

Katherine Calvin

List of Publications by Year in descending order

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Version: 2024-02-01

134
papers

19,113
citations

25034

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12946

131
g-index

158
all docs

158
docs citations

158
times ranked

18523
citing authors

#	ARTICLE	IF	CITATIONS
1	Implication of imposing fertilizer limitations on energy, agriculture, and land systems. Journal of Environmental Management, 2022, 305, 114391.	7.8	13
2	Modeling land use and land cover change: using a hindcast to estimate economic parameters in gcamlnd v2.0. Geoscientific Model Development, 2022, 15, 429-447.	3.6	3
3	The impact of agricultural trade approaches on global economic modeling. Global Environmental Change, 2022, 73, 102413.	7.8	11
4	Modeling the Economic and Environmental Impacts of Land Scarcity Under Deep Uncertainty. Earth's Future, 2022, 10, .	6.3	8
5	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.	3.6	10
6	Diurnal Rainfall Response to the Physiological and Radiative Effects of CO ₂ in Tropical Forests in the Energy Exascale Earth System Model v1. Journal of Geophysical Research D: Atmospheres, 2022, 127, .	3.3	1
7	Future bioenergy expansion could alter carbon sequestration potential and exacerbate water stress in the United States. Science Advances, 2022, 8, eabm8237.	10.3	11
8	Critical adjustment of land mitigation pathways for assessing countries' climate progress. Nature Climate Change, 2021, 11, 425-434.	18.8	61
9	The Climate Response to Emissions Reductions Due to COVID-19: Initial Results From CovidMIP. Geophysical Research Letters, 2021, 48, e2020GL091883.	4.0	43
10	Bioenergy for climate change mitigation: Scale and sustainability. GCB Bioenergy, 2021, 13, 1346-1371.	5.6	43
11	Global agricultural responses to interannual climate and biophysical variability. Environmental Research Letters, 2021, 16, 104037.	5.2	4
12	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.	4.6	1
13	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.	6.6	11
14	Land-based measures to mitigate climate change: Potential and feasibility by country. Global Change Biology, 2021, 27, 6025-6058.	9.5	114
15	The role of direct air capture and negative emissions technologies in the shared socioeconomic pathways towards +1.5 °C and +2 °C futures. Environmental Research Letters, 2021, 16, 114012.	5.2	40
16	Deep mitigation of CO ₂ and non-CO ₂ greenhouse gases toward 1.5 °C and 2 °C futures. Nature Communications, 2021, 12, 6245.	12.8	78
17	Which practices can deliver food security, climate change mitigation and adaptation, and combat land degradation and desertification?. Global Change Biology, 2020, 26, 1532-1575.	9.5	164
18	Humans drive future water scarcity changes across all Shared Socioeconomic Pathways. Environmental Research Letters, 2020, 15, 014007.	5.2	50

