# William J Riley

List of Publications by Year
in descending order

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|---|---|---|---|
| 214 papers | 15,318 citations | 20817 60 h-index | 22166 113 g-index |
| 294 all docs | 294 docs citations | 294 times ranked | 15116 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | The Global Methane Budget 2000â€“2017. Earth System Science Data, 2020, 12, 1561-1623. | 9.9 | 1,199 |
| 2 | The global methane budget 2000â€“2012. Earth System Science Data, 2016, 8, 697-751. | 9.9 | 824 |
| 3 | The Community Land Model Version 5: Description of New Features, Benchmarking, and Impact of Forcing Uncertainty. Journal of Advances in Modeling Earth Systems, 2019, 11, 4245-4287. | 3.8 | 692 |
| 4 | Present state of global wetland extent and wetland methane modelling: conclusions from a model inter-comparison project (WETCHIMP). Biogeosciences, 2013, 10, 753-788. | 3.3 | 475 |
| 5 | The DOE E3SM Coupled Model Version 1: Overview and Evaluation at Standard Resolution. Journal of Advances in Modeling Earth Systems, 2019, 11, 2089-2129. | 3.8 | 404 |
| 6 | The effect of vertically resolved soil biogeochemistry and alternate soil C and N models on C dynamics of CLM4. Biogeosciences, 2013, 10, 7109-7131. | 3.3 | 359 |
| 7 | Indoor Particulate Matter of Outdoor Origin:Â Importance of Size-Dependent Removal Mechanisms. Environmental Science & Technology, 2002, 36, 200-207. | 10.0 | 346 |
| 8 | Analysis of Permafrost Thermal Dynamics and Response to Climate Change in the CMIP5 Earth System Models. Journal of Climate, 2013, 26, 1877-1900. | 3.2 | 326 |
| 9 | Barriers to predicting changes in global terrestrial methane fluxes: analyses using CLM4Me, a methane biogeochemistry model integrated in CESM. Biogeosciences, 2011, 8, 1925-1953. | 3.3 | 325 |
| 10 | A modelâ€data comparison of gross primary productivity: Results from the North American Carbon Program site synthesis. Journal of Geophysical Research, 2012, 117, . | 3.3 | 274 |
| 11 | Expert assessment of vulnerability of permafrost carbon to climate change. Climatic Change, 2013, 119, 359-374. | 3.6 | 257 |
| 12 | A modelâ€data intercomparison of CO<sub>2</sub> exchange across North America: Results from the North American Carbon Program site synthesis. Journal of Geophysical Research, 2010, 115, . | 3.3 | 247 |
| 13 | Permafrost carbonâ^'climate feedback is sensitive to deep soil carbon decomposability but not deep soil nitrogen dynamics. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 3752-3757. | 7.1 | 233 |
| 14 | Permafrost thaw and resulting soil moisture changes regulate projected high-latitude CO <sub>2</sub> and CH <sub>4</sub> emissions. Environmental Research Letters, 2015, 10, 094011. | 5.2 | 208 |
| 15 | An improved lake model for climate simulations: Model structure, evaluation, and sensitivity analyses in CESM1. Journal of Advances in Modeling Earth Systems, 2012, 4, . | 3.8 | 198 |
| 16 | Methanogenesis in oxygenated soils is a substantial fraction of wetland methane emissions. Nature Communications, 2017, 8, 1567. | 12.8 | 195 |
| 17 | Weaker soil carbonâ€“climate feedbacks resulting from microbial and abiotic interactions. Nature Climate Change, 2015, 5, 56-60. | 18.8 | 184 |
| 18 | Fineâ€root turnover patterns and their relationship to root diameter and soil depth in a 14 Câ€labeled hardwood forest. New Phytologist, 2006, 172, 523-535. | 7.3 | 181 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | The International Land Model Benchmarking (ILAMB) System: Design, Theory, and Implementation. Journal of Advances in Modeling Earth Systems, 2018, 10, 2731-2754. | 3.8 | 175 |
