

Interdisciplinary Colloquium on Digitalisation of Research



Leibniz ScienceCampus
**Digital Transformation
of Research**

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FIZ Karlsruhe

Leibniz Institute for Information Infrastructure



Karlsruhe Institute of Technology



Interdisciplinary Colloquium on Digitalisation of Research, Daniel Memmert, Katja Keller, Claudia Niessner, 6 November 2025

6th of November 2025 / 11:30-12:30

Interdisciplinary Colloquium on Digitalisation of Research

Machine Learning in Professional Soccer



Daniel Memmert

German Sport University
Cologne, Institute of Exercise
Training and Sport Informatics



Katja Keller

Karlsruhe Institute of
Technology, Institute of Sports
and Sports Science (IfSS)



Claudia Niessner

Karlsruhe Institute of
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- Growth core to **establish new research branch.**

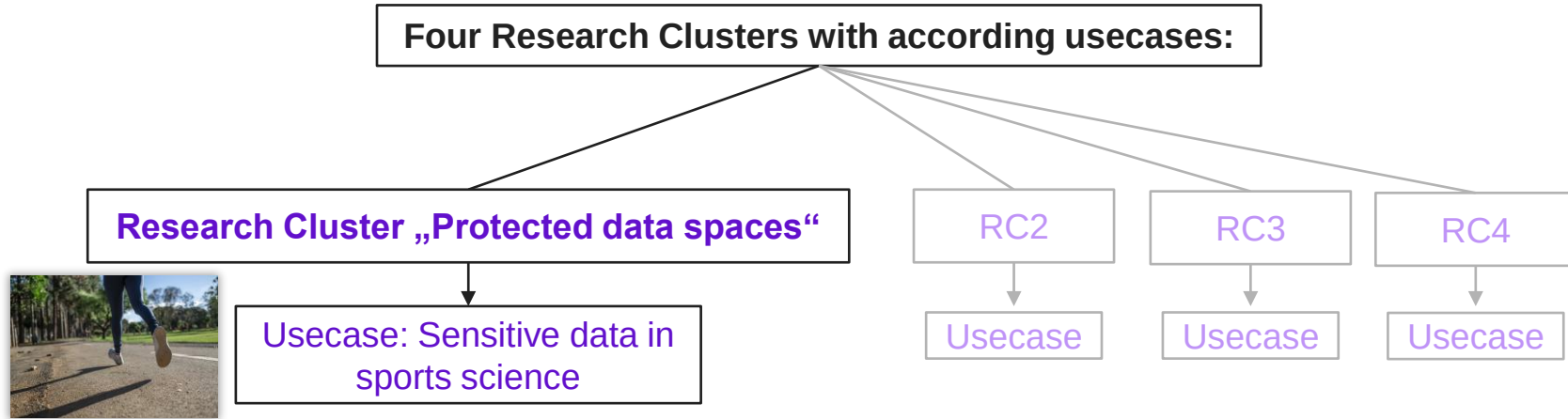


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- Planned as a **4+4 years** project (start: September 2023).
- Funded by the Leibniz Association + FIZ KA + KIT.
- Analyse the process of **digitalisation of research.**
- **Multilevel interdisciplinary approach.**

Structure of DiTraRe



These work packages are addressed within the following dimensions:

