Petteri Packalen

List of Publications by Year
in descending order

115 papers	3,769 citations	136950 32 h-index	149698 56 g-index
116 all docs	116 docs citations	116 times ranked	2630 citing authors

#	Article	IF	Citations
1	Comparative testing of single-tree detection algorithms under different types of forest. Forestry, 2012, 85, 27-40.	2.3	280
2	Comparison of Sentinel-2 and Landsat 8 in the estimation of boreal forest canopy cover and leaf area index. Remote Sensing of Environment, 2017, 195, 259-274.	11.0	252
3	The k-MSN method for the prediction of species-specific stand attributes using airborne laser scanning and aerial photographs. Remote Sensing of Environment, 2007, 109, 328-341.	11.0	206
4	Identifying and quantifying structural characteristics of heterogeneous boreal forests using laser scanner data. Forest Ecology and Management, 2005, 216, 41-50.	3.2	146
5	Estimation of stem volume using laser scanning-based canopy height metrics. Forestry, 2006, 79, 217-229.	2.3	140
6	Nonparametric estimation of stem volume using airborne laser scanning, aerial photography, and stand-register data. Canadian Journal of Forest Research, 2006, 36, 426-436.	1.7	122
7	Estimation of species-specific diameter distributions using airborne laser scanning and aerial photographs. Canadian Journal of Forest Research, 2008, 38, 1750-1760.	1.7	109
8	Airborne laser scanning-based prediction of coarse woody debris volumes in a conservation area. Forest Ecology and Management, 2008, 255, 3288-3296.	3.2	107
9	Predicting tree attributes and quality characteristics of Scots pine using airborne laser scanning data. Silva Fennica, 2009, 43, .	1.3	89
10	Moose (<scp>A</scp>lces alces) reacts to high summer temperatures by utilizing thermal shelters in boreal forests â€“ an analysis based on airborne laser scanning of the canopy structure at moose locations. Global Change Biology, 2014, 20, 1115-1125.	9.5	85
11	Different plot selection strategies for field training data in ALS-assisted forest inventory. Forestry, 2011, 84, 23-31.	2.3	78
12	A Two Stage Method to Estimate Species-specific Growing Stock. Photogrammetric Engineering and Remote Sensing, 2009, 75, 1451-1460.	0.6	68
13	Diversity and equitability ordering profiles applied to study forest structure. Forest Ecology and Management, 2012, 276, 185-195.	3.2	65
14	Comparison of basal area and stem frequency diameter distribution modelling using airborne laser scanner data and calibration estimation. Forest Ecology and Management, 2007, 247, 26-34.	3.2	62
15	Variable selection strategies for nearest neighbor imputation methods used in remote sensing based forest inventory. Canadian Journal of Remote Sensing, 2012, 38, 557-569.	2.4	60
16	Characterizing forest structural types and shelterwood dynamics from Lorenz-based indicators predicted by airborne laser scanning. Canadian Journal of Forest Research, 2013, 43, 1063-1074.	1.7	55
17	The suitability of leaf-off airborne laser scanning data in an area-based forest inventory of coniferous and deciduous trees. Silva Fennica, 2012, 46, .	1.3	55
18	Nationwide airborne laser scanning based models for volume, biomass and dominant height in Finland. Silva Fennica, 2016, 50, .	1.3	53

