FLAIR Colloquium

Kadi4Mat – Application and Automation

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Abstract

The increasing complexity and volume of research data in materials science requires innovative solutions for its management and analysis. Kadi4Mat, the Karlsruhe data infrastructure for materials science, offers a comprehensive platform for the automation of experiments and simulations. This platform enables the seamless integration of devices and simulation environments, covering the entire research process from data acquisition to publication in a structured way [1].

By applying machine learning and advanced data management techniques, Kadi4Mat supports the efficient storage, analysis and visualization of large amounts of data. This promotes collaboration between experimenters, theorists and simulators and facilitates the acquisition of new knowledge and the development of innovative materials [2].

The modular architecture of Kadi4Mat allows the individual needs of different research disciplines to be taken into account and increases transparency in data processing [3].

Kadi4Mat thus contributes significantly to improving the reproducibility and accessibility of research data and represents an important resource for materials science and beyond.

[1] https://kit-neuland.de/de/blog/ganzheitliches-forschungsdatenmanagement
[2] https://kadi.iam.kit.edu/kadi-ai
[3] https://www.knmf.kit.edu/Kadi4Mat.php