Sebastiaan Luyssaert

List of Publications by Year in Descending Order

124 papers	14,690 citations	49 h-index	121 g-index
167 ext. papers	16,932 ext. citations	11.1 avg, IF	5.91 L-index

#	Paper	IF	Citations
124	Effect of tree demography and flexible root water uptake for modeling the carbon and water cycles of Amazonia. *Ecological Modelling*, **2022**, 469, 109969	3	2
123	Bottom-up approaches for estimating terrestrial GHG budgets: Bookkeeping, process-based modeling, and data-driven methods **2022**, 59-85		
122	Reply to: Old-growth forest carbon sinks overestimated. *Nature*, **2021**, 591, E24-E25	50.4	3
121	Modelled land use and land cover change emissions – a spatio-temporal comparison of different approaches. *Earth System Dynamics*, **2021**, 12, 635-670	4.8	10
120	A triple tree-ring constraint for tree growth and physiology in a global land surface model. *Biogeosciences*, **2021**, 18, 3781-3803	4.6	7
119	Empirical estimates of regional carbon budgets imply reduced global soil heterotrophic respiration. *National Science Review*, **2021**, 8, nwaa145	10.8	30
118	Drought effects on leaf fall, leaf flushing and stem growth in the Amazon forest: reconciling remote sensing data and field observations. *Biogeosciences*, **2021**, 18, 4445-4472	4.6	4
117	Using the International Tree-Ring Data Bank (ITRDB) records as century-long benchmarks for global land-surface models. *Geoscientific Model Development*, **2021**, 14, 5891-5913	6.3	0
116	Presentation and Evaluation of the IPSL-CM6A-LR Climate Model. *Journal of Advances in Modeling Earth Systems*, **2020**, 12, e2019MS002010	7.1	188
115	Drought resistance increases from the individual to the ecosystem level in highly diverse Neotropical rainforest: a meta-analysis of leaf, tree and ecosystem responses to drought. *Biogeosciences*, **2020**, 17, 2621-2645	4.6	7
114	A spatially explicit database of wind disturbances in European forests over the period 2000–2018. *Earth System Science Data*, **2020**, 12, 257-276	10.5	30
113	Different response of surface temperature and air temperature to deforestation in climate models. *Earth System Dynamics*, **2019**, 10, 473-484	4.8	22
112	Reconstructing Taiwan's land cover changes between 1904 and 2015 from historical maps and satellite images. *Scientific Reports*, **2019**, 9, 3643	4.9	13
111	Accounting for carbon and nitrogen interactions in the global terrestrial ecosystem model ORCHIDEE (trunk version, rev 4999): multi-scale evaluation of gross primary production. *Geoscientific Model Development*, **2019**, 12, 4751-4779	6.3	24
110	Unexpectedly large impact of forest management and grazing on global vegetation biomass. *Nature*, **2018**, 553, 73-76	50.4	254
109	Disentangling competitive vs. climatic drivers of tropical forest mortality. *Journal of Ecology*, **2018**, 106, 1165-1179	6	20
108	Forests in flux as climate varies. *Nature*, **2018**, 556, 35-37	50.4	2

