

Grey Matters: Strategic Approaches to Managing Non-Traditional Research Outputs

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TIB Hannover

08.06.2026

PubForum'26



Global Forum for Publishers

Overview of TIB and TIB's collection of grey literature

TIB

The TIB – Leibniz Information Centre for Science and Technology and University Library is the German National Library of Science and Technology and the world's largest special library for natural sciences and technology. It enables access to unique data collections.



Holdings

Total media	10.3 M
Books	6.2 M
Share of grey literature	62%
Total journal subscriptions	67.814
Journal holdings TIB-only in Germany	65%
Total shelf length	213 km



Focal points of the collection

Technology Architecture
Chemistry Physics
Maths Computer Science



TIB's collection of grey literature

technical reports conference proceedings
german research reports
dissertations scientific videos
other non-commercially published research outputs



German research reports (DtF) at TIB: introduction

What?

TIB is deposit library for research reports for various ministries and research-promoting institutions, including the Federal Ministry of Research, Technology and Space (BMFTR). The publications contain the results, current status or progress of research projects.

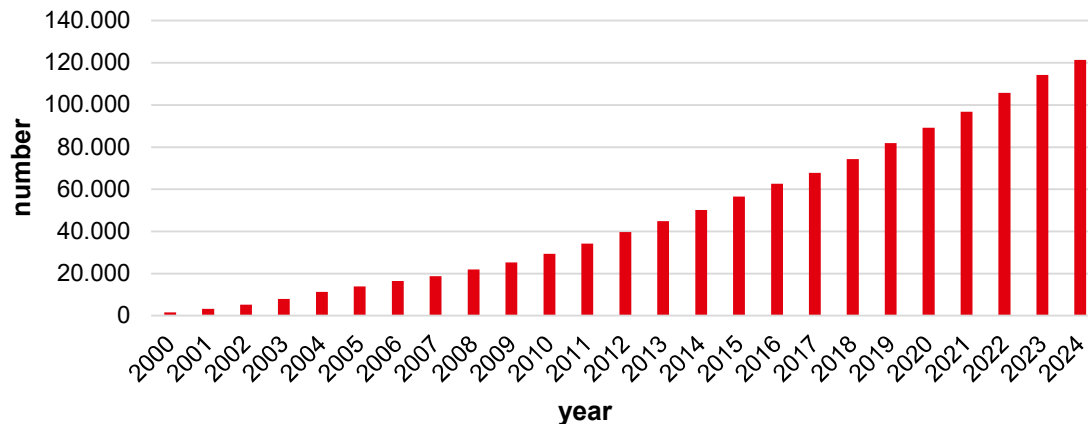
When?

Collection
startet
1969

Why?

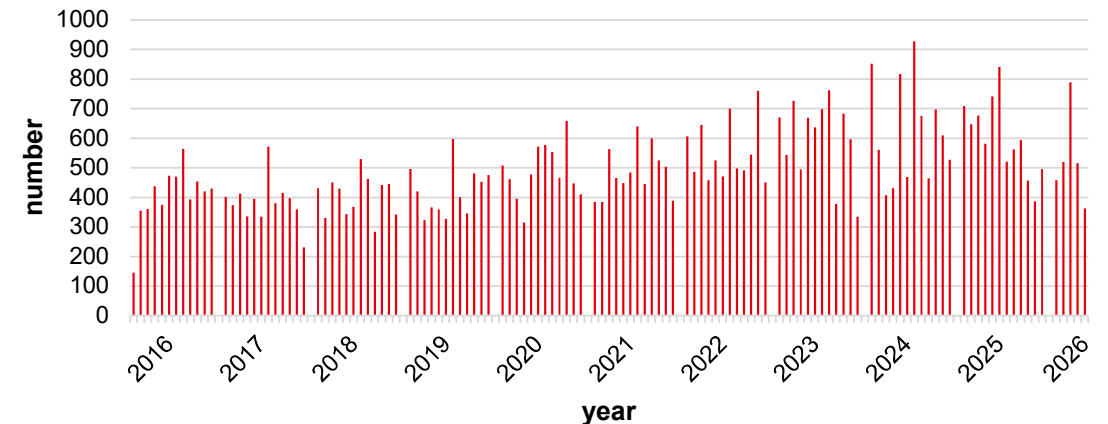
Important contents:
different to journal articles
(e.g. negative results)