| 20 | Multiple models and experiments underscore large uncertainty in soil carbon dynamics. Biogeochemistry, 2018, 141, 109-123. | 3.5 | 169 |
| 21 | Present state of global wetland extent and wetland methane modelling: methodology of a model inter-comparison project (WETCHIMP). Geoscientific Model Development, 2013, 6, 617-641. | 3.6 | 165 |
| 22 | Greening of the land surface in the worldâ€™s cold regions consistent with recent warming. Nature Climate Change, 2018, 8, 825-828. | 18.8 | 159 |
| 23 | Global stocks and capacity of mineral-associated soil organic carbon. Nature Communications, 2022, 13, . | 12.8 | 146 |
| 24 | On the influence of shrub height and expansion on northern high latitude climate. Environmental Research Letters, 2012, 7, 015503. | 5.2 | 140 |
| 25 | Assessing the Influence of Climate Variability on Atmospheric Concentrations of Polychlorinated Biphenyls Using a Global-Scale Mass Balance Model (BETR-Global). Environmental Science & Technology, 2005, 39, 6749-6756. | 10.0 | 137 |
| 26 | Spatiotemporal Variations in Growing Season Exchanges of CO2, H2O, and Sensible Heat in Agricultural Fields of the Southern Great Plains. Earth Interactions, 2007, 11, 1-21. | 1.5 | 135 |
| 27 | Spatial heterogeneity and environmental predictors of permafrost region soil organic carbon stocks. Science Advances, 2021, 7, . | 10.3 | 130 |
| 28 | Global wetland contribution to 2000â€“2012 atmospheric methane growth rate dynamics. Environmental Research Letters, 2017, 12, 094013. | 5.2 | 129 |
| 29 | A mechanistic model of H218O and C18OO fluxes between ecosystems and the atmosphere: Model description and sensitivity analyses. Global Biogeochemical Cycles, 2002, 16, 42-1-42-14. | 4.9 | 125 |
| 30 | Multiple soil nutrient competition between plants, microbes, and mineral surfaces: model development, parameterization, and example applications in several tropical forests. Biogeosciences, 2016, 13, 341-363. | 3.3 | 125 |
| 31 | Arctic tundra shrubification: a review of mechanisms and impacts on ecosystem carbon balance. Environmental Research Letters, 2021, 16, 053001. | 5.2 | 121 |
| 32 | Future increases in Arctic lightning and fire risk for permafrost carbon. Nature Climate Change, 2021, 11, 404-410. | 18.8 | 103 |
| 33 | The effects of chamber pressurization on soil-surface CO2 flux and the implications for NEE measurements under elevated CO2. Global Change Biology, 1999, 5, 269-281. | 9.5 | 102 |
| 34 | Reviews and syntheses: Four decades of modeling methane cycling in terrestrial ecosystems. Biogeosciences, 2016, 13, 3735-3755. | 3.3 | 102 |
| 35 | Expansion of high-latitude deciduous forests driven by interactions between climate warming and fire. Nature Plants, 2019, 5, 952-958. | 9.3 | 101 |
| 36 | Microbial community-level regulation explains soil carbon responses to long-term litter manipulations. Nature Communications, 2017, 8, 1223. | 12.8 | 99 |

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|---|---|---|---|
| 37 | Five years of whole-soil warming led to loss of subsoil carbon stocks and increased CO <sub>2</sub> efflux. Science Advances, 2021, 7, . | 10.3 | 98 |
| 38 | A mechanistic treatment of the dominant soil nitrogen cycling processes: Model development, testing, and application. Journal of Geophysical Research, 2008, 113, . | 3.3 | 97 |
| 39 | Long residence times of rapidly decomposable soil organic matter: application of a multi-phase, multi-component, and vertically resolved model (BAMS1) to soil carbon dynamics. Geoscientific Model Development, 2014, 7, 1335-1355. | 3.6 | 97 |
