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EARTH OBSERVATION RESEARCH

EORC TALK – Talk at the Earth Observation Research Cluster

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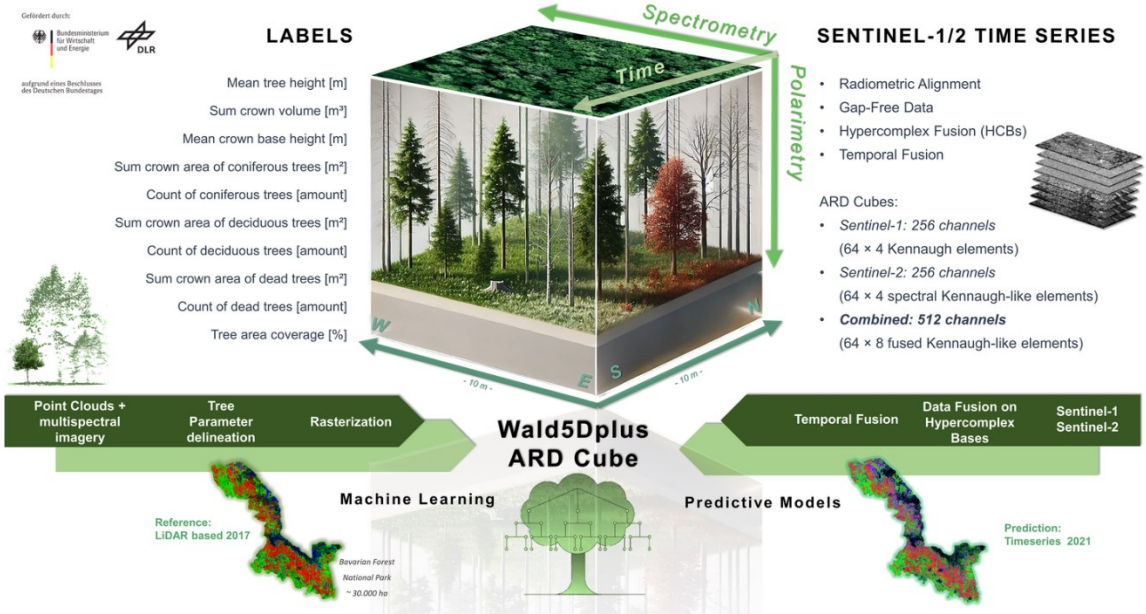
Wald5Dplus: An open benchmark dataset for the combined spatial, spectral, polarimetric and temporal characterization of forest stands using Sentinel-1 & -2

Wald5Dplus is an open benchmark dataset designed to advance AI-driven forest ecosystem monitoring through multi-sensor, multi-temporal data fusion. By integrating Sentinel-1 SAR and Sentinel-2 optical data on hypercomplex bases, Wald5Dplus provides high-resolution Analysis Ready Data (ARD) cubes that capture spectral, polarimetric, and temporal characteristics across diverse German forest sites. Optimized with an ensemble-based Random Forest model, Wald5Dplus supports accurate, scalable predictions of forest attributes, demonstrating strong transferability across regions and underscoring its value for regional forest monitoring applications.



Sarah Hauser (M.Sc.) holds a Master's degree in Geoinformation Sciences and is a Ph.D. candidate at the Karlsruhe Institute of Technology, with expertise in data fusion and AI applications in forestry remote sensing. At the Munich University of Applied Sciences, she worked on the "Wald5Dplus" project, creating an AI benchmark dataset for forestry with Sentinel data. She is now a Research Associate at the Institute for Applications of Machine Learning and Intelligent Systems, co-supervising student theses and advancing enhanced labelling methods for forest data applications.

Prof. Dr.-Ing. Andreas Schmitt is Professor of Applied Geodesy at the Munich University of Applied Sciences with a research focus on remote sensing, geospatial statistics, data fusion, and automated interpretation. He has made significant contributions to radar image preprocessing and multi-source data analysis including innovations like the Kennaugh elements and the "Schmittlets" during his tenure at the German Aerospace Center. He is a member of the Institute for Applications of Machine Learning and Intelligent Systems and has held a research professorship since 2020.

Tuesday, 13th of May, 03 p.m. | Seminar room 1 (00.B.04), John-Skilton-Str. 4a

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