Digital Holdings: German Research Reports



- Current Holdings: ca. 300 000 print and 140 000 digital

Submissions per month



- Increase by ca 600 reports/month

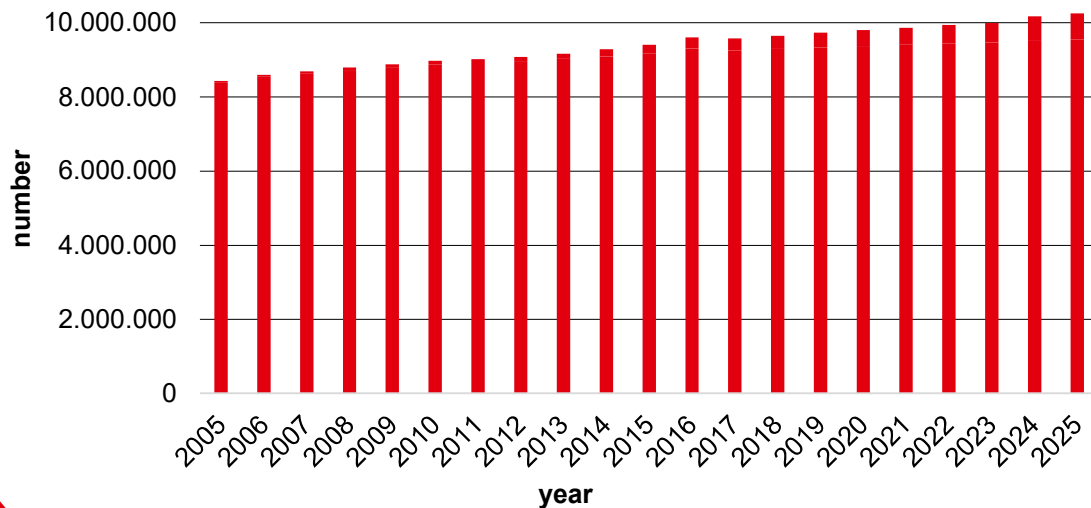
TIB's e-preferred-strategy



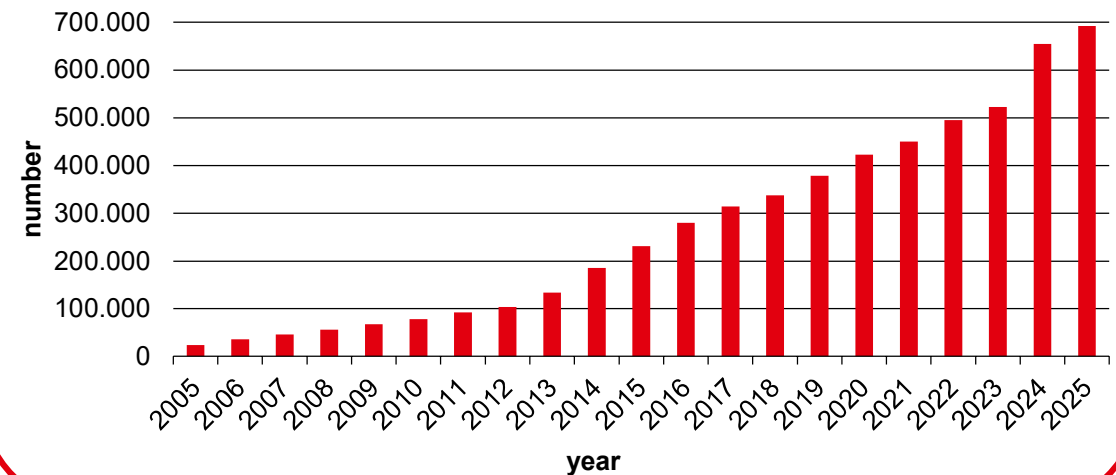
What does 'e-preferred' mean at TIB?

TIB has implemented a collection-wide shift to **digital- first acquisition** across ALL literature collections (including grey literature) – **prioritising electronic formats over physical copies** (where possible).