Dimension 1:
Reflection and
resonance

Dimension 2:
Exploration and
knowledge
organisation

Dimension 3:
Legal and ethical
challenges

Dimension 4:
Tools and processes

Use Case in DiTraRe: Sensitive data in sports science

Katja Keller, Christian Rose, Claudia Niessner

6th November 2025, DiTraRe Colloquium



Game plan

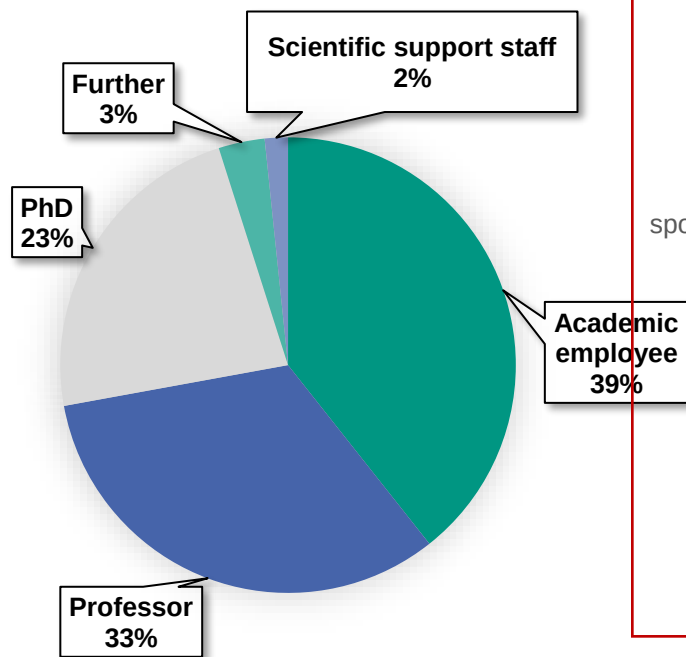
1. One sports science?
2. Our background
3. Preliminary results and future work plan

Game plan

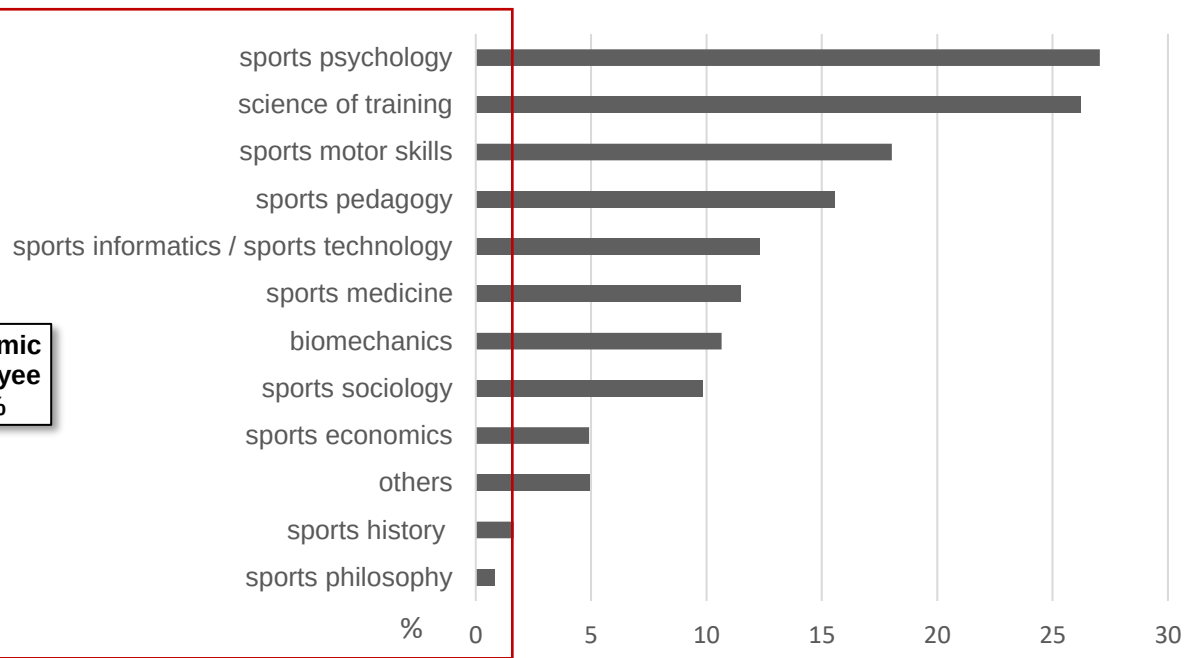
1. One sports science?

