



LUMEN: a bridge between disciplines – FIZ Karlsruhe starts a new EU research project

08.01.2025— How do you combine mathematics with molecular dynamics, earth system sciences and social sciences? FIZ Karlsruhe shows how: With the LUMEN (Linked User-driven Multidisciplinary Exploration Network) project, which starts on January 1, 2025, the Leibniz Institute is focusing on international and transdisciplinary collaboration.

Funded by the European Open Science Cloud (EOSC), LUMEN is developing innovative platforms and tools to better connect researchers from different disciplines. The focus of the research that FIZ Karlsruhe is conducting as part of the project is on mathematics, which is a central component of FIZ Karlsruhe's expertise thanks to success stories such as zbMATH Open.

Mathematics at the center of interdisciplinary collaboration

This expertise is very welcome at LUMEN. Moritz Schubotz, project manager at FIZ Karlsruhe, explains: "In the LUMEN project, FIZ Karlsruhe is continuing its involvement in the EOSC and developing solutions for interdisciplinary collaboration. Building on previous EOSC projects, we are sharing our expertise in mathematics and at the same time learning from other disciplines. The synergies created in this way improve the EOSC without ignoring disciplinespecific needs."

The project uses findings from existing EOSC projects and enhances them with AI-supported technologies, semantic data models and customized tools. The further development of the GoTriple platform is particularly exciting. Originally



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designed for the humanities and social sciences, it is now being expanded into a universal infrastructure that meets the needs of a wide range of disciplines. A focus is on mathematics, which offers innovative possibilities with specific functions such as a platform for collaborative writing and the linking of publications, software and data. Research communities are given the opportunity to build their own platforms tailored to their specific requirements on a common technological basis. This is complemented by the use of AI, for example through powerful chatbots and visualization tools that make scientific content more accessible and support researchers in discovering new connections.

Strong partnerships for open science

Together with international partners such as CNRS (France), the German National Library of Science and Technology (Germany) and the University of Bologna (Italy), FIZ Karlsruhe will have a lasting impact on the European Open Science Cloud over the next three years.

LUMEN shows how mathematics breaks down boundaries - and opens up new paths for networked, open science.

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leading addresses for scientific information and services and a member of the Leibniz Association. Our core tasks are to provide science and industry with professional research and patent information and to develop innovative information infrastructures, with, for example, a focus on research data management, knowledge graphs and digital platforms. To this end, we conduct our own research, cooperate with renowned universities and research associations and are internationally and interdisciplinarily networked. FIZ Karlsruhe is a non-profit limited liability company and one of the largest non-academic institutions of its kind. For more information, please visit www.fiz-karlsruhe.de/en

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