107	Models meet data: Challenges and opportunities in implementing land management in Earth system models. *Global Change Biology*, **2018**, 24, 1470-1487	11.4	63
106	Accounting for Carbon and Nitrogen interactions in the Global Terrestrial Ecosystem Model ORCHIDEE (trunk version, rev 4999): multi-scale evaluation of gross primary production **2018**,		2
105	Carbon costs and benefits of France's biomass energy production targets. *Carbon Balance and Management*, **2018**, 13, 26	3.6	9
104	Trade-offs in using European forests to meet climate objectives. *Nature*, **2018**, 562, 259-262	50.4	98
103	Representing anthropogenic gross land use change, wood harvest, and forest age dynamics in a global vegetation model ORCHIDEE-MICT v8.4.2. *Geoscientific Model Development*, **2018**, 11, 409-428	6.3	23
102	ORCHIDEE-SOM: modeling soil organic carbon (SOC) and dissolved organic carbon (DOC) dynamics along vertical soil profiles in Europe. *Geoscientific Model Development*, **2018**, 11, 937-957	6.3	28
101	Simulating damage for wind storms in the land surface model ORCHIDEE-CAN (revision 4262). *Geoscientific Model Development*, **2018**, 11, 771-791	6.3	11
100	Sustaining the sequestration efficiency of the European forest sector. *Forest Ecology and Management*, **2017**, 405, 44-55	3.9	25
99	ORCHIDEE-SOM: Modeling soil organic carbon (SOC) and dissolved organic carbon (DOC) dynamics along vertical soil profiles in Europe **2017**,		1
98	Representing anthropogenic gross land use change, wood harvest and forest age dynamics in a global vegetation model ORCHIDEE-MICT (r4259) **2017**,		4
97	Land management: data availability and process understanding for global change studies. *Global Change Biology*, **2017**, 23, 512-533	11.4	99
96	Assimilating satellite-based canopy height within an ecosystem model to estimate aboveground forest biomass. *Geophysical Research Letters*, **2017**, 44, 6823-6832	4.9	9
95	Current European policies are unlikely to jointly foster carbon sequestration and protect biodiversity. *Biological Conservation*, **2016**, 201, 370-376	6.2	51
94	Europe's forest management did not mitigate climate warming. *Science*, **2016**, 351, 597-600	33.3	232
93	Evaluating the performance of land surface model ORCHIDEE-CAN v1.0 on water and energy flux estimation with a single- and multi-layer energy budget scheme. *Geoscientific Model Development*, **2016**, 9, 2951-2972	6.3	36
92	Trends in soil solution dissolved organic carbon (DOC) concentrations across European forests. *Biogeosciences*, **2016**, 13, 5567-5585	4.6	15
91	A multi-layer land surface energy budget model for implicit coupling with global atmospheric simulations. *Geoscientific Model Development*, **2016**, 9, 223-245	6.3	41
90	Evaluating the convergence between eddy-covariance and biometric methods for assessing carbon budgets of forests. *Nature Communications*, **2016**, 7, 13717	17.4	64

89	Reply to 'Uncertain effects of nutrient availability on global forest carbon balance' and 'Data quality and the role of nutrients in forest carbon-use efficiency'. *Nature Climate Change*, **2015**, 5, 960-961	21.4	2
88	Biomass production efficiency controlled by management in temperate and boreal ecosystems. *Nature Geoscience*, **2015**, 8, 843-846	18.3	79
87	New insights in the capability of climate models to simulate the impact of LUC based on temperature decomposition of paired site observations. *Journal of Geophysical Research D: Atmospheres*, **2015**, 120, 5417-5436	4.4	36
86	A vertically discretised canopy description for ORCHIDEE (SVN r2290) and the modifications to the energy, water and carbon fluxes. *Geoscientific Model Development*, **2015**, 8, 2035-2065	6.3	57
85	Reconstructing European forest management from 1600 to 2010. *Biogeosciences*, **2015**, 12, 4291-4316	4.6	108
84	ORCHIDEE-SRC v1.0: an extension of the land surface model ORCHIDEE for simulating short rotation coppice poplar plantations. *Geoscientific Model Development*, **2015**, 8, 1461-1471	6.3	4
83	Land management and land-cover change have impacts of similar magnitude on surface temperature. *Nature Climate Change*, **2014**, 4, 389-393	21.4	304
82	Spatial variability and controls over biomass stocks, carbon fluxes, and resource-use efficiencies across forest ecosystems. *Trees - Structure and Function*, **2014**, 28, 597-611	2.6	44
81	Steeper declines in forest photosynthesis than respiration explain age-driven decreases in forest growth. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 8856-60	11.5	79
80	Fire regimes and variability in aboveground woody biomass in miombo woodland. *Journal of Geophysical Research G: Biogeosciences*, **2014**, 119, 1014-1029	3.7	10
79	Current systematic carbon-cycle observations and the need for implementing a policy-relevant carbon observing system. *Biogeosciences*, **2014**, 11, 3547-3602	4.6	136
78	Forest summer albedo is sensitive to species and thinning: how should we account for this in Earth system models?. *Biogeosciences*, **2014**, 11, 2411-2427	4.6	22
77	Carbon sequestration: managing forests in uncertain times. *Nature*, **2014**, 506, 153-5	50.4	213
76	Nutrient availability as the key regulator of global forest carbon balance. *Nature Climate Change*, **2014**, 4, 471-476	21.4	269
75	Linking variability in soil solution dissolved organic carbon to climate, soil type, and vegetation type. *Global Biogeochemical Cycles*, **2014**, 28, 497-509	5.9	69
74	Response: complexities of sustainable forest use. *GCB Bioenergy*, **2013**, 5, 1-2	5.6	18
73	Anthropogenic perturbation of the carbon fluxes from land to ocean. *Nature Geoscience*, **2013**, 6, 597-607	18.3	695
72	Interactive effects of environmental change and management strategies on regional forest carbon emissions. *Environmental Science & Technology*, **2013**, 47, 13132-40	10.3	39

