Matti Maltamo

List of Publications by Year
in descending order

98 papers	4,339 citations	101543 36 h-index	114465 63 g-index
98 all docs	98 docs citations	98 times ranked	2712 citing authors

#	Article	IF	Citations
1	Laser scanning of forest resources: the nordic experience. Scandinavian Journal of Forest Research, 2004, 19, 482-499.	1.4	386
2	Airborne discrete-return LIDAR data in the estimation of vertical canopy cover, angular canopy closure and leaf area index. Remote Sensing of Environment, 2011, 115, 1065-1080.	11.0	305
3	Automatic detection of harvested trees and determination of forest growth using airborne laser scanning. Remote Sensing of Environment, 2004, 90, 451-462.	11.0	262
4	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
5	Tree species classification using airborne LiDAR â€“ effects of stand and tree parameters, downsizing of training set, intensity normalization, and sensor type. Silva Fennica, 2010, 44, .	1.3	195
6	Imputation of single-tree attributes using airborne laser scanning-based height, intensity, and alpha shape metrics. Remote Sensing of Environment, 2010, 114, 1263-1276.	11.0	178
7	Estimation of stem volume using laser scanning-based canopy height metrics. Forestry, 2006, 79, 217-229.	2.3	140
8	Comparison of percentile based prediction methods and the Weibull distribution in describing the diameter distribution of heterogeneous Scots pine stands. Forest Ecology and Management, 2000, 133, 263-274.	3.2	112
9	Remote sensing and forest inventories in Nordic countries â€“ roadmap for the future. Scandinavian Journal of Forest Research, 2018, 33, 397-412.	1.4	111
10	Methods based on k-nearest neighbor regression in the prediction of basal area diameter distribution. Canadian Journal of Forest Research, 1998, 28, 1107-1115.	1.7	109
11	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
12	Comparison of beta and weibull functions for modelling basal area diameter distribution in stands of pinus sylvestris and picea abies. Scandinavian Journal of Forest Research, 1995, 10, 284-295.	1.4	101
13	Predicting tree attributes and quality characteristics of Scots pine using airborne laser scanning data. Silva Fennica, 2009, 43, .	1.3	89
14	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
15	Diversity and equitability ordering profiles applied to study forest structure. Forest Ecology and Management, 2012, 276, 185-195.	3.2	65
16	Forest stand characteristics estimation using a most similar neighbor approach and image spatial structure information. Remote Sensing of Environment, 2001, 78, 223-228.	11.0	61
17	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
18	The Kâ€nearestâ€neighbour method for estimating basalâ€area diameter distribution. Scandinavian Journal of Forest Research, 1997, 12, 200-208.	1.4	56

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19	Bayesian Approach to Tree Detection Based on Airborne Laser Scanning Data. IEEE Transactions on Geoscience and Remote Sensing, 2014, 52, 2690-2699.	6.3	56
20	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
21	Comparing individual tree detection and the area-based statistical approach for the retrieval of forest stand characteristics using airborne laser scanning in Scots pine stands. Canadian Journal of Forest Research, 2011, 41, 583-598.	1.7	54
22	Non-parametric prediction of diameter distributions using airborne laser scanner data. Scandinavian Journal of Forest Research, 2009, 24, 541-553.	1.4	51
23	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
24	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
25	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
26	Species-Specific Management Inventory in Finland. Managing Forest Ecosystems, 2014, , 241-252.	0.9	47
27	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
28	Determination of the spatial distribution of trees from digital aerial photographs. Forest Ecology and Management, 1998, 110, 275-282.	3.2	44
29	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
30	Estimating species-specific diameter distributions and saw log recoveries of boreal forests from airborne laser scanning data and aerial photographs: a distribution-based approach. Silva Fennica, 2008, 42, .	1.3	43
31	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
32	Calibration of area based diameter distribution with individual tree based diameter estimates using airborne laser scanning. ISPRS Journal of Photogrammetry and Remote Sensing, 2014, 93, 65-75.	11.1	40
33	Accuracy of partially visually assessed stand characteristics: a case study of Finnish forest inventory by compartments. Canadian Journal of Forest Research, 2004, 34, 916-930.	1.7	38
34	Predicting the spatial pattern of trees by airborne laser scanning. International Journal of Remote Sensing, 2013, 34, 5154-5165.	2.9	38
35	Airborne laser scanning-based decision support for wood procurement planning. Scandinavian Journal of Forest Research, 2014, 29, 132-143.	1.4	38
36	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

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37	The structure of forest stands in virgin and managed peatlands: a comparison between Finnish and Russian Karelia. Forest Ecology and Management, 1997, 96, 125-138.	3.2	36
38	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
39	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
40	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
41	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
42	Impact of forest management history on the state of forests in relation to natural forest succession Comparative study, North Karelia, Finland vs. Republic of Karelia, Russian Federation. Forest Ecology and Management, 1996, 83, 71-85.	3.2	28
43	Classification of multilayered forest development classes from low-density national airborne lidar datasets. Forestry, 2016, 89, 392-401.	2.3	28
44	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
45	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
46	Forest inventories for small areas using drone imagery without in-situ field measurements. Remote Sensing of Environment, 2020, 237, 111404.	11.0	27
47	Detection of Aspens Using High Resolution Aerial Laser Scanning Data and Digital Aerial Images. Sensors, 2008, 8, 5037-5054.	3.8	26
48	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
49	A comparative study of the use of laser scanner data and field measurements in the prediction of crown height in boreal forests. Scandinavian Journal of Forest Research, 2006, 21, 231-238.	1.4	23
50	Sapwood and heartwood taper in Scots pine stems. Canadian Journal of Forest Research, 1995, 25, 1928-1943.	1.7	22
51	Differences in the structure of primary and managed forests in East Kalimantan, Indonesia. Forest Ecology and Management, 2000, 129, 63-74.	3.2	22
52	Title is missing!. New Forests, 2002, 23, 207-223.	1.7	22
53	A simple approach to forest structure classification using airborne laser scanning that can be adopted across bioregions. Forest Ecology and Management, 2019, 433, 111-121.	3.2	22
54	Application of Most Similar Neighbor Inference for Estimating Marked Stand Characteristics Using Harvester and Inventory Generated Stem Databases. International Journal of Forest Engineering, 2001, 12, 33-41.	0.8	21