Online survey: RDM in sports science

Career status

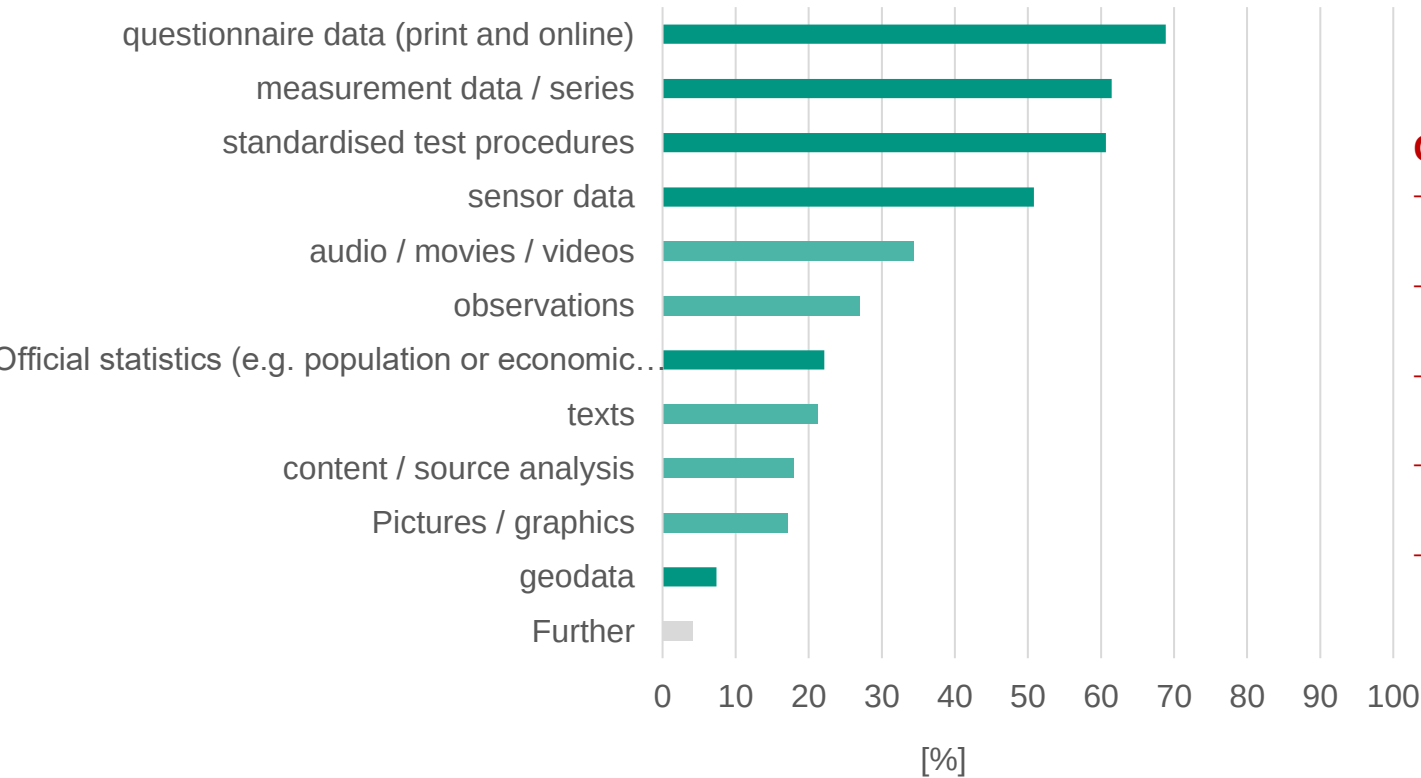


Affiliations (multiple answers possible)



