Annikki MÃ¤kelÃ¤

List of Publications by Year
in descending order

137 papers	7,182 citations	50276 46 h-index	64796 79 g-index
142 all docs	142 docs citations	142 times ranked	8167 citing authors

#	Article	IF	Citations
1	A model bridging waterlogging, stomatal behavior and water use in trees in drained peatland. Tree Physiology, 2022, , .	3.1	6
2	Do mycorrhizal symbionts drive latitudinal trends in photosynthetic carbon use efficiency and carbon sequestration in boreal forests?. Forest Ecology and Management, 2022, 520, 120355.	3.2	4
3	Linking canopyâ€scale mesophyll conductance and phloem sugar Î´¹³C using empirical and modelling approaches. New Phytologist, 2021, 229, 3141-3155.	7.3	11
4	Isotopic Branchpoints: Linkages and Efficiencies in Carbon and Water Budgets. Journal of Geophysical Research G: Biogeosciences, 2021, 126, e2020JG006043.	3.0	0
5	A new method to estimate branch biomass from terrestrial laser scanning data by bridging tree structure models. Annals of Botany, 2021, 128, 737-752.	2.9	7
6	Disaggregating the effects of nitrogen addition on gross primary production in a boreal Scots pine forest. Agricultural and Forest Meteorology, 2021, 301-302, 108337.	4.8	8
7	Wind and gravity in shaping Picea trunks. Trees - Structure and Function, 2021, 35, 1587-1599.	1.9	2
8	Developing a spatially explicit modelling and evaluation framework for integrated carbon sequestration and biodiversity conservation: Application in southern Finland. Science of the Total Environment, 2021, 775, 145847.	8.0	18
9	Sources and sinks of greenhouse gases in the landscape: Approach for spatially explicit estimates. Science of the Total Environment, 2021, 781, 146668.	8.0	9
10	Demonstration of large area forest volume and primary production estimation approach based on Sentinel-2 imagery and process based ecosystem modelling. International Journal of Remote Sensing, 2021, 42, 9467-9489.	2.9	10
11	Plant respiration: Controlled by photosynthesis or biomass?. Global Change Biology, 2020, 26, 1739-1753.	9.5	66
12	Available and missing data to model impact of climate change on European forests. Ecological Modelling, 2020, 416, 108870.	2.5	58
13	TRY plant trait database â€“ enhanced coverage and open access. Global Change Biology, 2020, 26, 119-188.	9.5	1,038
14	Biomass and structure of Norway spruce trees grown in uneven-aged stands in southern Finland. Scandinavian Journal of Forest Research, 2020, 35, 252-261.	1.4	6
15	Mitigation Impact of Different Harvest Scenarios of Finnish Forests That Account for Albedo, Aerosols, and Trade-Offs of Carbon Sequestration and Avoided Emissions. Frontiers in Forests and Global Change, 2020, 3, .	2.3	32
16	Weaker Light Response, Lower Stomatal Conductance and Structural Changes in Old Boreal Conifers Implied by a Bayesian Hierarchical Model. Frontiers in Plant Science, 2020, 11, 579319.	3.6	2
17	Age effect on tree structure and biomass allocation in Scots pine (Pinus sylvestris L.) and Norway spruce (Picea abies [L.] Karst.). Annals of Forest Science, 2020, 77, 1.	2.0	18
18	Organizing principles for vegetation dynamics. Nature Plants, 2020, 6, 444-453.	9.3	95