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19	Non-parametric prediction of diameter distributions using airborne laser scanner data. Scandinavian Journal of Forest Research, 2009, 24, 541-553.	1.4	51
20	Effects of pulse density on predicting characteristics of individual trees of Scandinavian commercial species using alpha shape metrics based on airborne laser scanning data. Canadian Journal of Remote Sensing, 2008, 34, S441-S459.	2.4	47
21	Automatic segmentation of forest stands using a canopy height model and aerial photography. Scandinavian Journal of Forest Research, 2008, 23, 534-545.	1.4	47
22	ALS-based estimation of plot volume and site index in a eucalyptus plantation with a nonlinear mixed-effect model that accounts for the clone effect. Annals of Forest Science, 2011, 68, 1085.	2.0	47
23	Key structural features of Boreal forests may be detected directly using L-moments from airborne lidar data. Remote Sensing of Environment, 2017, 194, 437-446.	11.0	47
24	Species-Specific Management Inventory in Finland. Managing Forest Ecosystems, 2014, , 241-252.	0.9	47
25	Gini coefficient predictions from airborne lidar remote sensing display the effect of management intensity on forest structure. Ecological Indicators, 2016, 60, 574-585.	6.3	45
26	How to integrate remotely sensed data and biodiversity for ecosystem assessments at landscape scale. Landscape Ecology, 2015, 30, 501-516.	4.2	43
27	Multispectral Airborne LiDAR Data in the Prediction of Boreal Tree Species Composition. IEEE Transactions on Geoscience and Remote Sensing, 2019, 57, 3462-3471.	6.3	43
28	Comparison of airborne laser scanning methods for estimating forest structure indicators based on Lorenz curves. ISPRS Journal of Photogrammetry and Remote Sensing, 2014, 95, 23-33.	11.1	40
29	Predicting the spatial pattern of trees by airborne laser scanning. International Journal of Remote Sensing, 2013, 34, 5154-5165.	2.9	38
30	Airborne laser scanning-based decision support for wood procurement planning. Scandinavian Journal of Forest Research, 2014, 29, 132-143.	1.4	38
31	Neural Networks for the Prediction of Species-Specific Plot Volumes Using Airborne Laser Scanning and Aerial Photographs. IEEE Transactions on Geoscience and Remote Sensing, 2010, 48, 1076-1085.	6.3	37
32	Improving species-specific plot volume estimates based on airborne laser scanning and image data using alpha shape metrics and balanced field data. Remote Sensing of Environment, 2012, 124, 534-541.	11.0	34
33	Predicting and calibrating tree attributes by means of airborne laser scanning and field measurements. Canadian Journal of Forest Research, 2012, 42, 1896-1907.	1.7	32
34	Comparison of multispectral airborne laser scanning and stereo matching of aerial images as a single sensor solution to forest inventories by tree species. Remote Sensing of Environment, 2019, 231, 111208.	11.0	32
35	Using airborne laser scanning data for detecting canopy gaps and their understory type in mature boreal forest. Annals of Forest Science, 2011, 68, 825-835.	2.0	31
36	From comprehensive field inventories to remotely sensed wall-to-wall stand attribute data â€" a brief history of management inventories in the Nordic countries. Canadian Journal of Forest Research, 2021, 51, 257-266.	1.7	31