N=122, Keller et al. 2025

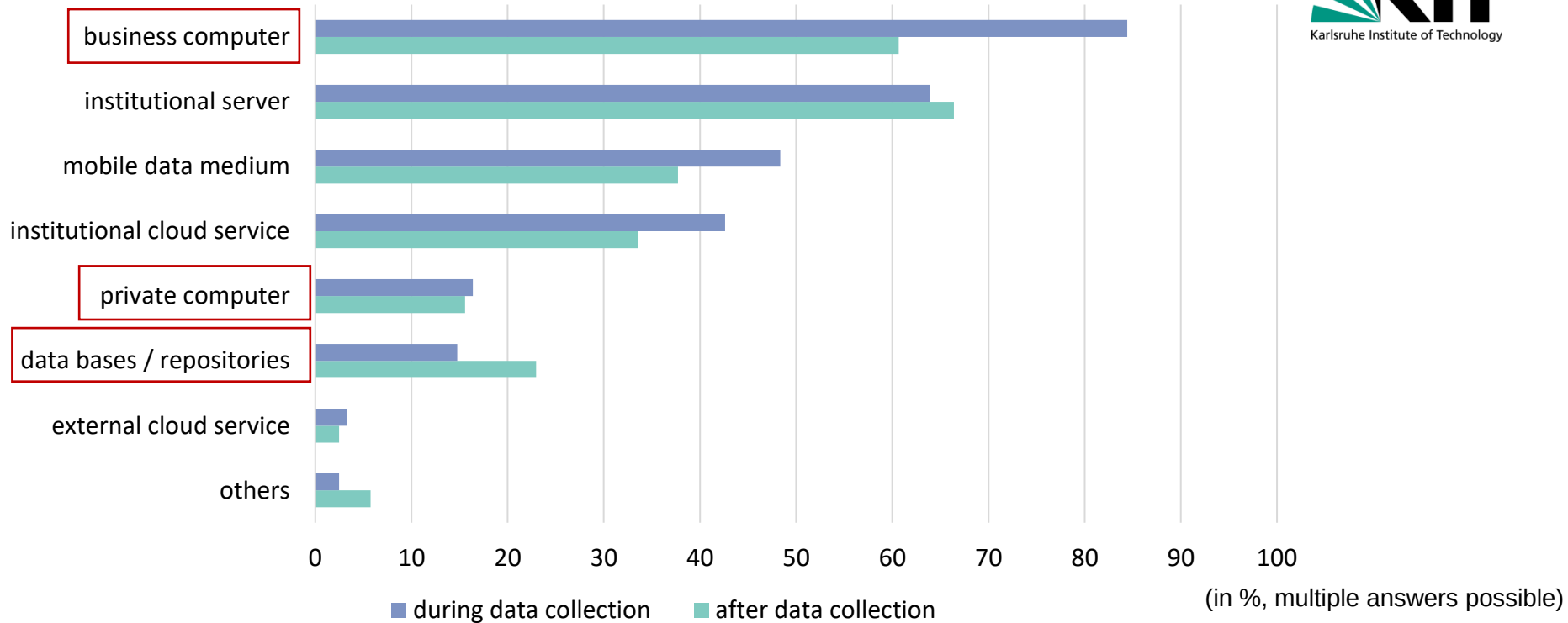
Data types in sports science



Great variance of data:

- Quantitative and qualitative
- Different formats / software
- Different levels of sensitivity
- Range from small to large data sets
- ...