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19	Global land use for 2015–2100 at 0.05° resolution under diverse socioeconomic and climate scenarios. <i>Scientific Data</i> , 2020, 7, 320.	5.3	89
20	Are scenario projections overly optimistic about future yield progress?. <i>Global Environmental Change</i> , 2020, 64, 102120.	7.8	11
21	The DOE E3SM v1.1 Biogeochemistry Configuration: Description and Simulated Ecosystem–Climate Responses to Historical Changes in Forcing. <i>Journal of Advances in Modeling Earth Systems</i> , 2020, 12, e2019MS001766.	3.8	65
22	The domestic and international implications of future climate for U.S. agriculture in GCAM. <i>PLoS ONE</i> , 2020, 15, e0237918.	2.5	8
23	Burning embers: towards more transparent and robust climate-change risk assessments. <i>Nature Reviews Earth & Environment</i> , 2020, 1, 516-529.	29.7	29
24	Initial Land Use/Cover Distribution Substantially Affects Global Carbon and Local Temperature Projections in the Integrated Earth System Model. <i>Global Biogeochemical Cycles</i> , 2020, 34, e2019GB006383.	4.9	6
25	The impact of interventions in the global land and agricultural sectors on Nature’s Contributions to People and the UN Sustainable Development Goals. <i>Global Change Biology</i> , 2020, 26, 4691-4721.	9.5	70
26	Early retirement of power plants in climate mitigation scenarios. <i>Environmental Research Letters</i> , 2020, 15, 094064.	5.2	38
27	THE CRITICAL ROLE OF CONVERSION COST AND COMPARATIVE ADVANTAGE IN MODELING AGRICULTURAL LAND USE CHANGE. <i>Climate Change Economics</i> , 2020, 11, 2050004.	5.0	14
28	Mitigating energy demand sector emissions: The integrated modelling perspective. <i>Applied Energy</i> , 2020, 261, 114347.	10.1	26
29	GLOBAL MARKET AND ECONOMIC WELFARE IMPLICATIONS OF CHANGES IN AGRICULTURAL YIELDS DUE TO CLIMATE CHANGE. <i>Climate Change Economics</i> , 2020, 11, 2050005.	5.0	12
30	The Ongoing Need for High-Resolution Regional Climate Models: Process Understanding and Stakeholder Information. <i>Bulletin of the American Meteorological Society</i> , 2020, 101, E664-E683.	3.3	90
31	Harmonization of global land use change and management for the period 850–2100 (LUH2) for CMIP6. <i>Geoscientific Model Development</i> , 2020, 13, 5425-5464.	3.6	408
32	The vulnerabilities of agricultural land and food production to future water scarcity. <i>Global Environmental Change</i> , 2019, 58, 101944.	7.8	120
33	A crop yield change emulator for use in GCAM and similar models: Persephone v1.0. <i>Geoscientific Model Development</i> , 2019, 12, 1319-1350.	3.6	9
34	Calibration and analysis of the uncertainty in downscaling global land use and land cover projections from GCAM using Demeter (v1.0.0). <i>Geoscientific Model Development</i> , 2019, 12, 1753-1764.	3.6	15
35	Characteristics of human-climate feedbacks differ at different radiative forcing levels. <i>Global and Planetary Change</i> , 2019, 180, 126-135.	3.5	10
36	Land-Management Options for Greenhouse Gas Removal and Their Impacts on Ecosystem Services and the Sustainable Development Goals. <i>Annual Review of Environment and Resources</i> , 2019, 44, 255-286.	13.4	181

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37	Key determinants of global land-use projections. <i>Nature Communications</i> , 2019, 10, 2166.	12.8	123
38	Global emissions pathways under different socioeconomic scenarios for use in CMIP6: a dataset of harmonized emissions trajectories through the end of the century. <i>Geoscientific Model Development</i> , 2019, 12, 1443-1475.	3.6	496
39	GCAM v5.1: representing the linkages between energy, water, land, climate, and economic systems. <i>Geoscientific Model Development</i> , 2019, 12, 677-698.	3.6	211
40	Quantifying the biophysical and socioeconomic drivers of changes in forest and agricultural land in South and Southeast Asia. <i>Global Change Biology</i> , 2019, 25, 2137-2151.	9.5	34
41	Societal decisions about climate mitigation will have dramatic impacts on eutrophication in the 21st century. <i>Nature Communications</i> , 2019, 10, 939.	12.8	61
42	A pathway of global food supply adaptation in a world with increasingly constrained groundwater. <i>Science of the Total Environment</i> , 2019, 673, 165-176.	8.0	37
43	Importance of Cross-Sector Interactions When Projecting Forest Carbon across Alternative Socioeconomic Futures. <i>Journal of Forest Economics</i> , 2019, 34, 205-231.	0.2	4
44	<i>gcamdata</i>: An R Package for Preparation, Synthesis, and Tracking of Input Data for the GCAM Integrated Human-Earth Systems Model. <i>Journal of Open Research Software</i> , 2019, 7, 6.	5.9	17
45	<i>gcamland v1.0</i> – An R Package for Modelling Land Use and Land Cover Change. <i>Journal of Open Research Software</i> , 2019, 7, .	5.9	1
46	Scenarios towards limiting global mean temperature increase below 1.5 °C. <i>Nature Climate Change</i> , 2018, 8, 325-332.	18.8	795
47	Implications of sustainable development considerations for comparability across nationally determined contributions. <i>Nature Climate Change</i> , 2018, 8, 124-129.	18.8	55
48	Large Ensemble Analytic Framework for Consequence-Driven Discovery of Climate Change Scenarios. <i>Earth's Future</i> , 2018, 6, 488-504.	6.3	54
49	Quantifying Human-Mediated Carbon Cycle Feedbacks. <i>Geophysical Research Letters</i> , 2018, 45, 11,370.	4.0	7
50	Regional responses to future, demand-driven water scarcity. <i>Environmental Research Letters</i> , 2018, 13, 094006.	5.2	30
51	Climate extremes, land-climate feedbacks and land-use forcing at 1.5°C. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2018, 376, 20160450.	3.4	46
52	Integrated human-earth system modeling – state of the science and future directions. <i>Environmental Research Letters</i> , 2018, 13, 063006.	5.2	72
53	Water Sector Assumptions for the Shared Socioeconomic Pathways in an Integrated Modeling Framework. <i>Water Resources Research</i> , 2018, 54, 6423-6440.	4.2	40
54	Demeter – A Land Use and Land Cover Change Disaggregation Model. <i>Journal of Open Research Software</i> , 2018, 6, 15.	5.9	21

