Press Release

Fraunhofer ITWM Helps to Establish National Research Data Infrastructure

Bringing Order to (Research) Data

Research data should be findable, accessible, interoperable and reusable. So far, however, they are often decentralized, project-related or only available for a limited period of time. The National Research Data Infrastructure (NFDI) initiative aims to combat this with a permanent digital repository of knowledge. With the Mathematical Research Data Initiative (MaRDI), Fraunhofer ITWM is also involved.

In the National Research Data Infrastructure (NFDI), valuable data from science and research can be systematically accessed, networked and made usable in a sustainable and qualitative manner for the entire German science system. In this way, the NFDI implements the FAIR principle: **F**indable, **A**ccessible, **I**nteroperable, **R**eusable – fair data, fair research processes.

Open Access for Research Data

Similar to open access for publications – meaning free access to research results in scientific journals – the NFDI wants to make research data and models freely available. Researchers then access existing methods instead of reinventing the scientific wheel. »Dissertations are a good example,« says Dr. Michael Burger, responsible for MaRDI at Fraunhofer ITWM. »Often, PhD students have to collect data and develop models that already exist – but are either not freely accessible or not documented. If they could fall back on this, there would be more time for the actual research work.«

Working in Task Areas

The NFDI is made up of consortia from various disciplines. MaRDI, the consortium of mathematics, is divided into the following so-called task areas: computer algebra, scientific computing, statistics and machine learning, as well as cooperation with other disciplines. The researchers of the Fraunhofer ITWM primarily organize the contact among each other and deal with the integration of data and models from other disciplines. Mathematics as a cross-sectional science plays a special role; therefore, not only the Kaiserslautern researchers were happy that their funding application was accepted, but also the entire consortium.

In addition to universities in Stuttgart, Munich, Münster and Berlin, the MaRDI consortium also includes institutes of the Max Planck and Leibniz Societies, the Zuse Institute Berlin, the Mathematical Research Institute Oberwolfach, the German Mathematicians' Association and the Weierstrass Institute for Applied Analysis and Stochastics (WIAS). The director of the latter, Prof. Michael Hintermüller, is the spokesman of the consortium. The head of the Fraunhofer ITWM, Prof. Dr. Anita Schöbel, is co-spokesperson. Just about a year ago, she was also appointed to the Senate of the NFDI.

In total, the German Research Foundation (DFG) will support MaRDI with 12 million euros over the next five years; Fraunhofer ITWM will receive about 580 000 euros of this amount, and the Department of Mathematics at TU Kaiserslautern will receive about 770 000 euros.

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About the Fraunhofer Institute for Industrial Mathematics ITWM

The Fraunhofer Institute for Industrial Mathematics ITWM in Kaiserslautern is one of the largest research institutes for industrial mathematics worldwide. We see our task in further developing mathematics as a key technology and providing innovative impetus. Our focus is on the implementation of mathematical methods and technology in application projects and their further development in research projects. The close cooperation with partners from industry guarantees the high practical relevance of our work.

Their integral components are consulting, implementation and support in the application of high-performance computer technology and the provision of tailor-made software solutions. Our various competencies address a wide range of customers: automotive industry, mechanical engineering, textile industry, energy and finance. This also benefits from our good networking, for example in the High performance center "Simulation- and software-based innovation".