Storage of data by sports scientists

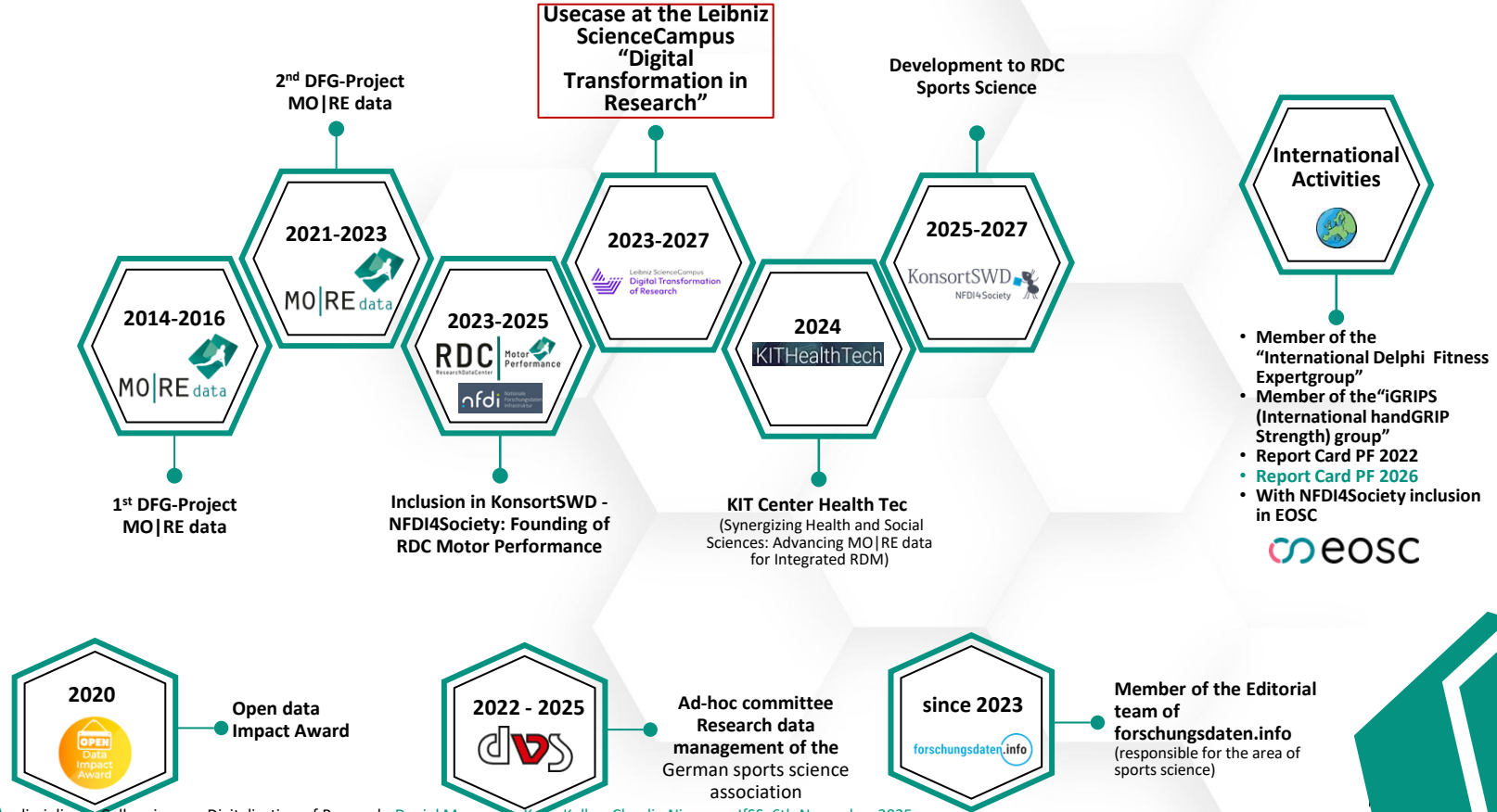


N=122, Keller et al. 2025

Game plan

2. Our background

Research data management at the IfSS



Research Data Center (RDC) Motor Performance

Welcome to the Research Data Center Motor Performance.

The first research data center for motor performance data.

Data can be uploaded on MO|RE data: [MO|RE data in the RDC Motor Performance](#) .

All **information** regarding **usage** can be found on the [support page](#).

Learn more about the **project** and the topic of **open science** under [project](#).

If you would like to **contribute data**, you can find all the information under [upload data](#).