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55	The SSP4: A world of deepening inequality. Global Environmental Change, 2017, 42, 284-296.	7.8	265
56	A HINDCAST EXPERIMENT USING THE GCAM 3.0 AGRICULTURE AND LAND-USE MODULE. Climate Change Economics, 2017, 08, 1750005.	5.0	16
57	Low-emission pathways in 11 major economies: comparison of cost-optimal pathways and Paris climate proposals. Climatic Change, 2017, 142, 491-504.	3.6	41
58	Biospheric feedback effects in a synchronously coupled model of human and Earth systems. Nature Climate Change, 2017, 7, 496-500.	18.8	46
59	Land-use futures in the shared socio-economic pathways. Global Environmental Change, 2017, 42, 331-345.	7.8	645
60	Future air pollution in the Shared Socio-economic Pathways. Global Environmental Change, 2017, 42, 346-358.	7.8	277
61	Assessing uncertainties in land cover projections. Global Change Biology, 2017, 23, 767-781.	9.5	103
62	Fossil-fueled development (SSP5): An energy and resource intensive scenario for the 21st century. Global Environmental Change, 2017, 42, 297-315.	7.8	418
63	Shared Socio-Economic Pathways of the Energy Sector – Quantifying the Narratives. Global Environmental Change, 2017, 42, 316-330.	7.8	247
64	The Shared Socioeconomic Pathways and their energy, land use, and greenhouse gas emissions implications: An overview. Global Environmental Change, 2017, 42, 153-168.	7.8	2,966
65	Evaluation of integrated assessment model hindcast experiments: a case study of the GCAM 3.0 land use module. Geoscientific Model Development, 2017, 10, 4307-4319.	3.6	13
66	Implications of weak near-term climate policies on long-term mitigation pathways. Climatic Change, 2016, 136, 127-140.	3.6	54
67	Implications of uncertain future fossil energy resources on bioenergy use and terrestrial carbon emissions. Climatic Change, 2016, 136, 57-68.	3.6	14
68	The effect of African growth on future global energy, emissions, and regional development. Climatic Change, 2016, 136, 109-125.	3.6	26
69	The Land Use Model Intercomparison Project (LUMIP) contribution to CMIP6: rationale and experimental design. Geoscientific Model Development, 2016, 9, 2973-2998.	3.6	343
70	Hotspots of uncertainty in land-use and land-cover change projections: a global-scale model comparison. Global Change Biology, 2016, 22, 3967-3983.	9.5	171
71	Will economic growth and fossil fuel scarcity help or hinder climate stabilization?. Climatic Change, 2016, 136, 7-22.	3.6	25
72	Future aerosol emissions: a multi-model comparison. Climatic Change, 2016, 138, 13-24.	3.6	6