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37	Assessing the performance of aerial image point cloud and spectral metrics in predicting boreal forest canopy cover. ISPRS Journal of Photogrammetry and Remote Sensing, 2017, 129, 77-85.	11.1	31
38	Effect of flying altitude, scanning angle and scanning mode on the accuracy of ALS based forest inventory. International Journal of Applied Earth Observation and Geoinformation, 2016, 52, 349-360.	2.8	30
39	Classification of multilayered forest development classes from low-density national airborne lidar datasets. Forestry, 2016, 89, 392-401.	2.3	28
40	Resolution dependence in an area-based approach to forest inventory with airborne laser scanning. Remote Sensing of Environment, 2019, 224, 192-201.	11.0	28
41	Identification of boreal forest stands with high herbaceous plant diversity using airborne laser scanning. Forest Ecology and Management, 2009, 257, 46-53.	3.2	27
42	Forest inventories for small areas using drone imagery without in-situ field measurements. Remote Sensing of Environment, 2020, 237, 111404.	11.0	27
43	Detection of Aspens Using High Resolution Aerial Laser Scanning Data and Digital Aerial Images. Sensors, 2008, 8, 5037-5054.	3.8	26
44	Testing the usability of truncated angle count sample plots as ground truth in airborne laser scanning-based forest inventories. Forestry, 2007, 80, 73-81.	2.3	25
45	Patterns of covariance between airborne laser scanning metrics and Lorenz curve descriptors of tree size inequality. Canadian Journal of Remote Sensing, 2013, 39, S18-S31.	2.4	25
46	Forest Change Detection by Using Point Clouds From Dense Image Matching Together With a LiDAR-Derived Terrain Model. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2017, 10, 1197-1206.	4.9	25
47	Combining tree height samples produced by airborne laser scanning and stand management records to estimate plot volume inEucalyptusplantations. Canadian Journal of Forest Research, 2011, 41, 1649-1658.	1.7	23
48	Edge-Tree Correction for Predicting Forest Inventory Attributes Using Area-Based Approach With Airborne Laser Scanning. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2015, 8, 1274-1280.	4.9	22
49	Prediction of Forest Attributes with Field Plots, Landsat, and a Sample of Lidar Strips. Photogrammetric Engineering and Remote Sensing, 2014, 80, 143-150.	0.6	21
50	Forest structure as a determinant of grouse brood occurrence â€“ An analysis linking LiDAR data with presence/absence field data. Forest Ecology and Management, 2016, 380, 202-211.	3.2	21
51	Ecological dimensions of airborne laser scanning â€” Analyzing the role of forest structure in moose habitat use within a year. Remote Sensing of Environment, 2016, 173, 238-247.	11.0	21
52	Combining spatial and economic criteria in tree-level harvest planning. Forest Ecosystems, 2020, 7, .	3.1	21
53	Detection of the need for seedling stand tending using high-resolution remote sensing data. Silva Fennica, 2013, 47, .	1.3	21
54	Exploring horizontal area-based metrics to discriminate the spatial pattern of trees and need for first thinning using airborne laser scanning. Forestry, 2012, 85, 305-314.	2.3	20

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55	Stand volume models based on stable metrics as from multiple ALS acquisitions in Eucalyptus plantations. Annals of Forest Science, 2015, 72, 489-498.	2.0	20
56	Comparison of linear regression, k-nearest neighbour and random forest methods in airborne laser-scanning-based prediction of growing stock. Forestry, 2021, 94, 311-323.	2.3	20
57	Effects of temporally external auxiliary data on model-based inference. Remote Sensing of Environment, 2017, 198, 150-159.	11.0	18
58	Airborne laser scanning for tree diameter distribution modelling: a comparison of different modelling alternatives in a tropical single-species plantation. Forestry, 2018, 91, 121-131.	2.3	18
59	Influence of size and shape of forest inventory units on the layout of harvest blocks in numerical forest planning. European Journal of Forest Research, 2019, 138, 111-123.	2.5	18
60	Usability of citizen science observations together with airborne laser scanning data in determining the habitat preferences of forest birds. Forest Ecology and Management, 2018, 430, 498-508.	3.2	17
61	Large Area Forest Yield Estimation with Pushbroom Digital Aerial Photogrammetry. Forests, 2019, 10, 397.	2.1	16
62	Sensitivity of Above-Ground Biomass Estimates to Height-Diameter Modelling in Mixed-Species West African Woodlands. PLoS ONE, 2016, 11, e0158198.	2.5	16
63	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
64	Classification of forest land attributes using multi-source remotely sensed data. International Journal of Applied Earth Observation and Geoinformation, 2016, 44, 11-22.	2.8	14
65	Remote sensing approach for spatial planning of land management interventions in West African savannas. Journal of Arid Environments, 2017, 140, 29-41.	2.4	14
66	Image matching as a data source for forest inventory â€“ Comparison of Semi-Global Matching and Next-Generation Automatic Terrain Extraction algorithms in a typical managed boreal forest environment. International Journal of Applied Earth Observation and Geoinformation, 2017, 60, 11-21.	2.8	14
67	Do airborne laser scanning biomass prediction models benefit from Landsat time series, hyperspectral data or forest classification in tropical mosaic landscapes?. International Journal of Applied Earth Observation and Geoinformation, 2019, 81, 176-185.	2.8	14
68	Determining maximum entropy in 3D remote sensing height distributions and using it to improve aboveground biomass modelling via stratification. Remote Sensing of Environment, 2021, 260, 112464.	11.0	14
69	Calibration of nationwide airborne laser scanning based stem volume models. Remote Sensing of Environment, 2018, 210, 179-192.	11.0	13
70	Gaussian Process Regression for Forest Attribute Estimation From Airborne Laser Scanning Data. IEEE Transactions on Geoscience and Remote Sensing, 2019, 57, 3361-3369.	6.3	13
71	Predicting species-specific basal areas in urban forests using airborne laser scanning and existing stand register data. European Journal of Forest Research, 2013, 132, 999-1012.	2.5	12
72	An Examination of Diameter Density Prediction with k-NN and Airborne Lidar. Forests, 2017, 8, 444.	2.1	12