| 40 | Intake fraction of primary pollutants: motor vehicle emissions in the South Coast Air Basin. Atmospheric Environment, 2003, 37, 3455-3468. | 4.1 | 94 |
| 41 | Trait-Based Representation of Biological Nitrification: Model Development, Testing, and Predicted Community Composition. Frontiers in Microbiology, 2012, 3, 364. | 3.5 | 94 |
| 42 | Representing leaf and root physiological traits in CLM improves global carbon and nitrogen cycling predictions. Journal of Advances in Modeling Earth Systems, 2016, 8, 598-613. | 3.8 | 93 |
| 43 | A new theory of plantâ€“microbe nutrient competition resolves inconsistencies between observations and model predictions. Ecological Applications, 2017, 27, 875-886. | 3.8 | 90 |
| 44 | Use of stored carbon reserves in growth of temperate tree roots and leaf buds: analyses using radiocarbon measurements and modeling. Global Change Biology, 2009, 15, 992-1014. | 9.5 | 89 |
| 45 | Alaskan soil carbon stocks: spatial variability and dependence on environmental factors. Biogeosciences, 2012, 9, 3637-3645. | 3.3 | 88 |
| 46 | Variability and quasi-decadal changes in the methane budget over the period 2000â€“2012. Atmospheric Chemistry and Physics, 2017, 17, 11135-11161. | 4.9 | 85 |
| 47 | BETR global â€“ A geographically-explicit global-scale multimedia contaminant fate model. Environmental Pollution, 2011, 159, 1442-1445. | 7.5 | 82 |
| 48 | WETCHIMP-WSL: intercomparison of wetland methane emissions models over West Siberia. Biogeosciences, 2015, 12, 3321-3349. | 3.3 | 81 |
| 49 | Controls on terrestrial carbon feedbacks by productivity versus turnover in the CMIP5 Earth System Models. Biogeosciences, 2015, 12, 5211-5228. | 3.3 | 81 |
| 50 | 20thÂcentury changes in carbon isotopes and water-use efficiency: tree-ring-based evaluation of the CLM4.5 and LPX-Bern models. Biogeosciences, 2017, 14, 2641-2673. | 3.3 | 81 |
| 51 | A total quasi-steady-state formulation of substrate uptake kinetics in complex networks and an example application to microbial litter decomposition. Biogeosciences, 2013, 10, 8329-8351. | 3.3 | 79 |
| 52 | FLUXNET-CH<sub>4</sub>: a global, multi-ecosystem dataset and analysis of methane seasonality from freshwater wetlands. Earth System Science Data, 2021, 13, 3607-3689. | 9.9 | 79 |
| 53 | Measuring and modeling the spectrum of fineâ€root turnover times in three forests using isotopes, minirhizotrons, and the Radix model. Global Biogeochemical Cycles, 2010, 24, . | 4.9 | 78 |
| 54 | Physical and biogeochemical controls over terrestrial ecosystem responses to nitrogen deposition. Biogeochemistry, 2001, 54, 1-39. | 3.5 | 76 |

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|---|---|---|---|
| 55 | Dynamic Behavior of Semivolatile Organic Compounds in Indoor Air. 2. Nicotine and Phenanthrene with Carpet and Wallboard. Environmental Science & Technology, 2001, 35, 560-567. | 10.0 | 75 |
| 56 | Representing Nitrogen, Phosphorus, and Carbon Interactions in the E3SM Land Model: Development and Global Benchmarking. Journal of Advances in Modeling Earth Systems, 2019, 11, 2238-2258. | 3.8 | 74 |
| 57 | Characterizing the performance of ecosystem models across time scales: A spectral analysis of the North American Carbon Program site-level synthesis. Journal of Geophysical Research, 2011, 116, . | 3.3 | 72 |
| 58 | Influence of clouds and diffuse radiation on ecosystemâ€atmosphere CO<sub>2</sub> and CO<sup>18</sup>O exchanges. Journal of Geophysical Research, 2009, 114, . | 3.3 | 71 |
| 59 | Combined effects of short term rainfall patterns and soil texture on soil nitrogen cycling â€" A modeling analysis. Journal of Contaminant Hydrology, 2010, 112, 141-154. | 3.3 | 71 |