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73	Global economic consequences of deploying bioenergy with carbon capture and storage (BECCS). Environmental Research Letters, 2016, 11, 095004.	5.2	97
74	A multi-model assessment of the co-benefits of climate mitigation for global air quality. Environmental Research Letters, 2016, 11, 124013.	5.2	72
75	Balancing global water availability and use at basin scale in an integrated assessment model. Climatic Change, 2016, 136, 217-231.	3.6	79
76	Emissions reduction scenarios in the Argentinean Energy Sector. Energy Economics, 2016, 56, 552-563.	12.1	28
77	Achieving CO2 reductions in Colombia: Effects of carbon taxes and abatement targets. Energy Economics, 2016, 56, 575-586.	12.1	105
78	Agriculture, forestry, and other land-use emissions in Latin America. Energy Economics, 2016, 56, 615-624.	12.1	40
79	The contribution of Paris to limit global warming to 2 Å°C. Environmental Research Letters, 2015, 10, 125002.	5.2	69
80	The integrated Earth system model version 1: formulation and functionality. Geoscientific Model Development, 2015, 8, 2203-2219.	3.6	44
81	Accounting for radiative forcing from albedo change in future global land-use scenarios. Climatic Change, 2015, 131, 691-703.	3.6	28
82	Global climate, energy, and economic implications of international energy offsets programs. Climatic Change, 2015, 133, 583-596.	3.6	6
83	Post-2020 climate agreements in the major economies assessed in the light of global models. Nature Climate Change, 2015, 5, 119-126.	18.8	158
84	Benefits of greenhouse gas mitigation on the supply, management, and use of water resources in the United States. Climatic Change, 2015, 131, 127-141.	3.6	14
85	Understanding the contribution of non-carbon dioxide gases in deep mitigation scenarios. Global Environmental Change, 2015, 33, 142-153.	7.8	75
86	A comprehensive view of global potential for hydro-generated electricity. Energy and Environmental Science, 2015, 8, 2622-2633.	30.8	129
87	Near-term acceleration in the rate of temperature change. Nature Climate Change, 2015, 5, 333-336.	18.8	151
88	Future energy system challenges for Africa: Insights from Integrated Assessment Models. Energy Policy, 2015, 86, 705-717.	8.8	31
89	CO2 emission mitigation and fossil fuel markets: Dynamic and international aspects of climate policies. Technological Forecasting and Social Change, 2015, 90, 243-256.	11.6	74
90	The effects of climate sensitivity and carbon cycle interactions on mitigation policy stringency. Climatic Change, 2015, 131, 35-50.	3.6	4

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91	Integrated assessment of global water scarcity over the 21st century under multiple climate change mitigation policies. <i>Hydrology and Earth System Sciences</i> , 2014, 18, 2859-2883.	4.9	106
92	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. <i>Biogeosciences</i> , 2014, 11, 6435-6450.	3.3	49
93	On linking an Earth system model to the equilibrium carbon representation of an economically optimizing land use model. <i>Geoscientific Model Development</i> , 2014, 7, 2545-2555.	3.6	26
94	EU 20-20-20 energy policy as a model for global climate mitigation. <i>Climate Policy</i> , 2014, 14, 581-598.	5.1	14
95	Why do global long-term scenarios for agriculture differ? An overview of the AgMIP Global Economic Model Intercomparison. <i>Agricultural Economics (United Kingdom)</i> , 2014, 45, 3-20.	3.9	183
96	Disturbance legacies and climate jointly drive tree growth and mortality in an intensively studied boreal forest. <i>Global Change Biology</i> , 2014, 20, 216-227.	9.5	74
97	Fossil resource and energy security dynamics in conventional and carbon-constrained worlds. <i>Climatic Change</i> , 2014, 123, 413-426.	3.6	123
98	Agriculture, land use, energy and carbon emission impacts of global biofuel mandates to mid-century. <i>Applied Energy</i> , 2014, 114, 763-773.	10.1	79
99	Near-term limits to mitigation: Challenges arising from contrary mitigation effects from indirect land-use change and sulfur emissions. <i>Energy Economics</i> , 2014, 42, 233-239.	12.1	3
100	Comparing supply-side specifications in models of global agriculture and the food system. <i>Agricultural Economics (United Kingdom)</i> , 2014, 45, 21-35.	3.9	68
101	Capital investment requirements for greenhouse gas emissions mitigation in power generation on near term to century time scales and global to regional spatial scales. <i>Energy Economics</i> , 2014, 46, 267-278.	12.1	18
102	Trade-offs of different land and bioenergy policies on the path to achieving climate targets. <i>Climatic Change</i> , 2014, 123, 691-704.	3.6	98
103	The role of renewable energy in climate stabilization: results from the EMF27 scenarios. <i>Climatic Change</i> , 2014, 123, 427-441.	3.6	179
104	Land-use transition for bioenergy and climate stabilization: model comparison of drivers, impacts and interactions with other land use based mitigation options. <i>Climatic Change</i> , 2014, 123, 495-509.	3.6	140
105	Bioenergy in energy transformation and climate management. <i>Climatic Change</i> , 2014, 123, 477-493.	3.6	154
106	Agriculture and climate change in global scenarios: why don't the models agree. <i>Agricultural Economics (United Kingdom)</i> , 2014, 45, 85-101.	3.9	172
107	Long-term global water projections using six socioeconomic scenarios in an integrated assessment modeling framework. <i>Technological Forecasting and Social Change</i> , 2014, 81, 205-226.	11.6	159
108	Meeting the radiative forcing targets of the representative concentration pathways in a world with agricultural climate impacts. <i>Earth's Future</i> , 2014, 2, 83-98.	6.3	25