<https://www.ifss.kit.edu/RDC>

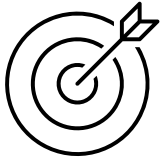
Game plan

3. Preliminary results and future work plan

Our Usecase in DiTraRe



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Aim: Concept for the secure processing of sensitive data



Via:

- Trustworthy IT basis
- Differentiated access management
- Integrated proof mechanisms (quality, data protection, personal rights)

First results



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- ✓ First **Ontology** concept as basis for a **knowledge graph** representing sports motor data (from MO|RE data)
- ✓ New access way: **Scientific Usefile** for scientific use only (at the RDC)
- ✓ **Fact sheets** regarding sensitive data in sports science (Eckardt et al., 2025)

Future work plan



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Legally coordinated **informed consent** for study participants



Technical and legal **concept for sharing sensitive data** (e.g. remote access or virtual reading room)



Ontology as basis for a **knowledge graph** representing sports motor data (from MO|RE data)



Legal **guidelines** for handling sensitive data in sports science

Literature

- Keller, K., Pleger, A., Niessner, C. *et al.* The status quo of research data management in the German-speaking sports sciences—Results of an online pilot survey. *Ger J Exerc Sport Res* (2025). <https://doi.org/10.1007/s12662-025-01033-0>
- Eckardt, N., Schlenker, L., Zimmermann, H., Eberhardt, T., Rose, C., Fleps, M., Niessner, C., & Keller, K. (2025). Fact Sheets zu sensiblen Daten in der Sportwissenschaft. Zenodo. <https://doi.org/10.5281/zenodo.16032760> (German)
- Klemm, K., Pleger, A., Niessner, C., Ueding, E., & Krüger, M. (2024). Research data management in the German-speaking Sports Sciences - Survey on the Status Quo [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.11204024>
- Klemm, K., Bös, K., Kron, H., Eberhardt, T., Woll, A., & Niessner, C. (2024). Development and Introduction of a Disciplinary Data Repository for Sport Scientists Based on the Example MO|RE Data: eResearch Infrastructure for Motor Research Data. *Bausteine Forschungsdatenmanagement*, (1), 1–14. <https://doi.org/10.17192/bfdm.2024.1.8615>
- Ondraszek, S. R., Waitelonis, J., Keller, K., Niessner, C., Jacyszyn, A. M., & Sack, H. (2025). *Ontologies in Motion: A BFO-Based Approach to Knowledge Graph Construction for Motor Performance Research Data in Sports Science* (No. arXiv:2510.15983). arXiv. <https://doi.org/10.48550/arXiv.2510.15983>

Next Colloquium



Interdisciplinary Colloquium on
Digitalisation of Research

4th of December 2025 | 11:00-12:00

Social Scientific Data Quality and Reproducibility in the AI Era: Challenges and Pathways



Stefan Dietze

GESIS Leibniz Institute for the Social Sciences
Heinrich Heine University Düsseldorf



Join us in person
or online urlr.me/!ditrare-colloquium

Venue

FIZ Karlsruhe - Leibniz Institute for
Information Infrastructure, Room Humboldt,
Hermann-von-Helmholtz-Platz 1,
76344 Eggenstein-Leopoldshafen, KIT Campus
North, building 241 (KIT card needed to enter,
please contact us: ditrare@fiz-karlsruhe.de)



DiTraRe Symposium

- **2-3 December 2025**
- ZKM Karlsruhe
- Sessions on:
 - Knowledge Representation and AI
 - Law and Ethics in Digitalisation of Research
 - Research Infrastructures
 - Impact on Science and Society
- Poster session

<https://www.ditrare.de/en/symposium-2025>



Thank you for joining!

Stay connected

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 - Website: www.ditrare.de/en
 - Email: ditrare@fiz-karlsruhe.de
 - LinkedIn: www.linkedin.com/company/ditrare
 - Mastodon: social.kit.edu/@DiTraRe
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- Discussion forum: www.ditrare.de/en/forum
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