Symposium Pushing the Boundaries of Fair Data Practices for Condensed Matter Insights: From Workflows to Machine Learning (SYFD)

jointly organised by
the Surface Science Division (O),
the Chemical and Polymer Physics Division (CPP),
the Thin Films Division (DS), and
the Magnetism Division (MA)

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This symposium will highlight best practice in FAIR data and the development of streamlined workflows for open data and machine learning techniques. To be jointly organised by DAPHNE4NFDI and FAIRmat, topics will cover optimizing data collection methodologies and workflows, implementing electronic lab notebooks for efficient data recording, and integrating on-the-fly analysis techniques to enhance experimental outcomes. Moreover, the seminar will showcase cutting-edge advancements in data analysis methodologies, with a particular focus on on-the-fly analysis and machine learning techniques tailored to synchrotron and neutron data. Participants will discuss the integration of machine learning algorithms for data processing, analysis, and interpretation, thereby unlocking new avenues for scientific discovery and innovation. Furthermore, the DPG symposium will address the challenges associated with the storage and management of big data generated by modern data collection techniques and in particular, for condensed matter at synchrotron and neutron facilities. The symposium will provide the international state-of-the-art of the different disciplines and technology and give a platform to discuss future challenges and develop common solutions.

Overview of Invited Talks and Sessions

(Lecture hall H1)

Invited Talks

SYFD 1.1	Wed	9:30–10:00	H1	**Pushing the Boundaries of Fair Data Practices for Condensed Matter Insight** — •Astrid Schneidwind
SYFD 1.2	Wed	10:00–10:30	H1	**Establishing Workflows of Experimental Solar Cell Data into NOMAD** — Edgar Nandayapa, Paolo Graniero, Jose Marquez, Michael Götte, •Eva Unger
SYFD 1.3	Wed	10:30–11:00	H1	**Building up the EOSC Federation** — •Ute Gunsenheimer
SYFD 1.4	Wed	11:15–11:45	H1	**Data-Driven Materials Science for Energy-Sustainable Applications** — •Jacqueline Cole
SYFD 1.5	Wed	11:45–12:15	H1	**Machine Learning and FAIR Data in X-ray Surface Science** — •Stefan Kowarik

Sessions

SYFD 1.1–1.5	Wed	9:30–12:15	H1	**Pushing the Boundaries of Fair Data Practices for Condensed Matter Insights**