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73	How much can natural resource inventory benefit from finer resolution auxiliary data?. Remote Sensing of Environment, 2018, 209, 31-40.	11.0	12
74	Comparing nearest neighbor configurations in the prediction of species-specific diameter distributions. Annals of Forest Science, 2018, 75, 1.	2.0	12
75	The transferability of airborne laser scanning based tree-level models between different inventory areas. Canadian Journal of Forest Research, 2019, 49, 228-236.	1.7	12
76	Using airborne laser scanning data and digital aerial photographs to estimate growing stock by tree species. Dissertationes Forestales, 2009, 2009, .	0.1	12
77	Airborne Laser Scanning for the Site Type Identification of Mature Boreal Forest Stands. Remote Sensing, 2011, 3, 100-116.	4.0	11
78	Multi-objective forestry increases the production of ecosystem services. Forestry, 2021, 94, 386-394.	2.3	11
79	Kuviokohtaisten puustotunnusten ennustaminen laserkeilauksella. Metstieteen Aikakauskirja, 2005, 2005, .	0.0	11
80	Effects of numbers of observations and predictors for various model types on the performance of forest inventory with airborne laser scanning. Canadian Journal of Forest Research, 2022, 52, 385-395.	1.7	11
81	Applied 3D texture features in ALS-based forest inventory. European Journal of Forest Research, 2010, 129, 803-811.	2.5	10
82	Effects of auxiliary data source and inventory unit size on the efficiency of sample-based coarse woody debris inventory. Forest Ecology and Management, 2010, 259, 1890-1899.	3.2	10
83	Evaluation of pushbroom DAP relative to frame camera DAP and lidar for forest modeling. Remote Sensing of Environment, 2020, 237, 111535.	11.0	10
84	Detecting moose (Alces alces) browsing damage in young boreal forests from airborne laser scanning data. Canadian Journal of Forest Research, 2016, 46, 10-19.	1.7	9
85	Uncertainty Quantification in ALS-Based Species-Specific Growing Stock Volume Estimation. IEEE Transactions on Geoscience and Remote Sensing, 2017, 55, 1671-1681.	6.3	9
86	Effects of errors in basal area and mean diameter on the optimality of forest management prescriptions. Annals of Forest Science, 2021, 78, 1.	2.0	9
87	Detailed Assessment Using Remote Sensing Techniques. Managing Forest Ecosystems, 2008, , 53-77.	0.9	8
88	Estimation of Forest Stand Characteristics Using Spectral Histograms Derived from an Ikonos Satellite Image. Photogrammetric Engineering and Remote Sensing, 2008, 74, 1335-1341.	0.6	8
89	Estimating Tree Height Distribution Using Low-Density ALS Data With and Without Training Data. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2015, 8, 1432-1441.	4.9	8
90	Prediction error aggregation behaviour for remote sensing augmented forest inventory approaches. Forestry, 2021, 94, 576-587.	2.3	8