71	Thinning effects on forest productivity: consequences of preserving old forests and mitigating impacts of fire and drought. *Plant Ecology and Diversity*, **2013**, 6, 73-85	2.2	18
70	Can land use intensity be reliably quantified by using a single self-thinning relationship? Reply to Schall and Ammer **2013**, 23, 677-8		1
69	Simulating boreal forest carbon dynamics after stand-replacing fire disturbance: insights from a global process-based vegetation model. *Biogeosciences*, **2013**, 10, 8233-8252	4.6	11
68	Large-scale bioenergy from additional harvest of forest biomass is neither sustainable nor greenhouse gas neutral. *GCB Bioenergy*, **2012**, 4, 611-616	5.6	218
67	Fertile forests produce biomass more efficiently. *Ecology Letters*, **2012**, 15, 520-6	10	211
66	The European land and inland water CO₂, CO, CH₄ and N₂O balance between 2001 and 2005. *Biogeosciences*, **2012**, 9, 3357-3380	4.6	42
65	Assessing and improving the representativeness of monitoring networks: The European flux tower network example. *Journal of Geophysical Research*, **2011**, 116,		24
64	Biophysical considerations in forestry for climate protection. *Frontiers in Ecology and the Environment*, **2011**, 9, 174-182	5.5	209
63	Quantifying land use and disturbance intensity in forestry, based on the self-thinning relationship **2011**, 21, 3272-3284		45
62	The importance of dissolved organic carbon fluxes for the carbon balance of a temperate Scots pine forest. *Agricultural and Forest Meteorology*, **2011**, 151, 270-278	5.8	46
61	Potential knowledge gain in large-scale simulations of forest carbon fluxes from remotely sensed biomass and height. *Forest Ecology and Management*, **2011**, 261, 515-530	3.9	11
60	Forest annual carbon cost: reply. *Ecology*, **2011**, 92, 1998-2002	4.6	2
59	Response to The European nitrogen cycle: response to Schulze et al, Global Change Biology (2010) 16, pp. 1451–1469 *Global Change Biology*, **2011**, 17, 2758-2761	11.4	
58	Reconstruction and attribution of the carbon sink of European forests between 1950 and 2000. *Global Change Biology*, **2011**, 17, 3274-3292	11.4	79
57	Regional carbon dioxide implications of forest bioenergy production. *Nature Climate Change*, **2011**, 1, 419-423	21.4	152
56	Soil [N] modulates soil C cycling in CO2-fumigated tree stands: a meta-analysis. *Plant, Cell and Environment*, **2010**, 33, 2001-11	8.4	41
55	Assimilation exceeds respiration sensitivity to drought: A FLUXNET synthesis. *Global Change Biology*, **2010**, 16, 657-670	11.4	203
54	The European carbon balance. Part 2: croplands. *Global Change Biology*, **2010**, 16, 1409-1428	11.4	165