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55	Estimating forest stand density and structure using Bayesian individual tree detection, stochastic geometry, and distribution matching. ISPRS Journal of Photogrammetry and Remote Sensing, 2019, 152, 66-78.	11.1	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	Estimating stand level stem diameter distribution utilizing harvester data and airborne laser scanning. Silva Fennica, 2019, 53, .	1.3	20
58	Title is missing!. New Forests, 2000, 20, 65-86.	1.7	16
59	Impact of Plot Size and Spatial Pattern of Forest Attributes on Sampling Efficacy. Forest Science, 2015, 61, 847-860.	1.0	15
60	Species-specific combination and calibration between area-based and tree-based diameter distributions using airborne laser scanning. Canadian Journal of Forest Research, 2016, 46, 753-765.	1.7	15
61	GIS-based DRASTIC model for groundwater vulnerability and pollution risk assessment in the Peshawar District, Pakistan. Arabian Journal of Geosciences, 2018, 11, 1.	1.3	15
62	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
63	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
64	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
65	Calibrating predicted diameter distribution with additional information in growth and yield predictions. Canadian Journal of Forest Research, 2003, 33, 430-434.	1.7	13
66	Effects of plot size, stand density, and scan density on the relationship between airborne laser scanning metrics and the Gini coefficient of tree size inequality. Canadian Journal of Forest Research, 2017, 47, 1590-1602.	1.7	13
67	Calibration of nationwide airborne laser scanning based stem volume models. Remote Sensing of Environment, 2018, 210, 179-192.	11.0	13
68	Incorporating tree- and stand-level information on crown base height into multivariate forest management inventories based on airborne laser scanning. Silva Fennica, 2018, 52, .	1.3	13
69	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
70	Comparing nearest neighbor configurations in the prediction of species-specific diameter distributions. Annals of Forest Science, 2018, 75, 1.	2.0	12
71	Predicting tree diameter using allometry described by non-parametric locally-estimated copulas from tree dimensions derived from airborne laser scanning. Forest Ecology and Management, 2019, 434, 205-212.	3.2	12
72	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

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73	A percentile based basal area diameter distribution model for predicting the stand development of Pinus kesiya plantations in Zambia and Zimbabwe. Forest Ecology and Management, 2003, 172, 109-124.	3.2	11
74	Airborne Laser Scanning for the Site Type Identification of Mature Boreal Forest Stands. Remote Sensing, 2011, 3, 100-116.	4.0	11
75	Prediction of forest canopy fuel parameters in managed boreal forests using multispectral and unispectral airborne laser scanning data and aerial images. European Journal of Remote Sensing, 2020, 53, 245-257.	3.5	11
76	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
77	The comparison of airborne laser scanning-based probability layers as auxiliary information for assessing coarse woody debris. International Journal of Remote Sensing, 2010, 31, 1245-1259.	2.9	10
78	Prediction of Timber Quality Parameters of Forest Stands by Means of Small Footprint Airborne Laser Scanner Data. International Journal of Forest Engineering, 2011, 22, 14-23.	0.8	10
79	Assessing Dead Wood by Airborne Laser Scanning. Managing Forest Ecosystems, 2014, , 375-395.	0.9	10
80	A Simple Approach of Groundwater Quality Analysis, Classification, and Mapping in Peshawar, Pakistan. Environments - MDPI, 2019, 6, 123.	3.3	9
81	Prediction error aggregation behaviour for remote sensing augmented forest inventory approaches. Forestry, 2021, 94, 576-587.	2.3	8
82	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
83	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
84	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
85	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
86	Evaluating the accuracy of ALS-based removal estimates against actual logging data. Annals of Forest Science, 2020, 77, 1.	2.0	6
87	Detection of European Aspen (Populus tremula L.) Based on an Unmanned Aerial Vehicle Approach in Boreal Forests. Remote Sensing, 2021, 13, 1723.	4.0	6
88	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
89	Retrieving Suppressed Trees from Model-Based Height Distribution by Combining High- and Low-Density Airborne Laser Scanning Data. Canadian Journal of Remote Sensing, 2014, 40, 233-242.	2.4	4
90	Horvitzâ€Thompsonâ€“like estimation with distanceâ€based detection probabilities for circular plot sampling of forests. Biometrics, 2021, 77, 715-728.	1.4	4

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91	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
92	Predicting bilberry and cowberry yields using airborne laser scanning and other auxiliary data combined with National Forest Inventory field plot data. Forest Ecology and Management, 2021, 502, 119737.	3.2	3
93	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
94	Modeling Forest Tree Data Using Sequential Spatial Point Processes. Journal of Agricultural, Biological, and Environmental Statistics, 2022, 27, 88-108.	1.4	2
95	Request-driven generation of calculation chains for adaptive forest analysis. Scandinavian Journal of Forest Research, 2011, 26, 2-10.	1.4	1
96	Simple approach to improving the extraction of canopy metrics from airborne laser scanning data for tropical forests. Journal of Applied Remote Sensing, 2016, 10, 016019.	1.3	0
97	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
98	Inventory of Forest Plantations. Managing Forest Ecosystems, 2014, , 253-268.	0.9	0