Teemu Holtta

List of Publications by Year
in descending order

89 papers	4,069 citations	35 h-index	61 g-index
90 all docs	90 docs citations	90 times ranked	4099 citing authors

109321
123424

#	Article	IF	Citations
1	Turgor-limited predictions of tree growth, height and metabolic scaling over tree lifespans. Tree Physiology, 2022, 42, 229-252.	3.1	11
2	Exploring optimal stomatal control under alternative hypotheses for the regulation of plant sources and sinks. New Phytologist, 2022, 233, 639-654.	7.3	11
3	The importance of tree internal water storage under drought conditions. Tree Physiology, 2022, 42, 771-783.	3.1	23
4	A model bridging waterlogging, stomatal behavior and water use in trees in drained peatland. Tree Physiology, 2022, , .	3.1	6
5	Tree Water Status Affects Tree Branch Position. Forests, 2022, 13, 728.	2.1	6
6	Close-range hyperspectral spectroscopy reveals leaf water content dynamics. Remote Sensing of Environment, 2022, 277, 113071.	11.0	12
7	Positive pressure in xylem and its role in hydraulic function. New Phytologist, 2021, 230, 27-45.	7.3	39
8	Terrestrial laser scanning intensity captures diurnal variation in leaf water potential. Remote Sensing of Environment, 2021, 255, 112274.	11.0	11
9	Drought effects on carbon allocation to resin defences and on resin dynamics in old-grown Scots pine. Environmental and Experimental Botany, 2021, 185, 104410.	4.2	22
10	Global transpiration data from sap flow measurements: the SAPFLUXNET database. Earth System Science Data, 2021, 13, 2607-2649.	9.9	65
11	Adaptation of Abies fargesii var. faxoniana (Rehder et E.H. Wilson) Tang S Liu seedlings to high altitude in a subalpine forest in southwestern China with special reference to phloem and xylem traits. Annals of Forest Science, 2021, 78, 1.	2.0	3
12	Drought effects on volatile organic compound emissions from Scots pine stems. Plant, Cell and Environment, 2021, , .	5.7	4
13	Bark Transpiration Rates Can Reach Needle Transpiration Rates Under Dry Conditions in a Semi-arid Forest. Frontiers in Plant Science, 2021, 12, 790684.	3.6	9
14	Dynamic Surface Tension Enhances the Stability of Nanobubbles in Xylem Sap. Frontiers in Plant Science, 2021, 12, 732701.	3.6	9
15	Wood allocation tradeâ€offs between fiber wall, fiber lumen, and axial parenchyma drive drought resistance in neotropical trees. Plant, Cell and Environment, 2020, 43, 965-980.	5.7	56
16	The influence of soil temperature and water content on belowground hydraulic conductance and leaf gas exchange in mature trees of three boreal species. Plant, Cell and Environment, 2020, 43, 532-547.	5.7	16
17	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
18	Is Decreased Xylem Sap Surface Tension Associated With Embolism and Loss of Xylem Hydraulic Conductivity in Pathogen-Infected Norway Spruce Saplings?. Frontiers in Plant Science, 2020, 11, 1090.	3.6	5

#	Article	IF	Citations
19	Assessing Environmental Control of Sap Flux of Three Tree Species Plantations in Degraded Hilly Lands in South China. Forests, 2020, 11, 206.	2.1	8
20	Propagating ice front induces gas bursts and ultrasonic acoustic emissions from freezing xylem. Tree Physiology, 2020, 40, 170-182.	3.1	3
21	Leaf carbon and water status control stomatal and nonstomatal limitations of photosynthesis in trees. New Phytologist, 2020, 226, 690-703.	7.3	66
22	Stem emissions of monoterpenes, acetaldehyde and methanol from Scots pine (Pinus sylvestris L.) affected by treeâ€"water relations and cambial growth. Plant, Cell and Environment, 2020, 43, 1751-1765.	5.7	11
23	Scots Pine Stems as Dynamic Sources of Monoterpene and Methanol Emissions. Frontiers in Forests and Global Change, 2020, 2, .	2.3	8
24	Systemic Signaling in the Regulation of Stomatal Conductance. Plant Physiology, 2020, 182, 1829-1832.	4.8	30
25	Measurement of Inner Bark and Leaf Osmolality. Methods in Molecular Biology, 2019, 2014, 135-142.	0.9	1
26	A mechanistic model of winter stem diameter dynamics reveals the time constant of diameter changes and the elastic modulus across tissues and species. Agricultural and Forest Meteorology, 2019, 272-273, 20-29.	4.8	11
27	Drought impacts on tree phloem: from cell-level responses to ecological significance. Tree Physiology, 2019, 39, 173-191.	3.1	68
28	Introduction to the invited issue on phloem function and dysfunction. Tree Physiology, 2019, 39, 167-172.	3.1	8
29	Temporal and Spatial Variation in Scots Pine Resin Pressure and Composition. Frontiers in Forests and Global Change, 2019, 2, .	2.3	9
30	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
31	Tree differences in primary and secondary growth drive convergent scaling in leaf area to sapwood area across Europe. New Phytologist, 2018, 218, 1383-1392.	7.3	18
32	Transpiration directly regulates the emissions of waterâ€soluble shortâ€chained OVOCs. Plant, Cell and Environment, 2018, 41, 2288-2298.	5.7	20
33	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
34	Belowground hydraulic conductance in a mature boreal Scots pine tree. Acta Horticulturae, 2018, , 103-108.	0.2	1
35	Silver birch ability to refill fully embolised xylem conduits under tension. Acta Horticulturae, 2018, , 67-74.	0.2	3
36	Quantifying in situ phenotypic variability in the hydraulic properties of four tree species across their distribution range in Europe. PLoS ONE, 2018, 13, e0196075.	2.5	25