53	The European carbon balance. Part 3: forests. *Global Change Biology*, **2010**, 16, 1429-1450	11.4	206
52	The European carbon balance. Part 4: integration of carbon and other trace-gas fluxes. *Global Change Biology*, **2010**, 16, 1451-1469	11.4	138
51	Reduction of forest soil respiration in response to nitrogen deposition. *Nature Geoscience*, **2010**, 3, 315-322	12.3	988
50	Contrasting response of European forest and grassland energy exchange to heatwaves. *Nature Geoscience*, **2010**, 3, 722-727	18.3	380
49	Forest annual carbon cost: a global-scale analysis of autotrophic respiration. *Ecology*, **2010**, 91, 652-61	4.6	137
48	Influence of spring and autumn phenological transitions on forest ecosystem productivity. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2010**, 365, 3227-46	5.8	594
47	Terrestrial gross carbon dioxide uptake: global distribution and covariation with climate. *Science*, **2010**, 329, 834-8	33.3	1638
46	Can we reconcile atmospheric estimates of the Northern terrestrial carbon sink with land-based accounting?. *Current Opinion in Environmental Sustainability*, **2010**, 2, 225-230	7.2	63
45	Bio-energy retains its mitigation potential under elevated CO2. *PLoS ONE*, **2010**, 5, e11648	3.7	16
44	Latitudinal patterns of magnitude and interannual variability in net ecosystem exchange regulated by biological and environmental variables. *Global Change Biology*, **2009**, 15, 2905-2920	11.4	84
43	The European carbon balance. Part 4: integration of carbon and other trace-gas fluxes. *Global Change Biology*, **2009**, 16, 2399-2399	11.4	5
42	Importance of methane and nitrous oxide for Europe's terrestrial greenhouse-gas balance. *Nature Geoscience*, **2009**, 2, 842-850	18.3	272
41	Toward a consistency cross-check of eddy covariance flux-based and biometric estimates of ecosystem carbon balance. *Global Biogeochemical Cycles*, **2009**, 23, n/a-n/a	5.9	51
40	Temperate and Boreal Old-Growth Forests: How do Their Growth Dynamics and Biodiversity Differ from Young Stands and Managed Forests?. *Ecological Studies*, **2009**, 343-366	1.1	15
39	Net carbon dioxide losses of northern ecosystems in response to autumn warming. *Nature*, **2008**, 451, 49-52	50.4	759
38	Old-growth forests as global carbon sinks. *Nature*, **2008**, 455, 213-5	50.4	1110
37	Carbon accumulation in European forests. *Nature Geoscience*, **2008**, 1, 425-429	18.3	227
36	Modeling the effects of varying data quality on trend detection in environmental monitoring. *Ecological Informatics*, **2007**, 2, 167-176	4.2	15