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91	Effect of minimum diameter at breast height and standing dead wood field measurements on the accuracy of ALS-based forest inventory. Canadian Journal of Forest Research, 2015, 45, 1280-1288.	1.7	7
92	How much can airborne laser scanning based forest inventory by tree species benefit from auxiliary optical data?. International Journal of Applied Earth Observation and Geoinformation, 2018, 72, 91-98.	2.8	7
93	Predicting factual sawlog volumes in Scots pine dominated forests using airborne laser scanning data. Silva Fennica, 2019, 53, .	1.3	7
94	The effects of sample plot selection strategy and the number of sample plots on inoptimality losses in forest management planning based on airborne laser scanning data. Canadian Journal of Forest Research, 2019, 49, 1135-1146.	1.7	6
95	A method for vertical adjustment of digital aerial photogrammetry data by using a high-quality digital terrain model. International Journal of Applied Earth Observation and Geoinformation, 2020, 84, 101954.	2.8	6
96	Fusing diameter distributions predicted by an area-based approach and individual-tree detection in coniferous-dominated forests. Canadian Journal of Forest Research, 2020, 50, 113-125.	1.7	6
97	Field calibration of merchantable and sawlog volumes in forest inventories based on airborne laser scanning. Canadian Journal of Forest Research, 2020, 50, 1352-1364.	1.7	6
98	Transferability and calibration of airborne laser scanning based mixed-effects models to estimate the attributes of sawlog-sized Scots pines. Silva Fennica, 2019, 53, .	1.3	6
99	A Comparison of Linear-Mode and Single-Photon Airborne LiDAR in Species-Specific Forest Inventories. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60, 1-14.	6.3	5
100	Influence of timber harvesting costs on the layout of cuttings and economic return in forest planning based on dynamic treatment units. Forest Systems, 2018, 27, e001.	0.3	5
101	Estimation of periodic annual increment of tree ring widths by airborne laser scanning. Canadian Journal of Forest Research, 2022, 52, 644-651.	1.7	5
102	The utility of fused airborne laser scanning and multispectral data for improved wind damage risk assessment over a managed forest landscape in Finland. Annals of Forest Science, 2020, 77, 1.	2.0	4
103	Horvitzâ€Thompsonâ€“like estimation with distanceâ€based detection probabilities for circular plot sampling of forests. Biometrics, 2021, 77, 715-728.	1.4	4
104	Nearest neighbor imputation of logwood volumes using bi-temporal ALS, multispectral ALS and aerial images. Scandinavian Journal of Forest Research, 2019, 34, 469-483.	1.4	3
105	Utility of image point cloud data towards generating enhanced multitemporal multisensor land cover maps. International Journal of Applied Earth Observation and Geoinformation, 2020, 86, 102012.	2.8	3
106	Refining and evaluating a Horvitzâ€“Thompson-like stand density estimator in individual tree detection based on airborne laser scanning. Canadian Journal of Forest Research, 2022, 52, 527-538.	1.7	3
107	Bayesian approach to single-tree detection in airborne laser scanning â€“ use of training data for prior and likelihood modeling. Journal of Physics: Conference Series, 2018, 1047, 012008.	0.4	2
108	Using ALS Data to Improve Co-Registration of Photogrammetry-Based Point Cloud Data in Urban Areas. Remote Sensing, 2020, 12, 1943.	4.0	2

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109	Economic losses in carbon forestry due to errors in inventory data. Canadian Journal of Forest Research, 2021, 51, 501-512.	1.7	2
110	Volumes by tree species can be predicted using photogrammetric UAS data, Sentinel-2 images and prior field measurements. Silva Fennica, 2021, 55, .	1.3	2
111	Fusion of crown and trunk detections from airborne UAS based laser scanning for small area forest inventories. International Journal of Applied Earth Observation and Geoinformation, 2021, 100, 102327.	2.8	2
112	Modeling Forest Tree Data Using Sequential Spatial Point Processes. Journal of Agricultural, Biological, and Environmental Statistics, 2022, 27, 88-108.	1.4	2
113	Evaluation of UAS LiDAR data for tree segmentation and diameter estimation in boreal forests using trunk- and crown-based methods. Canadian Journal of Forest Research, 0, , 1-11.	1.7	2
114	In-situ calibration of stand level merchantable and sawlog volumes using cut-to-length harvester measurements and airborne laser scanning data. Forestry, 2022, 95, 105-117.	2.3	0
115	Transferability of ALS-based forest attribute models when predicting with drone-based image point cloud data. International Journal of Applied Earth Observation and Geoinformation, 2021, 103, 102484.	2.8	0