Holdings of TIB



Number of digital holdings at TIB (excluding electronic journals and newspapers)



TIB's e-preferred-strategy

- Future-oriented and sustainable development of information provision

- Reduction in acquisition of printed media in favour of electronic resources

goals



- Improved, location-independent access to information, particularly for users outside the local area (especially academic users and members of the public)

- Focus on the acquisition and provision of digital content

TIB's e-preferred-strategy

Topics to be considered

Remote access for users nationwide (authentication, access to content)

Development of the **TIB portal**: content documentation, discoverability, access

Archiving: content selection, legal requirements and technical implementation

Acquisition and licensing: content selection and legal implementation

Collection presentation: utilisation of shelf space no longer required, revision of the reading room concept, on-site user requirements

TIB's e-preferred-strategy: Implementation for DtF

First digital submission: 1992

BMFT-Programm

**"HTR-spezifische Rechenmethoden
und Prüfverfahren
zu CFC Bauteilen"**

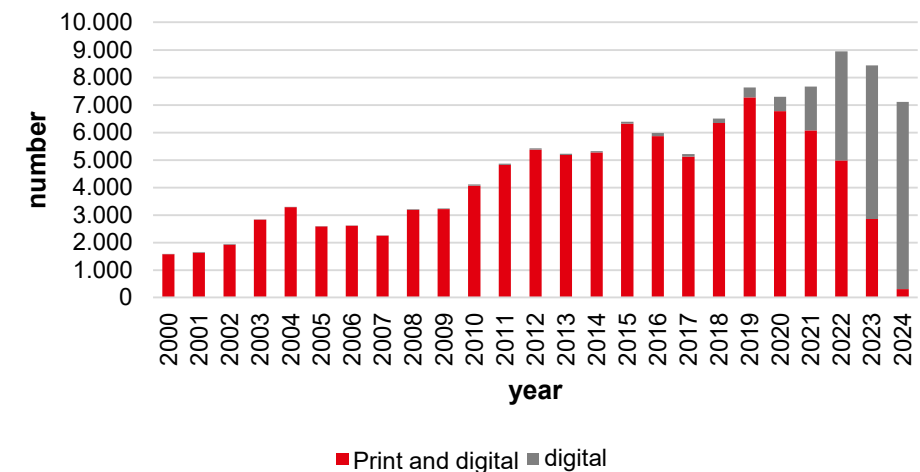
Abschlußbericht

Förderkennzeichen: 03 SIG 2012

Berichtszeitraum: 01.01.1988 bis 31.12.1991

- Digital reports since the 90s on various media: floppy discs, CD, USB...
- Since 2022: no obligation for print submission

Annual submissions for DtF



➤ **Availability** through TIB catalogue, discovery system and union catalogue

TIB's e-preferred-strategy: Implementation for DtF

Repository for natural sciences and technology (Renate)

- Collection of research reports since 2025
- Open Access Repository
- Speed-up internal workflows
- Metadata provision by users – curation by library professionals
- Access Options via API

➤ <https://oa.tib.eu/renate/home>



Repository for natural sciences and technology

This repository provides free access to scientific publications from the fields of natural sciences and technology (open access). All authors may use RENATE free of charge to publish their research findings from natural sciences and technology, regardless their institutional affiliation. The publications deposited in this repository are permanently freely accessible and citable. The repository is operated by Technische Informationsbibliothek (TIB).

In addition, RENATE serves as repository for the publication of reports to federally funded research projects (all subjects), e.g. funded by the Federal ministry of Research, Technology and Space. RENATE is also the recommended publishing place for reports to research projects funded by German Research Foundation (DFG) in the fields of natural sciences and technology. Information on uploading your research report can be found at tib.eu/dtf.



Repository for natural sciences and technology

This repository provides free access to scientific publications from the fields of natural sciences and technology (open access). All authors may use RENATE free of charge to publish their research findings from natural sciences and technology, regardless their institutional affiliation. The publications deposited in this repository are permanently freely accessible and citable. The repository is operated by Technische Informationsbibliothek (TIB).

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Filters

Author +

Subject +

Date +

Type +

Version +

Has files +

Search Results

Now showing 21 - 30 of 31918

Item

Humanzellbasierte Neuronennetzwerke für Wirkstofffindung, Toxikologie, und biomedizinische Forschung

(Hannover : Technische Informationsbibliothek, 2026-06-01) Leist, Marcel

Ziel des Vorhabens war die Entwicklung einer robusten, direkt anwendbaren Testmethode zur Erfassung neuromodulatorischer und funktionell neurotoxischer Effekte in humanbasierten Zellmodellen. Im Mittelpunkt stand die Etablierung funktioneller Assays, mit denen nicht nur...

