MSE 2024

24 - 26 Sep 2024 (Darmstadt)

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D06: Materials Science in the Era of Digital Transformation and Machine Learning

The digital transformation is enabling the acceleration of the design, discovery, development and deployment of new functional and structural materials solutions. Traditional methods for developing new materials, such as the empirical trial-and-error method, cannot keep pace with the current development of materials science due to their long development cycles and high costs. Data driven approaches, especially machine learning methods, play an important role in materials science already today, and also in the immediate future. These include effectively work with high-dimensional data sets, prediction of material properties, high-throughput methods for determining phase diagrams and crystal structures, material design, and efficient and cost-effective methods for controlling material processes.

The current wide range of possibilities but also the limits of data-centric methods such as artificial intelligence, autonomous labs, high-throughput materials synthesis and characterization, and materials combinatorics will be brought together in this symposium.

Symposium Organizer

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