| 60 | Sensitivity of wetland methane emissions to model assumptions: application and model testing against site observations. Biogeosciences, 2012, 9, 2793-2819. | 3.3 | 68 |
| 61 | Empirical estimates to reduce modeling uncertainties of soil organic carbon in permafrost regions: a review of recent progress and remaining challenges. Environmental Research Letters, 2013, 8, 035020. | 5.2 | 68 |
| 62 | Effects of Soil Moisture on the Responses of Soil Temperatures to Climate Change in Cold Regions*. Journal of Climate, 2013, 26, 3139-3158. | 3.2 | 68 |
| 63 | Predicting the effect of climate change on wildfire behavior and initial attack success. Climatic Change, 2008, 87, 251-264. | 3.6 | 65 |
| 64 | 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. | 3.8 | 65 |
| 65 | Climate regime shift and forest loss amplify fire in Amazonian forests. Global Change Biology, 2020, 26, 5874-5885. | 9.5 | 62 |
| 66 | PeRL: aÂcircum-Arctic Permafrost Region Pond andÂLakeÂdatabase. Earth System Science Data, 2017, 9, 317-348. | 9.9 | 62 |
| 67 | A global traitâ€based approach to estimate leaf nitrogen functional allocation from observations. Ecological Applications, 2017, 27, 1421-1434. | 3.8 | 59 |
| 68 | Identifying dominant environmental predictors of freshwater wetland methane fluxes across diurnal to seasonal time scales. Global Change Biology, 2021, 27, 3582-3604. | 9.5 | 59 |
| 69 | NLOSS: A MECHANISTIC MODEL OF DENITRIFIED N2O AND N2 EVOLUTION FROM SOIL. Soil Science, 2000, 165, 237-249. | 0.9 | 58 |
| 70 | Where do fossil fuel carbon dioxide emissions from California go? An analysis based on radiocarbon observations and an atmospheric transport model. Journal of Geophysical Research, 2008, 113, . | 3.3 | 56 |
| 71 | ForCent model development and testing using the Enriched Background Isotope Study experiment. Journal of Geophysical Research, 2010, 115, . | 3.3 | 56 |
| 72 | Improved modelling of soil nitrogen losses. Nature Climate Change, 2015, 5, 705-706. | 18.8 | 56 |

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| 73 | Regional trends and drivers of the global methane budget. Global Change Biology, 2022, 28, 182-200. | 9.5 | 56 |
| 74 | 18 O composition of CO2 and H2 O ecosystem pools and fluxes in a tallgrass prairie: Simulations and comparisons to measurements. Global Change Biology, 2003, 9, 1567-1581. | 9.5 | 54 |
| 75 | Root traits explain observed tundra vegetation nitrogen uptake patterns: Implications for traitâ€based land models. Journal of Geophysical Research G: Biogeosciences, 2016, 121, 3101-3112. | 3.0 | 52 |
| 76 | Changes in precipitation and air temperature contribute comparably to permafrost degradation in a warmer climate. Environmental Research Letters, 2021, 16, 024008. | 5.2 | 52 |
| 77 | Combining meteorology, eddy fluxes, isotope measurements, and modeling to understand environmental controls of carbon isotope discrimination at the canopy scale. Global Change Biology, 2006, 12, 710-730. | 9.5 | 51 |
| 78 | A new top boundary condition for modeling surface diffusive exchange of a generic volatile tracer: theoretical analysis and application to soil evaporation. Hydrology and Earth System Sciences, 2013, 17, 873-893. | 4.9 | 51 |
| 79 | Observed allocations of productivity and biomass, and turnover times in tropical forests are not accurately represented in CMIP5 Earth system models. Environmental Research Letters, 2015, 10, 064017. | 5.2 | 51 |
| 80 | CO <sub>2</sub> fertilization of terrestrial photosynthesis inferred from site to global scales. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2115627119. | 7.1 | 51 |