✓ Show more

Item

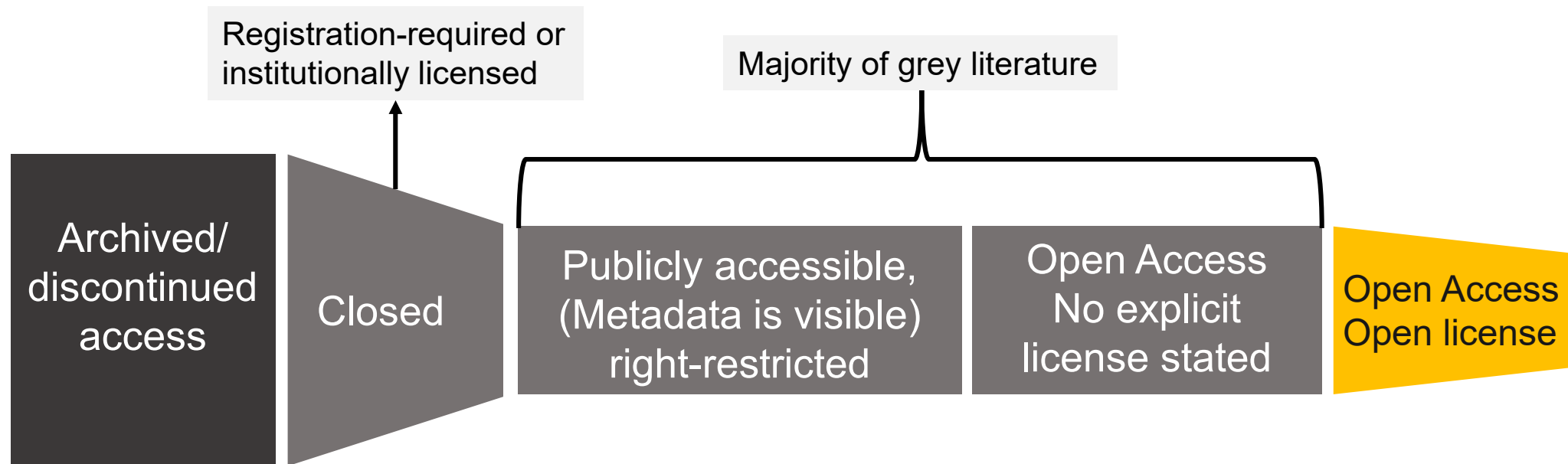
Infrastruktur-Verbesserung der Datenverfügbarkeit zur Digitalisierung des Batterierecyclings (InfraDatRec) - Einrichtung des Data Mining Lab Freiberg; Teilvorhabensbeschreibung Fraunhofer-Gesellschaft

(Hannover : Technische Informationsbibliothek, 2026-06-01) Patsch, Mareike; Mundervald, Ulrike...

➤ Improvement but general discoverability issues of grey literature

Accessibility Challenges of Grey Literature

Access spectrum for grey literature



- Grey literature is often **publicly visible** but **legally closed by default**, because many items lack explicit open licenses even when they are freely accessible online.

Accessibility Challenges of Grey Literature

Technical barriers

- **Link rot** — URLs break after website changes or deletion.
- **No universal metadata schema** or persistent identifier PIDs.
- **Poor or inconsistency metadata** — missing author, date, title, or subject terms.
- **Weak indexing** — search engines cannot crawl dynamic or blocked pages well.
- **Format obsolescence** — old or unsupported file formats become unreadable.
- **No repository deposit** — material stays on personal or project pages.
- **No integrity checks** — files are not monitored for corruption or version drift.



- Standardized search strategy not replicable at scale.
- Critical appraisal is a much more challenging process for non-peer-reviewed sources.