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109	Assessing the Interactions among U.S. Climate Policy, Biomass Energy, and Agricultural Trade. Energy Journal, 2014, 35, .	1.7	8
110	Can radiative forcing be limited to 2.6 Wm ⁻² without negative emissions from bioenergy AND CO ₂ capture and storage?. Climatic Change, 2013, 118, 29-43.	3.6	67
111	Greenhouse Gas Policy Influences Climate via Direct Effects of Land-Use Change. Journal of Climate, 2013, 26, 3657-3670.	3.2	59
112	Implications of simultaneously mitigating and adapting to climate change: initial experiments using GCAM. Climatic Change, 2013, 117, 545-560.	3.6	36
113	WHAT DOES THE 2°C TARGET IMPLY FOR A GLOBAL CLIMATE AGREEMENT IN 2020? THE LIMITS STUDY ON DURBAN PLATFORM SCENARIOS. Climate Change Economics, 2013, 04, 1340008.	5.0	103
114	ENERGY INVESTMENTS UNDER CLIMATE POLICY: A COMPARISON OF GLOBAL MODELS. Climate Change Economics, 2013, 04, 1340010.	5.0	61
115	A MULTI-MODEL ANALYSIS OF POST-2020 MITIGATION EFFORTS OF FIVE MAJOR ECONOMIES. Climate Change Economics, 2013, 04, 1340012.	5.0	17
116	A CROSS-MODEL COMPARISON OF GLOBAL LONG-TERM TECHNOLOGY DIFFUSION UNDER A 2°C CLIMATE CHANGE CONTROL TARGET. Climate Change Economics, 2013, 04, 1340013.	5.0	49
117	A MULTI-MODEL ANALYSIS OF THE REGIONAL AND SECTORAL ROLES OF BIOENERGY IN NEAR- AND LONG-TERM CO ₂ EMISSIONS REDUCTION. Climate Change Economics, 2013, 04, 1340014.	5.0	16
118	Sensitivity of climate mitigation strategies to natural disturbances. Environmental Research Letters, 2013, 8, 015018.	5.2	21
119	The role of Asia in mitigating climate change: Results from the Asia modeling exercise. Energy Economics, 2012, 34, S251-S260.	12.1	126
120	Decomposing the impact of alternative technology sets on future carbon emissions growth. Energy Economics, 2012, 34, S359-S365.	12.1	19
121	Comparing model results to national climate policy goals: Results from the Asia modeling exercise. Energy Economics, 2012, 34, S306-S315.	12.1	12
122	Energy and technology lessons since Rio. Energy Economics, 2012, 34, S7-S14.	12.1	20
123	Integrated Assessment Modeling. , 2012, , 169-209.		13
124	Integrated Assessment Modeling integrated assessment modeling (IAM). , 2012, , 5398-5428.		3
125	RCP4.5: a pathway for stabilization of radiative forcing by 2100. Climatic Change, 2011, 109, 77-94.	3.6	1,238
126	The RCP greenhouse gas concentrations and their extensions from 1765 to 2300. Climatic Change, 2011, 109, 213-241.	3.6	2,948

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127	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.	7.1	76
128	2.6: Limiting climate change to 450Åppm CO2 equivalent in the 21st century. Energy Economics, 2009, 31, S107-S120.	12.1	106
129	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.	12.1	40
130	Overview of EMF 22 U.S. transition scenarios. Energy Economics, 2009, 31, S198-S211.	12.1	47
131	Implications of Limiting CO ₂ Concentrations for Land Use and Energy. Science, 2009, 324, 1183-1186.	12.6	778
132	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.	7.1	442
133	Regional Low-Emission Pathways from Global Models. SSRN Electronic Journal, 0, , .	0.4	1
134	Implications of Weak Near-Term Climate Policies on Long-Term Mitigation Pathways. SSRN Electronic Journal, 0, , .	0.4	0