| 81 | CLM4-BeTR, a generic biogeochemical transport and reaction module for CLM4: model development, evaluation, and application. Geoscientific Model Development, 2013, 6, 127-140. | 3.6 | 50 |
| 82 | Fineâ€root mortality rates in a temperate forest: estimates using radiocarbon data and numerical modeling. New Phytologist, 2009, 184, 387-398. | 7.3 | 49 |
| 83 | Impacts of climate extremes on gross primary production under global warming. Environmental Research Letters, 2014, 9, 094011. | 5.2 | 49 |
| 84 | Vulnerability of Amazon forests to storm-driven tree mortality. Environmental Research Letters, 2018, 13, 054021. | 5.2 | 49 |
| 85 | Ecosystem Feedbacks to Climate Change in California: Development, Testing, and Analysis Using a Coupled Regional Atmosphere and Land Surface Model (WRF3â€“CLM3.5). Earth Interactions, 2011, 15, 1-38. | 1.5 | 46 |
| 86 | Incorporating root hydraulic redistribution in <scp>CLM</scp>4.5: Effects on predicted site and global evapotranspiration, soil moisture, and water storage. Journal of Advances in Modeling Earth Systems, 2015, 7, 1828-1848. | 3.8 | 46 |
| 87 | Landâ€atmosphere coupling and climate prediction over the U.S. Southern Great Plains. Journal of Geophysical Research D: Atmospheres, 2016, 121, 12,125. | 3.3 | 46 |
| 88 | Earlier leaf-out warms air in the north. Nature Climate Change, 2020, 10, 370-375. | 18.8 | 45 |
| 89 | A multi-year record of airborne CO<sub>2</sub> observations in the US Southern Great Plains. Atmospheric Measurement Techniques, 2013, 6, 751-763. | 3.1 | 44 |
| 90 | Scaling impacts on environmental controls and spatial heterogeneity of soil organic carbon stocks. Biogeosciences, 2015, 12, 3993-4004. | 3.3 | 42 |

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| 91 | Abiotic and Biotic Controls on Soil Organoâ€“Mineral Interactions: Developing Model Structures to Analyze Why Soil Organic Matter Persists. Reviews in Mineralogy and Geochemistry, 2019, 85, 329-348. | 4.8 | 42 |
| 92 | Impact of agricultural practice on regional climate in a coupled land surface mesoscale model. Journal of Geophysical Research, 2005, 110, . | 3.3 | 41 |
| 93 | Enhanced methane emissions from tropical wetlands during the 2011 La NiÃ±a. Scientific Reports, 2017, 7, 45759. | 3.3 | 41 |
| 94 | Mathematical Modelling of Arctic Polygonal Tundra with <i>Ecosys:</i> 2. Microtopography Determines How CO<sub>2</sub> and CH<sub>4</sub> Exchange Responds to Changes in Temperature and Precipitation. Journal of Geophysical Research G: Biogeosciences, 2017, 122, 3174-3187. | 3.0 | 41 |
| 95 | Characterizing coarse-resolution watershed soil moisture heterogeneity using fine-scale simulations. Hydrology and Earth System Sciences, 2014, 18, 2463-2483. | 4.9 | 40 |
| 96 | Observed variation in soil properties can drive large variation in modelled forest functioning and composition during tropical forest secondary succession. New Phytologist, 2019, 223, 1820-1833. | 7.3 | 40 |
| 97 | Mathematical Modelling of Arctic Polygonal Tundra with <i>Ecosys</i>: 1. Microtopography Determines How Active Layer Depths Respond to Changes in Temperature and Precipitation. Journal of Geophysical Research G: Biogeosciences, 2017, 122, 3161-3173. | 3.0 | 38 |
| 98 | Accelerated Nutrient Cycling and Increased Light Competition Will Lead to 21st Century Shrub Expansion in North American Arctic Tundra. Journal of Geophysical Research G: Biogeosciences, 2018, 123, 1683-1701. | 3.0 | 38 |