Discoverability: Database Visibility and Metadata Gaps

The fragmented database landscape

(an excerpt with multidisciplinary coverage and free access)

Platform	Coverage	Typical grey literature types	Limitations
OpenGrey	~ 700,000 bibliographic references across Europe	Technical reports, reserach reports, dissertations...	• Discontinued as of Dec 2024 • Records are now effectively invisible
BASE	Over 489 million documents from more than 12,000 content providers	Conference object; Course material; Lecture; Manuscript; Thesis; Non-textual material...	• Uses OAI-PMH harvesting • Excludes organizations lacking technical repository infrastructure
CORE	Over 440 million serachable scholarly resources	Primarily journals and preprints; some thesis; Conference paper	• Orientation is toward formal literature • Misses technical reports and policy briefs not in conformant repositories (OAI-PMH-compatible)
OpenAlex	Over 480 million scholarly works	Preprint; Report; Report-component; Grant; Dataset; Software; libguides; Standards	• Documented as deficient and unreliable for grey literature reference linkage

- The database landscape is broad – but inconsistent!

Discoverability: Database Visibility and Metadata Gaps

Data type taxonomy discrepancy (Example: BASE vs. OpenAlex)

Hierarchical repository taxonomy

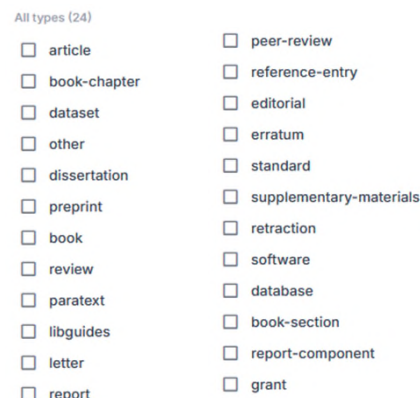
- ~20 types: Broader across media types and degree levels



Flat journal-centric taxonomy

- 23 types: More granular for formal publishing

OpenAlex



Partial overlap

Only 5 types appear in both lists

- Report
- Thesis/Dissertation
- Dataset
- Software
- Review

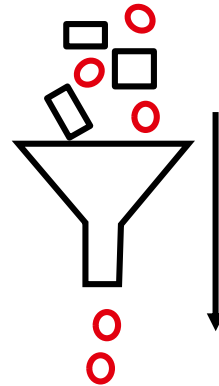
- Different focuses: neither taxonomy fully covers grey literature, which leads to incorrect search results or no results at all for the expected document type.

Accessibility and Discoverability of grey literature

German research reports (DtF)- High discoverability through professional curation

Professional Curation

Unlike fully automated harvesting, autoptic cataloging by librarians in K10plus (union catalogue), ensures consistently high metadata quality.



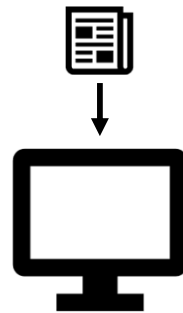
GND Norm-Data Linking

Authors and institutions are linked to the Gemeinsame Normdatei (GND/authority file), subject indexing is performed using GND subject headings whenever possible, enabling unique identification and precise targeted searches.



Hybrid Submission Model (since 2025/07)

Reports (PDFs + metadata) uploads to DSpace via web GUI available; librarians then apply structured metadata curation. Low submission barriers + high discovery quality.



Structural Discoverability

Uploaders can link related resources (datasets, articles, etc.) via DOIs/URLs in metadata-supporting FAIR principles and improve the findability and discoverability.



Accessibility and Discoverability of grey literature

Case Example: German Research Reports (DtF)

AI-flex - Autonome AI für zelluläre Energiesysteme mit zunehmender Flexibilität durch Sektorkopplung und verteilte Speicher

Forschungsprojekt AI-flex: Abschlussbericht



Dateien

Sachbericht_AI-flex_final_nach-1.pdf (6.68 MB)

Datum

2025-08-29

Autor:innen

Quackernack, Lars
Engelmann, Thomas
Haubrock, Jens
Röhrenbeck, Stephan
Zhang, Ping
Ye, Wenyan
Breuersbrock, Jan

