

NFDI Matwerk - Reference Datasets

Within NFDI-MatWerk (“National Research Data Infrastructure for Material Sciences” / “Nationale Forschungsdateninfrastruktur für Materialwissenschaften und Werkstofftechnik”), the Task Area Materials Data Infrastructure (TA-MDI) will provide tools and services to easily store, share, search, and analyze data and metadata. Such a digital materials environment will ensure data integrity, provenance, and authorship. The MatWerk consortium aims to develop specific solutions jointly with Participant Projects (PPs), which are scientific groups or institutes covering different domains, from theory and simulations to experiments. The Data Exploitation Methods group of the Karlsruhe Institute of Technology-Steinbuch Centre of Computing, as part of TA-MDI, is developing specific solutions in close collaboration with three PPs.

PP07, together with the University of Stuttgart, aims at the image-based prediction of the material properties of stochastic microstructures using high-performance solvers and machine learning. PP13, in cooperation with the University of Saarland, focuses on tomographic methods at various scales in materials research. PP18, together with the Federal Institute for Materials Research and Testing (“Bundesanstalt für Materialforschung und -prüfung”), aspires to define the criteria for materials reference datasets and usage analytics.

The requirements and goals are comparable for each PP: their research outputs, which are scientific datasets, should conform to the FAIR (Findable, Accessible, Interoperable, Reusable) principles. We aim to shape them from a data management perspective making use of the FAIR Digital Object concept, including structured metadata and storage solutions. The results will be a blueprint which will act as a reference for future datasets. Even though the collaboration is in an early stage, the initial steps already show the added value of this approach.

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Please assign your poster to one of the following keywords.

Tools

Please assign yourself (presenting author) to one of the stakeholders.

Data Infrastructure Provider

Please specify “other” (stakeholder)

In addition please add keywords.

FAIR,
NFDI,
Materials Science,
Metadata

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