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19	Correction: Scots pine and Norway spruce foliage biomass in Finland and Sweden â€" testing traditional models vs. the pipe model theory. Canadian Journal of Forest Research, 2020, 50, 444-445.	1.7	0
20	Models of Tree and Stand Dynamics. , 2020, , .		12
21	Scots pine and Norway spruce foliage biomass in Finland and Sweden â€" testing traditional models vs. the pipe model theory. Canadian Journal of Forest Research, 2020, 50, 146-154.	1.7	13
22	Estimating canopy gross primary production by combining phloem stable isotopes with canopy and mesophyll conductances. Plant, Cell and Environment, 2020, 43, 2124-2142.	5.7	11
23	Sensitivity of 21st century simulated ecosystem indicators to model parameters, prescribed climate drivers, RCP scenarios and forest management actions for two Finnish boreal forest sites. Biogeosciences, 2020, 17, 2681-2700.	3.3	12
24	Extending the range of applicability of the semiâ€empirical ecosystem flux model PRELES for varying forest types and climate. Global Change Biology, 2020, 26, 2923-2943.	9.5	18
25	The PROFOUND Database for evaluating vegetation models and simulating climate impacts on European forests. Earth System Science Data, 2020, 12, 1295-1320.	9.9	33
26	Combining the Carbon Balance and Structure into a Core Model. , 2020, , 101-126.		0
27	Tree Structure Revisited: Eco-Evolutionary Models. , 2020, , 161-198.		0
28	Applications and Future Outlook. , 2020, , 245-266.		0
29	Predicting Stand Growth: Parameters, Drivers, and Modular Inputs. , 2020, , 199-221.		0
30	Descriptive Models. , 2020, , 21-46.		0
31	Carbon Balance. , 2020, , 47-66.		0
32	Tree Structure. , 2020, , 67-100.		0
33	Analysis of the NSC Storage Dynamics in Tree Organs Reveals the Allocation to Belowground Symbionts in the Framework of Whole Tree Carbon Balance. Frontiers in Forests and Global Change, 2019, 2, .	2.3	51
34	Ecosystem Services Related to Carbon Cycling â€" Modeling Present and Future Impacts in Boreal Forests. Frontiers in Plant Science, 2019, 10, 343.	3.6	31
35	Bayesian calibration of a carbon balance model PREBAS using data from permanent growth experiments and national forest inventory. Forest Ecology and Management, 2019, 440, 208-257.	3.2	40
36	Seedling emergence in uneven-aged Norway spruce stands in Finland. Scandinavian Journal of Forest Research, 2019, 34, 200-207.	1.4	4

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37	Comparison of population-based algorithms for optimizing thinnings and rotation using a process-based growth model. Scandinavian Journal of Forest Research, 2019, 34, 458-468.	1.4	8
38	A climate-sensitive forest model for assessing impacts of forest management in Europe. Environmental Modelling and Software, 2019, 115, 128-143.	4.5	41
39	Forest carbon allocation modelling under climate change. Tree Physiology, 2019, 39, 1937-1960.	3.1	70
40	Current-year shoot hydraulic structure in two boreal conifersâ€"implications of growth habit on water potential. Tree Physiology, 2019, 39, 1995-2007.	3.1	3
41	New insights into the covariation of stomatal, mesophyll and hydraulic conductances from optimization models incorporating nonstomatal limitations to photosynthesis. New Phytologist, 2018, 217, 571-585.	7.3	135
42	Proxy Indicators for Mapping the End of the Vegetation Active Period in Boreal Forests Inferred from Satellite-Observed Soil Freeze and ERA-Interim Reanalysis Air Temperature. PFG - Journal of Photogrammetry, Remote Sensing and Geoinformation Science, 2018, 86, 169-185.	1.1	1
43	Decomposing sources of uncertainty in climate change projections of boreal forest primary production. Agricultural and Forest Meteorology, 2018, 262, 192-205.	4.8	26
44	Temperature dependence of needle and shoot elongation before bud break in Scots pine. Tree Physiology, 2017, 37, 316-325.	3.1	7
45	Early snowmelt significantly enhances boreal springtime carbon uptake. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 11081-11086.	7.1	84
46	A steady-state stomatal model of balanced leaf gas exchange, hydraulics and maximal sourceâ€"sink flux. Tree Physiology, 2017, 37, 851-868.	3.1	43
47	Evaluation of stand-level hybrid PipeQual model with permanent sample plot data of Norway spruce. Canadian Journal of Forest Research, 2017, 47, 234-245.	1.7	6
48	Effects of Competition, Drought Stress and Photosynthetic Productivity on the Radial Growth of White Spruce in Western Canada. Frontiers in Plant Science, 2017, 8, 1915.	3.6	21
49	Branch age and light conditions determine leaf-area-specific conductivity in current shoots of Scots pine. Tree Physiology, 2016, 36, 994-1006.	3.1	6
50	Bridging empirical and carbon-balance based forest site productivity â€" Significance of below-ground allocation. Forest Ecology and Management, 2016, 372, 64-77.	3.2	22
51	Calibration and validation of a semi-empirical flux ecosystem model for coniferous forests in the Boreal region. Ecological Modelling, 2016, 341, 37-52.	2.5	39
52	Mitigation of climate change with biomass harvesting in Norway spruce stands: are harvesting practices carbon neutral?. Canadian Journal of Forest Research, 2015, 45, 217-225.	1.7	25
53	BAAD: a Biomass And Allometry Database for woody plants. Ecology, 2015, 96, 1445-1445.	3.2	122
54	<scp>CASSIA</scp> â€" a dynamic model for predicting intraâ€annual sink demand and interannual growth variation in <scp>S</scp>cots pine. New Phytologist, 2015, 206, 647-659.	7.3	91