#	Article	IF	Citations
37	Linking stem growth respiration to the seasonal course of stem growth and GPP of Scots pine. Tree Physiology, 2018, 38, 1356-1370.	3.1	12
38	Drivers of apoplastic freezing in gymnosperm and angiosperm branches. Ecology and Evolution, 2018, 8, 333-343.	1.9	16
39	Water relations in silver birch during springtime: How is sap pressurised?. Plant Biology, 2018, 20, 834-847.	3.8	20
40	An empirical method that separates irreversible stem radial growth from bark water content changes in trees: theory and case studies. Plant, Cell and Environment, 2017, 40, 290-303.	5.7	86
41	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
42	Effect of Leaf Water Potential on Internal Humidity and CO2 Dissolution: Reverse Transpiration and Improved Water Use Efficiency under Negative Pressure. Frontiers in Plant Science, 2017, 8, 54.	3.6	57
43	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
44	Gradients and dynamics of inner bark and needle osmotic potentials in Scots pine (<scp><i>Pinus) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 Environment, 2017, 40, 2160-2173.	5.7	22
45	Osmolality and Non-Structural Carbohydrate Composition in the Secondary Phloem of Trees across a Latitudinal Gradient in Europe. Frontiers in Plant Science, 2016, 7, 726.	3.6	60
46	Xylem diameter changes during osmotic stress, desiccation and freezing inPinus sylvestrisandPopulus tremula. Tree Physiology, 2016, 37, 491-500.	3.1	11
47	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
48	Diurnal patterns in Scots pine stem oleoresin pressure in a boreal forest. Plant, Cell and Environment, 2016, 39, 527-538.	5.7	25
49	Separating waterâ€potential induced swelling and shrinking from measured radial stem variations reveals a cambial growth and osmotic concentration signal. Plant, Cell and Environment, 2016, 39, 233-244.	5.7	79
50	Irreversible diameter change of wood segments correlates with other methods for estimating frost tolerance of living cells in freeze-thaw experiment: a case study with seven urban tree species in Helsinki. Annals of Forest Science, 2015, 72, 1089-1098.	2.0	16
51	Coordination of physiological traits involved in droughtâ€induced mortality of woody plants. New Phytologist, 2015, 208, 396-409.	7.3	123
52	Tree water relations can trigger monoterpene emissions from Scots pine stems during spring recovery. Biogeosciences, 2015, 12, 5353-5363.	3.3	34
53	An analysis of Granier sap flow method, its sensitivity to heat storage and a new approach to improve its time dynamics. Agricultural and Forest Meteorology, 2015, 211-212, 2-12.	4.8	42
54	Hydraulic functioning of tree stemsâ€"fusing ray anatomy, radial transfer and capacitance. Tree Physiology, 2015, 35, 706-722.	3.1	110

