0 â€“ An R Package for Modelling Land Use and Land Cover Change. Journal of Open Research Software, 2019, 7, .	2.7	1
133	Diurnal Rainfall Response to the Physiological and Radiative Effects of CO₂ in Tropical Forests in the Energy Exascale Earth System Model v1. Journal of Geophysical Research D: Atmospheres, 2022, 127, .	1.2	1
134	Implications of Weak Near-Term Climate Policies on Long-Term Mitigation Pathways. SSRN Electronic Journal, 0, , .	0.4	0