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55	Bayesian calibration, comparison and averaging of six forest models, using data from Scots pine stands across Europe. Forest Ecology and Management, 2013, 289, 255-268.	3.2	79
56	On the economics of Norway spruce stands and carbon storage. Canadian Journal of Forest Research, 2013, 43, 637-648.	1.7	33
57	Assimilate transport in phloem sets conditions for leaf gas exchange. Plant, Cell and Environment, 2013, 36, 655-669.	5.7	161
58	En route to improved phenological models: can space-for-time substitution give guidance?. Tree Physiology, 2013, 33, 1253-1255.	3.1	10
59	Duration of shoot elongation in Scots pine varies within the crown and between years. Annals of Botany, 2013, 112, 1181-1191.	2.9	19
60	Crown-rise and crown-length dynamics: application to loblolly pine. Forestry, 2013, 86, 371-375.	2.3	25
61	Predicting forest growth based on airborne light detection and ranging data, climate data, and a simplified process-based model. Canadian Journal of Forest Research, 2013, 43, 364-375.	1.7	14
62	Does canopy mean nitrogen concentration explain variation in canopy light use efficiency across 14 contrasting forest sites?. Tree Physiology, 2012, 32, 200-218.	3.1	23
63	On guiding principles for carbon allocation in eco-physiological growth models. Tree Physiology, 2012, 32, 644-647.	3.1	12
64	Using stand-scale forest models for estimating indicators of sustainable forest management. Forest Ecology and Management, 2012, 285, 164-178.	3.2	48
65	Modeling forest stand dynamics from optimal balances of carbon and nitrogen. New Phytologist, 2012, 194, 961-971.	7.3	39
66	Applying a process-based model in Norway spruce management. Forest Ecology and Management, 2012, 265, 102-115.	3.2	34
67	Models relating stem growth to crown length dynamics: application to loblolly pine and Norway spruce. Trees - Structure and Function, 2012, 26, 469-478.	1.9	30
68	Estimating forest carbon fluxes for large regions based on process-based modelling, NFI data and Landsat satellite images. Forest Ecology and Management, 2011, 262, 2364-2377.	3.2	25
69	Within crown variation in the relationship between foliage biomass and sapwood area in jack pine. Tree Physiology, 2011, 31, 22-29.	3.1	23
70	How Forest Management and Climate Change Affect the Carbon Sequestration of a Norway Spruce Stand?(<Special Issue>Multipurpose Forest Management). Journal of Forest Planning, 2011, 16, 107-120.	0.1	7
71	Modeling acclimation of photosynthesis to temperature in evergreen conifer forests. New Phytologist, 2010, 188, 175-186.	7.3	26
72	Selfâ€shading affects allometric scaling in trees. Functional Ecology, 2010, 24, 723-730.	3.6	66

