Metadata form of Silva Fennica

This form is designed for writing the elements of metadata, which are used in the description of research materials such as data and codes. The form is based on the work done in the Work Group "Description of research materials" under the Finnish Open Science Coordination.

Item	Description	Responsible
Name of the data / code	**Harvester production files (hpr files) and information computed from the files**	Author
Author & ORCID	**Hpr files: Owner companies of Metsäteho Oy** **Computed information:** **Juha-Antti Sorsa (no ORCID),** **Kirsi Riekki 0009-0007-8366-3297** **Heikki Ovaskainen 0000-0001-5063-6662** **Riku Tarvainen 0009-0001-2336-3125**	Author
Authors' affiliation(s)	**Computed information:** **Juha-Antti Sorsa, Metsäteho Oy** **Kirsi Riekki, Metsäteho Oy** **Heikki Ovaskainen, Metsäteho Oy** **Riku Tarvainen, Metsäteho Oy.** **Other authors of the paper:** **Kalle Kärhä, University of Eastern Finland** **Jukka Malinen, Metsäteho Oy**	Author
Owner of the material	**Metsäteho Oy**	Author
Publisher	**Metsäteho Oy**	Author
Funder	**Metsäteho Oy.** **Ministry of Agriculture and Forestry program "Nappaa hiilestä kiinni".** **"Kestävän metsätalouden todentaminen ja menetelmät (KESTOTÄSMÄ)" funded by EU's Recovery and Resilience Facility (RRF).**	Author
Description	**Harvester production files (hpr files). HPR files offer information of individual harvested trees and harvester machine. In this research, precise spatial information of harvester head and harvester was used to locate harvested trees. HPR also records information about tree dimension i.e. diameters and length of commercial part of stem.**	Author
Methods	**All methods are described in our research paper.** **Measurement areas in the forest were selected (targeted sampling) by their area and characteristics of the strip road networks. Within the selected areas, complete field measurement of trees was performed with Trimble R12i GNSS receiver and Trimble Access field measuring software.** **Geospatial analysis of field data and hpr data was performed with QGIS 3 software and own program codes in Python 3.** **Diameters of the hpr trees were obtained with Metsäteho's in-house tool which is based on nonlinear least squares fitting of Laasasenaho's taper curve model and implemented as Metsäteho's program code in C#, see Appendix A of paper. Diameters were used to compile diameter distributions and calculate basal areas of the trees.** **Reynold's Error Index was used to compare diameter distributions.**	Author
Variables	**ObjectID = identifier of measument area,** **StemID = identifier of stem,** **SpeciesGroup = tree species,**	Author

	DBH (m) = diameter at breast height, **LatitudeMachine (degree) = harvester's latitude coordinate,** **LongitudeMachine (degree) = harvester's longitude coordinate,** **MachineBearing (degree) = direction of machine,** **CraneAngle (degree) = direction of crane,** **MeanCraneLength (m) = crane lenght,** **fitted_DBH = diameter at breast height computed by Metsäteho's tool,** **fitted_D130 = diameter at 130 cm above stump computed by Metsäteho's tool,** **X (m) = metric latitude coordinate of harvester,** **Y (m) = metric longitude coordinate of harvester,** **newX (m) = corrected metric latitude coordinate of harvester,** **newY(m) = corrected metric longitude coordinate of harvester,** **crane_ANGLE_corrected (degree) = due to asymmetrical boom placement in Komatsu, corrected angle of crane,** **striproadtree = Boolean variable to mark tree is classified as strip road tree,** **basalarea (m^2) = basal area of individual tree**	
Author keywords	**Harvester data, diameter distribution**	Author
Vocabulary keywords (community standard)	**Harvester =** **https://dictionary.cambridge.org/dictionary/english/harvester** **Data = https://dictionary.cambridge.org/dictionary/english/data**	Author
Discipline	Field(s) of study to which the material is related. This is generally given by the repository as they use specific classifications.	Archive/Repository/Publisher
Type of material	**No additional data than the research paper itself is deposited** **Program codes are deposited within Metsäteho Oy**	Author
Language	**ENG**	Author
Time range covered	**2024-01-01 – 2025-02-01**	Author
Geographic region	**FIN**	Author
Version	**Only one version exists**	Author
File format(s)	**Metsäteho Oy internal archive contains:** **.py** **.docx** **.cs**	Author
Availability of the materials (open, embargo, registration, limited, registration required)	**Private forest sector company owns the data and it is restricted.**	Author
Justification for access restrictions	**Data is restricted due to privacy policy.**	Author
Licence	A licence defines the conditions for reuse of the material. Silva Fennica requests the use of Creative Commons licences.	Author
Connections with other research materials	**Research data is not related to other data.**	Author
Access to the connected research materials	**Metsäteho Oy controls the access to data.**	Author
Codes only: hardware/software requirements for running the code	**Python 3.10 was used to calculate results.** **Processor 12th Gen Intel(R) Core(TM) i7-12700H, 2300 Mhz, 14 Core(s), 20 Logical Processor(s)** **Microsoft Windows 11 Business Version 10.0.22631**	Author

Connections to other products of research	**Data have not been used in other articles**	Author
Personal data	**Material contains detailed spatial information of harvesting operations which can be identified to landowner. This is one of the reasons why the data is not shared openly.**	Author
Confidential or secret data	**Yes**	Author
Publication date	Date of publication in an archive or repository.	Archive/Repository/Publisher
Preservation policy	**No data is publicly shared.**	Author
Permanent identifier (PID)	Unambiguous, permanent identifier of the material. The identifier may be DOI, URN or accession number.	Archive/Repository/Publisher