| 99 | Weaker landâ€“climate feedbacks from nutrient uptake during photosynthesis-inactive periods. Nature Climate Change, 2018, 8, 1002-1006. | 18.8 | 37 |
| 100 | Mathematical treatment of isotopologue and isotopomer speciation and fractionation in biochemical kinetics. Geochimica Et Cosmochimica Acta, 2010, 74, 1823-1835. | 3.9 | 36 |
| 101 | Active-Layer Thickness across Alaska: Comparing Observation-Based Estimates with CMIP5 Earth System Model Predictions. Soil Science Society of America Journal, 2014, 78, 894-902. | 2.2 | 36 |
| 102 | The changing faces of soil organic matter research. European Journal of Soil Science, 2018, 69, 23-30. | 3.9 | 35 |
| 103 | Meta-analysis of high-latitude nitrogen-addition and warming studies implies ecological mechanisms overlooked by land models. Biogeosciences, 2014, 11, 6969-6983. | 3.3 | 34 |
| 104 | The fan of influence of streams and channel feedbacks to simulated land surface water and carbon dynamics. Water Resources Research, 2016, 52, 880-902. | 4.2 | 34 |
| 105 | Substantial hysteresis in emergent temperature sensitivity of global wetland CH4 emissions. Nature Communications, 2021, 12, 2266. | 12.8 | 34 |
| 106 | Seasonal and interannual variations of carbon and oxygen isotopes of respired CO2in a tallgrass prairie: Measurements and modeling results from 3 years with contrasting water availability. Journal of Geophysical Research, 2006, 111, . | 3.3 | 33 |
| 107 | Boreal lakes moderate seasonal and diurnal temperature variation and perturb atmospheric circulation: analyses in the Community Earth System Model 1 (CESM1). Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 64, 15639. | 1.7 | 31 |
| 108 | Influence of terrestrial ecosystems and topography on coastal CO2measurements: A case study at Trinidad Head, California. Journal of Geophysical Research, 2005, 110, . | 3.3 | 30 |

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| 109 | Evaluating the agreement between measurements and models of net ecosystem exchange at different times and timescales using wavelet coherence: an example using data from the North American Carbon Program Site-Level Interim Synthesis. Biogeosciences, 2013, 10, 6893-6909. | 3.3 | 30 |
| 110 | Seasonal and Interannual Patterns and Controls of Hydrological Fluxes in an Amazon Floodplain Lake With a Surfaceâ€Subsurface Process Model. Water Resources Research, 2019, 55, 3056-3075. | 4.2 | 30 |
| 111 | Regional CO<sub>2</sub> and latent heat surface fluxes in the Southern Great Plains: Measurements, modeling, and scaling. Journal of Geophysical Research, 2009, 114, . | 3.3 | 29 |
| 112 | Impacts of Agricultural Nitrogen on the Environment and Strategies to Reduce these Impacts. Procedia Environmental Sciences, 2015, 29, 303. | 1.4 | 29 |
| 113 | Windthrow Variability in Central Amazonia. Atmosphere, 2017, 8, 28. | 2.3 | 29 |
| 114 | 21st century tundra shrubification could enhance net carbon uptake of North America Arctic tundra under an RCP8.5 climate trajectory. Environmental Research Letters, 2018, 13, 054029. | 5.2 | 29 |
| 115 | Separating the effects of phenology and diffuse radiation on gross primary productivity in winter wheat. Journal of Geophysical Research G: Biogeosciences, 2016, 121, 1903-1915. | 3.0 | 28 |
| 116 | Improving Representation of Deforestation Effects on Evapotranspiration in the E3SM Land Model. Journal of Advances in Modeling Earth Systems, 2019, 11, 2412-2427. | 3.8 | 28 |
| 117 | Representing plant diversity in land models: An evolutionary approach to make â€œFunctional Typesâ€• more functional. Global Change Biology, 2022, 28, 2541-2554. | 9.5 | 28 |