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73	A physiological model of softwood cambial growth. Tree Physiology, 2010, 30, 1235-1252.	3.1	96
74	Regeneration and tree growth dynamics of<i>Picea abies</i>,<i>Betula pendula and Betula pubescens</i>in regeneration areas treated with spot mounding in southern Finland. Scandinavian Journal of Forest Research, 2010, 25, 213-223.	1.4	13
75	Estimating annual GPP, NPP and stem growth in Finland using summary models. Forest Ecology and Management, 2010, 259, 524-533.	3.2	39
76	A comparison of carbon assessment methods for optimizing timber production and carbon sequestration in Scots pine stands. Forest Ecology and Management, 2010, 260, 1726-1734.	3.2	27
77	Predicting lumber grade and by-product yields for Scots pine trees. Forest Ecology and Management, 2009, 258, 146-158.	3.2	23
78	Optimal Function Explains Forest Responses to Global Change. BioScience, 2009, 59, 127-139.	4.9	92
79	Optimal coâ€allocation of carbon and nitrogen in a forest stand at steady state. New Phytologist, 2008, 180, 114-123.	7.3	89
80	Developing an empirical model of stand GPP with the LUE approach: analysis of eddy covariance data at five contrasting conifer sites in Europe. Global Change Biology, 2008, 14, 92-108.	9.5	132
81	Predicting timber properties from tree measurements at felling: Evaluation of the RetroSTEM model and TreeViz software for Norway spruce. Forest Ecology and Management, 2008, 255, 3524-3533.	3.2	7
82	Effects of thinning and fertilization on wood properties and economic returns for Norway spruce. Forest Ecology and Management, 2008, 256, 1280-1289.	3.2	36
83	Stem form and branchiness of Norway spruce as a sawn timberâ€"Predicted by a process based model. Forest Ecology and Management, 2007, 241, 209-222.	3.2	43
84	Economic analysis of stand establishment for Scots pine. Canadian Journal of Forest Research, 2006, 36, 1179-1189.	1.7	28
85	Picea abies sapwood width: Variations within and between trees. Scandinavian Journal of Forest Research, 2006, 21, 41-53.	1.4	54
86	Modelling five years of weather-driven variation of GPP in a boreal forest. Agricultural and Forest Meteorology, 2006, 139, 382-398.	4.8	87
87	The quarter-power scaling model does not imply size-invariant hydraulic resistance in plants. Journal of Theoretical Biology, 2006, 243, 283-285.	1.7	28
88	Development of biomass proportions in Norway spruce (Picea abies [L.] Karst.). Trees - Structure and Function, 2006, 20, 111-121.	1.9	42
89	CROWN RATIO INFLUENCES ALLOMETRIC SCALING IN TREES. Ecology, 2006, 87, 2967-2972.	3.2	103
90	Bridging process-based and empirical approaches to modeling tree growth. Tree Physiology, 2005, 25, 769-779.	3.1	98

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91	Carbon budget for Scots pine trees: effects of size, competition and site fertility on growth allocation and production. Tree Physiology, 2005, 25, 17-30.	3.1	64
92	Analysis of biomass accumulation and stem size distributions over long periods in managed stands of Pinus sylvestris in Finland using the 3-PG model. Tree Physiology, 2005, 25, 781-792.	3.1	46
93	Effects of tree size and position on pipe model ratios in Scots pine. Canadian Journal of Forest Research, 2005, 35, 1294-1304.	1.7	40
94	Acclimation of photosynthetic capacity in Scots pine to the annual cycle of temperature. Tree Physiology, 2004, 24, 369-376.	3.1	169
95	Potential litterfall of Scots pine branches in southern Finland. Ecological Modelling, 2004, 180, 305-315.	2.5	44
96	Crown development in Norway spruce [Picea abies (L.) Karst.]. Trees - Structure and Function, 2004, 18, 408.	1.9	67
97	Connecting a process-based forest growth model to stand-level economic optimization. Canadian Journal of Forest Research, 2004, 34, 2060-2073.	1.7	44
98	Air temperature triggers the recovery of evergreen boreal forest photosynthesis in spring. Global Change Biology, 2003, 9, 1410-1426.	9.5	273
99	Crown rise due to competition drives biomass allocation in silver birch. Canadian Journal of Forest Research, 2003, 33, 2395-2404.	1.7	80
100	Predicting basal area of Scots pine branches. Forest Ecology and Management, 2003, 179, 351-362.	3.2	20
101	Generating 3D sawlogs with a process-based growth model. Forest Ecology and Management, 2003, 184, 337-354.	3.2	60
102	Process-based modelling of tree and stand growth: towards a hierarchical treatment of multiscale processes. Canadian Journal of Forest Research, 2003, 33, 398-409.	1.7	51
103	Annual pattern of photosynthesis in Scots pine in the boreal zone. Tree Physiology, 2003, 23, 145-155.	3.1	64
104	Derivation of stem taper from the pipe theory in a carbon balance framework. Tree Physiology, 2002, 22, 891-905.	3.1	104
105	Challenges and opportunities of the optimality approach in plant ecology. Silva Fennica, 2002, 36, .	1.3	37
106	A method for generating stand structures using Gibbs marked point process. Silva Fennica, 2002, 36, .	1.3	17
107	Vertical structure of Scots pine crowns in different age and size classes. Trees - Structure and Function, 2001, 15, 385-392.	1.9	58
108	Estimation of fine root mortality and growth from simple measurements: a method based on system dynamics. Trees - Structure and Function, 2000, 14, 316-323.	1.9	21