#	Article	IF	Citations
55	Comparison of phloem and xylem hydraulic architecture in <i><scp>P</scp>icea abies</i> stems. New Phytologist, 2015, 205, 102-115.	7.3	79
56	Dynamics of leaf gas exchange, chlorophyll fluorescence and stem diameter changes during freezing and thawing of Scots pine seedlings. Tree Physiology, 2015, 35, 1314-1324.	3.1	13
57	Bursts of CO2 released during freezing offer a new perspective on avoidance of winter embolism in trees. Annals of Botany, 2014, 114, 1711-1718.	2.9	20
58	Dynamics of leaf gas exchange, xylem and phloem transport, water potential and carbohydrate concentration in a realistic 3-D model tree crown. Annals of Botany, 2014, 114, 653-666.	2.9	49
59	Ecophysiological Aspects of Phloem Transport in Trees. Plant Ecophysiology, 2014, , 25-36.	1.5	6
60	Plant Water Transport and Cavitation. NATO Science for Peace and Security Series C: Environmental Security, 2014, , 173-181.	0.2	4
61	Evaluating theories of droughtâ€induced vegetation mortality using a multimodelâ€“experiment framework. New Phytologist, 2013, 200, 304-321.	7.3	340
62	Concurrent measurements of change in the bark and xylem diameters of trees reveal a phloemâ€generated turgor signal. New Phytologist, 2013, 198, 1143-1154.	7.3	92
63	Fluxes of Carbon, Water and Nutrients. , 2013, , 225-328.		0
64	Assimilate transport in phloem sets conditions for leaf gas exchange. Plant, Cell and Environment, 2013, 36, 655-669.	5.7	161
65	Scaling of xylem and phloem transport capacity and resource usage with tree size. Frontiers in Plant Science, 2013, 4, 496.	3.6	52
66	Anatomical regulation of ice nucleation and cavitation helps trees to survive freezing and drought stress. Scientific Reports, 2013, 3, 2031.	3.3	49
67	MODELLING THE EFFECT OF XYLEM AND PHLOEM TRANSPORT ON LEAF GAS EXCHANGE. Acta Horticulturae, 2013, , 351-358.	0.2	5
68	Cavitation induced by a surfactant leads to a transient release of water stress and subsequent â€˜run awayâ€™ embolism in Scots pine (Pinus sylvestris) seedlings. Journal of Experimental Botany, 2012, 63, 1057-1067.	4.8	21
69	Effects of the hydraulic coupling between xylem and phloem on diurnal phloem diameter variation. Plant, Cell and Environment, 2011, 34, 690-703.	5.7	129
70	A carbon costâ€“gain model explains the observed patterns of xylem safety and efficiency. Plant, Cell and Environment, 2011, 34, 1819-1834.	5.7	40
71	Comparative Criteria for Models of the Vascular Transport Systems of Tall Trees. Tree Physiology, 2011, , 309-339.	2.5	19
72	The significance of phloem transport for the speed with which canopy photosynthesis and belowground respiration are linked. New Phytologist, 2010, 185, 189-203.	7.3	181

#	Article	IF	Citations
73	On light bulbs and marbles. Transfer times and teleconnections in plant fluid transport systems. New Phytologist, 2010, 187, 888-891.	7.3	11
74	The effect of artificially induced drought on radial increment and wood properties of Norway spruce. Tree Physiology, 2010, 30, 103-115.	3.1	71
75	A physiological model of softwood cambial growth. Tree Physiology, 2010, 30, 1235-1252.	3.1	96
76	The effects of sap ionic composition on xylem vulnerability to cavitation. Journal of Experimental Botany, 2010, 61, 275-285.	4.8	59
77	Interpretation of stem CO2 efflux measurements. Tree Physiology, 2009, 29, 1447-1456.	3.1	55
78	New Insights into the Mechanisms of Water-Stress-Induced Cavitation in Conifers. Plant Physiology, 2009, 151, 949-954.	4.8	97
79	Linking phloem function to structure: Analysis with a coupled xylemâ€"phloem transport model. Journal of Theoretical Biology, 2009, 259, 325-337.	1.7	207
80	Capacitive effect of cavitation in xylem conduits: results from a dynamic model. Plant, Cell and Environment, 2009, 32, 10-21.	5.7	115
81	THE EFFECTS OF HEAT STORAGE DURING LOW FLOW RATES ON THE OUTPUT OF GRANIER-TYPE SAP-FLOW SENSORS. Acta Horticulturae, 2009, , 45-52.	0.2	4
82	A model of bubble growth leading to xylem conduit embolism. Journal of Theoretical Biology, 2007, 249, 111-123.	1.7	16
83	Sanioâ€™s laws revisited. Sizeâ€dependent changes in the xylem architecture of trees. Ecology Letters, 2007, 10, 1084-1093.	6.4	92
84	Modeling xylem and phloem water flows in trees according to cohesion theory and MÃ¼nch hypothesis. Trees - Structure and Function, 2006, 20, 67-78.	1.9	206
85	Refilling of embolised conduits as a consequence of 'MÃ¼nch water' circulation. Functional Plant Biology, 2006, 33, 949.	2.1	44
86	Field measurements of ultrasonic acoustic emissions and stem diameter variations. New insight into the relationship between xylem tensions and embolism. Tree Physiology, 2005, 25, 237-243.	3.1	36
87	Refilling of a Hydraulically Isolated Embolized Xylem Vessel: Model Calculations. Annals of Botany, 2003, 91, 419-428.	2.9	66
88	Fluxes of carbon dioxide and water vapour over Scots pine forest and clearing. Agricultural and Forest Meteorology, 2002, 111, 187-202.	4.8	70
89	Relationships between Embolism, Stem Water Tension, and Diameter Changes. Journal of Theoretical Biology, 2002, 215, 23-38.	1.7	42