| 118 | Impacts of a new bareâ€soil evaporation formulation on site, regional, and global surface energy and water budgets in CLM4. Journal of Advances in Modeling Earth Systems, 2013, 5, 558-571. | 3.8 | 26 |
| 119 | A Theory of Effective Microbial Substrate Affinity Parameters in Variably Saturated Soils and an Example Application to Aerobic Soil Heterotrophic Respiration. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 918-940. | 3.0 | 26 |
| 120 | Soil-gas entry into houses driven by atmospheric pressure fluctuationsâ€"The influence of soil properties. Atmospheric Environment, 1997, 31, 1487-1495. | 4.1 | 25 |
| 121 | A modeling study of the impact of the Î´18O value of near-surface soil water on the Î´18O value of the soil-surface CO2 flux. Geochimica Et Cosmochimica Acta, 2005, 69, 1939-1946. | 3.9 | 25 |
| 122 | Coupling a three-dimensional subsurface flow and transport model with a land surface model to simulate streamâ€“aquiferâ€“land interactions (CPÂv1.0). Geoscientific Model Development, 2017, 10, 4539-4562. | 3.6 | 25 |
| 123 | Competitor and substrate sizes and diffusion together define enzymatic depolymerization and microbial substrate uptake rates. Soil Biology and Biochemistry, 2019, 139, 107624. | 8.8 | 25 |
| 124 | Size Distributions of Arctic Waterbodies Reveal Consistent Relations in Their Statistical Moments in Space and Time. Frontiers in Earth Science, 2019, 7, . | 1.8 | 25 |
| 125 | Aqueous and gaseous nitrogen losses induced by fertilizer application. Journal of Geophysical Research, 2009, 114, . | 3.3 | 24 |
| 126 | A multi-scale comparison of modeled and observed seasonal methane emissions in northern wetlands. Biogeosciences, 2016, 13, 5043-5056. | 3.3 | 24 |

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| 127 | Methane Production Pathway Regulated Proximally by Substrate Availability and Distally by Temperature in a Highâ€Latitude Mire Complex. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 3057-3074. | 3.0 | 24 |
| 128 | Using boundary layer equilibrium to reduce uncertainties in transport models and CO<sub>2</sub> flux inversions. Atmospheric Chemistry and Physics, 2011, 11, 9631-9641. | 4.9 | 23 |
| 129 | Toward improved model structures for analyzing priming: potential pitfalls of using bulk turnover time. Global Change Biology, 2015, 21, 4298-4302. | 9.5 | 23 |
| 130 | The Central Amazon Biomass Sink Under Current and Future Atmospheric CO<sub>2</sub>: Predictions From Bigâ€Leaf and Demographic Vegetation Models. Journal of Geophysical Research G: Biogeosciences, 2020, 125, e2019JG005500. | 3.0 | 23 |
| 131 | Transient competitive complexation in biological kinetic isotope fractionation explains nonsteady isotopic effects: Theory and application to denitrification in soils. Journal of Geophysical Research, 2009, 114, . | 3.3 | 22 |
| 132 | A reduced-order modeling approach to represent subgrid-scale hydrological dynamics for land-surface simulations: application in a polygonal tundra landscape. Geoscientific Model Development, 2014, 7, 2091-2105. | 3.6 | 22 |
| 133 | Temporal evolution of soil moisture statistical fractal and controls by soil texture and regional groundwater flow. Advances in Water Resources, 2015, 86, 155-169. | 3.8 | 22 |
| 134 | Development and evaluation of a variably saturated flow model in the global E3SM Land Model (ELM) version 1.0. Geoscientific Model Development, 2018, 11, 4085-4102. | 3.6 | 22 |
| 135 | Ensemble Machine Learning Approach Improves Predicted Spatial Variation of Surface Soil Organic Carbon Stocks in Data-Limited Northern Circumpolar Region. Frontiers in Big Data, 2020, 3, 528441. | 2.9 | 22 |