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109	Process-based models for forest ecosystem management: current state of the art and challenges for practical implementation. Tree Physiology, 2000, 20, 289-298.	3.1	314
110	Needle and stem wood production in Scots pine (Pinus sylvestris) trees of different age, size and competitive status. Tree Physiology, 2000, 20, 527-533.	3.1	63
111	Volume growth and survival graphs: a method for evaluating process-based forest growth models. Tree Physiology, 2000, 20, 357-365.	3.1	16
112	Application of volume growth and survival graphs in the evaluation of four process-based forest growth models. Tree Physiology, 2000, 20, 347-355.	3.1	45
113	Temperature Dependence of Old Soil Organic Matter. Ambio, 2000, 29, 56-57.	5.5	8
114	Surprising implications of the optimality hypothesis of stomatal regulation gain support in a field test. Functional Plant Biology, 2000, 27, 77.	2.1	7
115	Acclimation in dynamic models based on structural relationships. Functional Ecology, 1999, 13, 145-156.	3.6	19
116	Field evidence for the optimality hypothesis of gas exchange in plants. Functional Plant Biology, 1999, 26, 239.	2.1	47
117	Model analysis of the effects of soil age, fires and harvesting on the carbon storage of boreal forest soils. European Journal of Soil Science, 1998, 49, 407-416.	3.9	94
118	Impacts of size and competition on tree form and distribution of aboveground biomass in Scots pine. Canadian Journal of Forest Research, 1998, 28, 216-227.	1.7	86
119	An application of process-based modelling to the development of branchiness in Scots pine.. Silva Fennica, 1997, 31, .	1.3	25
120	Optimal Control of Gas Exchange during Drought: Theoretical Analysis. Annals of Botany, 1996, 77, 461-468.	2.9	168
121	Optimal Control of Gas Exchange during Drought: Empirical Evidence. Annals of Botany, 1996, 77, 469-476.	2.9	52
122	Effects of age and site quality on the distribution of biomass in Scots pine (Pinus sylvestris L.). Trees - Structure and Function, 1996, 10, 231-238.	1.9	103
123			

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127	Performance analysis of a processâ€based stand growth model using Monte Carlo techniques. Scandinavian Journal of Forest Research, 1988, 3, 315-331.	1.4	26
128	Comparison of Two Shootâ€"Root Partitioning Models with Respect to Substrate Utilization and Functional Balance. Annals of Botany, 1987, 59, 129-140.	2.9	48
129	Stand growth model based on carbon uptake and allocation in individual trees. Ecological Modelling, 1986, 33, 205-229.	2.5	107
130	Partitioning Coefficients in Plant Models with Turn-over. Annals of Botany, 1986, 57, 291-297.	2.9	11
131	Implications of the pipe model theory on dry matter partitioning and height growth in trees. Journal of Theoretical Biology, 1986, 123, 103-120.	1.7	169
132	Optimal control of gas exchange. Tree Physiology, 1986, 2, 169-175.	3.1	158
133	Differential games in evolutionary theory: Height growth strategies of trees. Theoretical Population Biology, 1985, 27, 239-267.	1.1	55
134	Interrelationships between the Lotka-Volterra model and plant eco-physiology. Theoretical Population Biology, 1984, 25, 194-209.	1.1	5
135	A Methodology for Implementing a Digital Twin of the Earthâ€™s Forests to Match the Requirements of Different User Groups. GI_Forum, 0, 1, 130-136.	0.2	1
136	Energy from Biomass: Assessing Sustainability by Geoinformation Technology. GI_Forum, 0, 1, 137-142.	0.2	0
137	Connections Between Processes, Transport and Structure. , 0, , 425-432.		1