35	Assessing the ability of three land ecosystem models to simulate gross carbon uptake of forests from boreal to Mediterranean climate in Europe. *Biogeosciences*, **2007**, 4, 647-656	4.6	65
34	Photosynthesis drives anomalies in net carbon-exchange of pine forests at different latitudes. *Global Change Biology*, **2007**, 13, 2110-2127	11.4	59
33	CO2 balance of boreal, temperate, and tropical forests derived from a global database. *Global Change Biology*, **2007**, 13, 2509-2537	11.4	744
32	Acidification of forested podzols in North Belgium during the period 1950-2000. *Science of the Total Environment*, **2006**, 361, 189-95	10.2	29
31	Comment on "In defense of plants as biomonitors of soil quality". *Environmental Pollution*, **2006**, 144, 715	9.3	
30	Acceptance of sticks, carrots and sermons as policy instruments for directing private forest management. *Forest Policy and Economics*, **2006**, 9, 285-296	3.6	60
29	Forest groups as support to private forest owners in developing close-to-nature management. *Forest Policy and Economics*, **2005**, 7, 589-601	3.6	26
28	Use and abuse of trace metal concentrations in plant tissue for biomonitoring and phytoextraction. *Environmental Pollution*, **2005**, 138, 1-4	9.3	104
27	Are N and S deposition altering the mineral composition of Norway spruce and Scots pine needles in Finland?. *Environmental Pollution*, **2005**, 138, 5-17	9.3	11
26	Does the commonly used estimator of nutrient resorption in tree foliage actually measure what it claims to?. *Oecologia*, **2005**, 144, 177-86	2.9	18
25	Metal uptake by young trees from dredged brackish sediment: limitations and possibilities for phytoextraction and phytostabilisation. *Science of the Total Environment*, **2004**, 326, 209-15	10.2	120
24	Evaluation of forest nutrition based on large-scale foliar surveys: are nutrition profiles the way of the future?. *Journal of Environmental Monitoring*, **2004**, 6, 160-7		18
23	Comparison of throughfall and soil solution chemistry between a high-density Corsican pine stand and a naturally regenerated silver birch stand. *Environmental Pollution*, **2004**, 131, 93-105	9.3	49
22	Phytoremediation prospects of willow stands on contaminated sediment: a field trial. *Environmental Pollution*, **2003**, 126, 275-82	9.3	173
21	Support, shape and number of replicate samples for tree foliage analysis. *Journal of Environmental Monitoring*, **2003**, 5, 500-4		2
20	A model of wind-influenced leaf litterfall in a mixed hardwood forest. *Canadian Journal of Forest Research*, **2003**, 33, 201-209	1.9	47
19	Sampling procedure for the foliar analysis of deciduous trees. *Journal of Environmental Monitoring*, **2002**, 4, 858-64		21
18	Should foliar cadmium concentrations be expressed on a dry weight or dry ash weight basis?. *Journal of Environmental Monitoring*, **2002**, 4, 408-12		2

17	Earthworm biomass and species diversity in windthrow sites of a temperate lowland forest. *Pedobiologia*, **2002**, 46, 440-451	1.7	41
16	Dredged sediment as a substrate for biomass production of willow trees established using the SALIMAT technique. *Biomass and Bioenergy*, **2001**, 21, 81-90	5.3	26
15	Preliminary results of afforestation of brackish sludge mounds. *Ecological Engineering*, **2001**, 16, 567-572	3.9	9
14	Cadmium variability in leaves of a Salix fragilis: simulation and implications for leaf sampling. *Canadian Journal of Forest Research*, **2001**, 31, 313-321	1.9	9
13	Cd and Zn concentrations in small mammals and willow leaves on disposal facilities for dredged material. *Environmental Pollution*, **2001**, 115, 17-22	9.3	46
12	Cadmium variability in leaves of a Salix fragilis: simulation and implications for leaf sampling. *Canadian Journal of Forest Research*, **2001**, 31, 313-321	1.9	9
11	Current systematic carbon cycle observations and needs for implementing a policy-relevant carbon observing system		10
10	Summertime canopy albedo is sensitive to forest thinning		1
9	Simulating boreal forest carbon dynamics after stand-replacing fire disturbance: insights from a global process-based vegetation model		4
8	Reconstructing European forest management from 1600 to 2010		7
7	The greenhouse gas balance of European grasslands		39
6	The European CO₂, CO, CH₄ and N₂O balance between 2001 and 2005		2
5	Different response of surface temperature and air temperature to deforestation in climate models		4
4	A multi-level canopy radiative transfer scheme for ORCHIDEE (SVN r2566), based on a domain-averaged structure factor		8
3	Using the International Tree-Ring Data Bank (ITRDB) records as century-long benchmarks for land-surface models		1
2	A vertically discretised canopy description for ORCHIDEE (SVN r2290) and the modifications to the energy, water and carbon fluxes		5
1	A multi-layer land surface energy budget model for implicit coupling with global atmospheric simulations		5