| 136 | Deforestation triggering irreversible transition in Amazon hydrological cycle. Environmental Research Letters, 2022, 17, 034037. | 5.2 | 22 |
| 137 | Seasonal and interannual variability in <sup>13</sup>C composition of ecosystem carbon fluxes in the U.S. Southern Great Plains. Tellus, Series B: Chemical and Physical Meteorology, 2022, 63, 181. | 1.6 | 21 |
| 138 | Accurate and efficient prediction of fineâ€resolution hydrologic and carbon dynamic simulations from coarseâ€resolution models. Water Resources Research, 2016, 52, 791-812. | 4.2 | 21 |
| 139 | Attribution of changes in global wetland methane emissions from pre-industrial to present using CLM4.5-BGC. Environmental Research Letters, 2016, 11, 034020. | 5.2 | 21 |
| 140 | SUPECA kinetics for scaling redox reactions in networks of mixed substrates and consumers and an example application to aerobic soil respiration. Geoscientific Model Development, 2017, 10, 3277-3295. | 3.6 | 20 |
| 141 | Evaluation of the WRF lake module (v1.0) and its improvements at a deep reservoir. Geoscientific Model Development, 2019, 12, 2119-2138. | 3.6 | 20 |
| 142 | Lineageâ€based functional types: characterising functional diversity to enhance the representation of ecological behaviour in Land Surface Models. New Phytologist, 2020, 228, 15-23. | 7.3 | 20 |
| 143 | Large carbon cycle sensitivities to climate across a permafrost thaw gradient in subarctic Sweden. Cryosphere, 2019, 13, 647-663. | 3.9 | 19 |
| 144 | Deforestation reshapes land-surface energy-flux partitioning. Environmental Research Letters, 2021, 16, 024014. | 5.2 | 19 |

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|---|---|---|---|
| 145 | Hysteretic temperature sensitivity of wetland CH<sub>4</sub> fluxes explained by substrate availability and microbial activity. Biogeosciences, 2020, 17, 5849-5860. | 3.3 | 19 |
| 146 | Observed and Simulated Sensitivities of Spring Greenup to Preseason Climate in Northern Temperate and Boreal Regions. Journal of Geophysical Research G: Biogeosciences, 2018, 123, 60-78. | 3.0 | 18 |
| 147 | Alaskan carbon-climate feedbacks will be weaker than inferred from short-term experiments. Nature Communications, 2020, 11, 5798. | 12.8 | 18 |
| 148 | Spatiotemporal Assessment of GHG Emissions and Nutrient Sequestration Linked to Agronutrient Runoff in Global Wetlands. Global Biogeochemical Cycles, 2021, 35, e2020GB006816. | 4.9 | 18 |
| 149 | Nitrogen Cycling in an Irrigated Wheat System in Sonora, Mexico: Measurements and Modeling. Nutrient Cycling in Agroecosystems, 2006, 75, 175-186. | 2.2 | 17 |
| 150 | Interannual Variation in Hydrologic Budgets in an Amazonian Watershed with a Coupled Subsurfaceâ€"Land Surface Process Model. Journal of Hydrometeorology, 2017, 18, 2597-2617. | 1.9 | 17 |
| 151 | Impacts of microtopographic snow redistribution and lateral subsurface processes on hydrologic and thermal states in an Arctic polygonal ground ecosystem: a case study using ELM-3D v1.0. Geoscientific Model Development, 2018, 11, 61-76. | 3.6 | 17 |
| 152 | Modeling Climate Change Impacts on an Arctic Polygonal Tundra: 1. Rates of Permafrost Thaw Depend on Changes in Vegetation and Drainage. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 1308-1322. | 3.0 | 17 |
| 153 | Understanding the Stable Isotope Composition of Biosphere-Atmosphere CO2Exchange. Eos, 2008, 89, 94. | 0.1 | 16 |
| 154 | Soil Organic Matter Temperature Sensitivity Cannot be Directly Inferred From Spatial Gradients. Global Biogeochemical Cycles, 2019, 33, 761-776. | 4.9 | 16 |
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