Verlag

Hannover : Technische Informationsbibliothek

Zusammenfassung

Derzeitiger Stand von Wissenschaft und Technik: Eine der zentralen Herausforderungen beim Aufbau zellulärer Energiesysteme liegt in dem Mangel eines effizienten Energiemanagements im Niederspannungsbereich begründet. Die Kernaufgabe solcher Managementsysteme besteht in der koordinierten Steuerung einzelner Energiezellen. Das Energiemanagement innerhalb einer Zelle stellt dabei ein hochkomplexes Optimierungsproblem dar, das sich mit konventionellen Lösungsansätzen nur unter erheblichem Aufwand bewältigen lässt. In Anbetracht dessen erfahren Ansätze aus dem Bereich der Künstlichen Intelligenz (KI) eine zunehmende Relevanz in der aktuellen Forschung. Es konnte festgestellt werden, dass KI-Methoden, insbesondere aus den Bereichen maschinelles Lernen und prädiktive Optimierung, eine vielversprechende Lösung darstellen, da sie in der Lage sind, komplexe Datenmengen effizient zu verarbeiten und auf dieser Basis robuste Steuerungsentscheidungen zu treffen. Aktuelle wissenschaftliche Arbeiten belegen, dass KI-basierte Systeme geeignet sind, sowohl kurzfristige Vorhersagen als auch langfristige Strategien in Energiemanagementsystemen zu unterstützen. Zielsetzung der Untersuchung: Die vorliegende Untersuchung hat die Zielsetzung, AI-/ML-basierte Zelloptimierungs-Algorithmen für das Management von Energiezellen in einem zukünftigen europäischen, zellularen Energiesystem zu entwickeln. Insbesondere auf den unteren Ebenen der Verteilnetze, die verschiedene Konstellationen von Energieerzeugern, Speichern und Lasten aufweisen, besteht derzeit ein Mangel an übergeordneten Steuerungssystemen, die eine effiziente, flexible und resiliente Betriebsweise gewährleisten. Ein besonderes Augenmerk liegt dabei auf der Integration von Power-to-X-Technologien (P2H, P2M, P2G) sowie Batteriespeichersystemen (BSS) als zentrale Flexibilitätsoptionen. Um das vorhandene Potenzial optimal nutzen zu können, sind technologiespezifische Steuer- und Optimierungsalgorithmen erforderlich, die innerhalb einer Energiezelle agieren und anschließend in einen übergeordneten Zelloptimierer eingebettet werden können. Methode: In der methodischen Herangehensweise

Schlagwörter

Elektrisches Netz, Niederspannung, zellulärer Ansatz, Zellmanager, P2X, Sektorenkopplung, Verteilnetz

→ Publikationstyp

Report

Version

publishedVersion

→ URI

<https://oa.tib.eu/renate/handle/123456789/26790>
<https://doi.org/10.34657/26027>

Sammlungen

Forschungsberichte Pflichtabgabe (BMFTR, BMWEL...)

→ Lizenz

Creative Commons Attribution-NonDerivs 3.0 Germany

<https://creativecommons.org/licenses/by-nd/3.0/de/>

Komplettanzeige

Outlook

OpenAlex Partnership

Collaborating to improve TIB literature indexing, in particular grey literature indexing - standardized classification for DtFs and related document types across the platform.



ORKG Ask & AI Discovery

AI-powered ORKG Ask platform will increasingly incorporate NTROs, including DtFs – enabling natural-language discovery of grey literature.



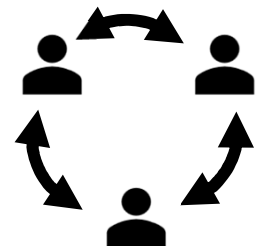
Extending E-Preferred

Systematically rolling out e-preferred workflows to conference proceedings, dissertations, and all grey literature types – remote/open access as primary goal.



Stakeholder Collaboration

Collaborate with all relevant stakeholders to establish more liberal and open licensing frameworks for the research results of the NTROs.



ORKG Ask

<https://ask.orkg.org/de>

The screenshot shows the ORKG Ask web application. On the left, there is a sidebar with a search bar, a 'Suche' button, and a 'Verwandte Elemente' section. The main content area displays a search result for the query 'Welche Themen waren in den letzten zehn Jahren im Bereich des autonomen Fahrens besonders relevant?'. The result includes a warning about the beta phase of German support, a list of three key points (AI-generated, number of articles, and quality control), and a collection of 310 articles. The answer section provides a summary of the findings, mentioning topics like driver behavior and learning. The bottom of the page shows a table with columns for 'Antwort', 'Einblicke', 'TL;DR', and 'Methoden'.

Natural-language queries (EN+DE)

First collection of DtFs included

AI-synthesised, citation-based answers

Filter by collection, language, date...



Thank you for your attention!

Do you have any questions?

Please also feel free to contact us afterwards:

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Julia Hoffmann

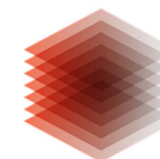
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