

Why so serious?

Generative AI (genAI) in Knowledge-Work from a Text-Workers' Perspective



Leibniz ScienceCampus
Digital Transformation
of Research

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Institute for Technology Assessment and Systems Analysis (ITAS), Karlsruhe Institute of Technology

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FIZ Karlsruhe

Leibniz Institute for Information Infrastructure

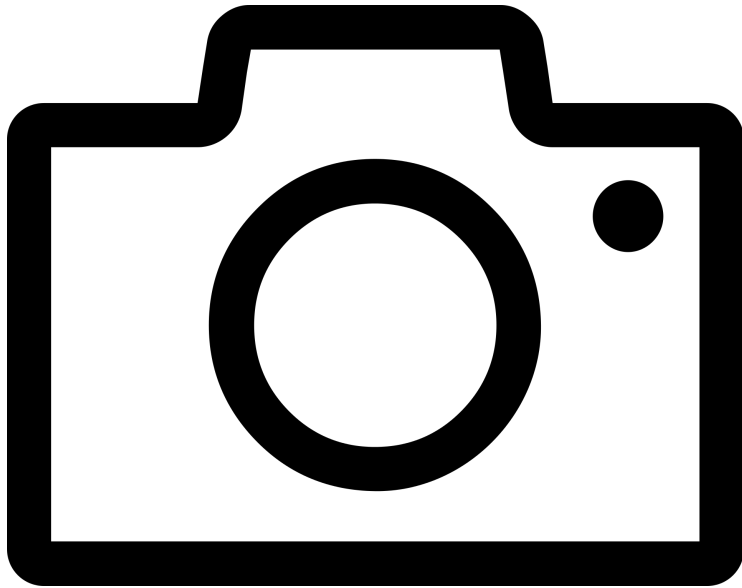


Karlsruhe Institute of Technology



Interdisciplinary Colloquium on Digitalisation of Research, 1 October 2026

Photos and recording



Pixabay, ste_phania



Why so serious? Generative AI (genAI) in Knowledge-Work from a Text-Workers' Perspective



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Outline

- How exactly is genAI changing the processes of scientific knowledge-work? And how is it changing the processing and assessment of evidence-based knowledge?
- Case study 'TA with Undermind.ai' project
- Conceptualization: division of epistemic labour in genAI-assisted text-work and its implications for scientific responsibilities, integrity, and accountability



Generative AI (genAI) in Knowledge-Work from a Text-Workers' Perspective

Why so serious?

Gondolf, Janine & Ackerl, Clemens et al.

@DiTraReColloquium, online, 01.10.2026

Agenda

1. How exactly is genAI CHALLENGING the processes of scientific knowledge-work?
2. How is it CHANGING the processing and assessment of evidence-based knowledge?
3. Insights from "Technology Assessment (TA) with Undermind.ai"
4. Conceptualization: division of epistemic labour in genAI-assisted text-work
5. Implications for scientific responsibilities, integrity, and accountability
6. Research participants and literature

Forschung & Lehre
ALLES WAS DIE WISSENSCHAFT BEWEGT

**Betreiben KI-Modelle selbst
Wissenschaft?**

Künstliche Intelligenz (KI) ist in der Wissenschaft längst nicht mehr bloßes Hilfsmittel. Sie organisiert inzwischen Forschungsprozesse eigenständig.

Von Christine Vallbracht / 20.05.2026

unesco
Deutsche
UNESCO-Kommission

Startseite | Künstliche Intelligenz | KI & Wissenschaft

KI & Wissenschaft

Der Einsatz von Künstlicher Intelligenz in Wissenschaft und Forschung

Startseite » IT/Tech » Der Umgang der Wissenschaft mit KI-Tools ist verantwortungslos

Spektrum.de

Der Umgang der Wissenschaft mit KI-Tools ist verantwortungslos

Generative KI wirkt kompetent und neutral. Sie unterstützt beim Peer-Review-Prozess und steigert die Produktivität. Doch ihr Einsatz höhlt zentrale Prinzipien der Wissenschaft aus, schreibt Jens Foell in einem Gastkommentar.

von Jens Foell

KRÄFTE BÜNDELN

**Zukunft europäischer Wissenschaft:
"Zusammen sind wir besser als KI"**

Verlässliche Förderungen garantieren wissenschaftliche Exzellenz. Daneben verschaffen besonders Kooperationen zwischen Forschenden einen bedeutenden Vorsprung

Isabell Rosenkranz
19. September 2026, 18:00

DERSTANDARD
Wissenschaft > Künstliche Intelligenz

PHYSIK-ZAUBERLEHRLING

Wie die KI beim Erfinden von Experimenten den Menschen übertrifft

Fachleute vor allem aus Österreich geben im Fachblatt "Nature" einen Überblick über den Stand innovativer KI-Anwendungen in der physikalischen Forschung

Klaus Taschwer
2. September 2026, 17:00

Einblick in das komplexe Herzstück des Gravitationswellendetektors LIGO, mit dem die von Albert Einstein vorhergesagten Phänomene fast ein Jahrhundert später detektiert werden konnten. KI-Modelle haben mittlerweile bessere LIGO-Experimentieranordnungen vorgeschlagen. Menschliche Fachleute taten sich aber schwer, diese zu verstehen.

Wenxuan Jia/MIT

DIE ZEIT

Z+ KI in der Wissenschaft

Wenn die KI so tut, als sei sie Einstein

Künstliche Intelligenz forscht, schreibt, begutachtet Paper und sorgt für Durchbrüche. Ist der menschliche Forscher bald überflüssig?

Von Rudi Novotny

The concept of a "fourfold deception" (J. Simon, 2026)

- ... regarding the ontological status of the interaction partner (human/AI)
- ... regarding the capabilities or performance of the AI
- ... arising from or through AI-generated content
- ... regarding the functionality of AI (e.g., through "function creep")

Consequence: Threat to established "practices of trust & of assessing trustworthiness"

What are the implications for science – especially in light of the crisis of trust in science and its institutions?

Core question: How exactly does AI change the processes of scientific knowledge production & knowledge processing?

Dimension 1 – Knowledge & scientific quality

- AI-based research: **problematic knowledge base** – including existing gaps & biases
- Prompts, source base and tool logic shape what becomes visible – **and what does not**
- **Disclosure** of use, scientific **standards** ≠ automatically scientific quality

Dimension 2 – Competencies & scientific practice(s)

- New **possibilities** vs. external pressures and **expectations** of speed and usability
- Specialized tools, narrowing to specific sources – **new gaps in sources and knowledge?**
- From AI/data/digital **literacy** to scientific **judgment competence**: understanding, verifying, contextualizing, ...

Core question: How exactly does AI change the processes of scientific knowledge production & knowledge processing?

Dimensions

- AI-based
- Prompt
- Disclosure

"Was AI used?"... increasingly the norm rather than an **exception requiring disclosure***...

Key questions therefore:

"How has the usage of AI influenced knowledge, quality and judgment **in the process?**",
respectively "How are **authority, traceability** and **public trust** established under conditions of AI-supported knowledge production?"

Dimensions

- New p
- Special
- From AI/data/digital **literacy** to scientific **judgment competence**: understanding, verifying, contextualizing, ...

Your AI co-researcher



Undermind finds the papers others miss, helping you start broad, go deep, and build real command of your field over time.



[Sign up free →](#)

Also works inside Claude, ChatGPT, and more →

Technology Assessment (TA) with Undermind.ai

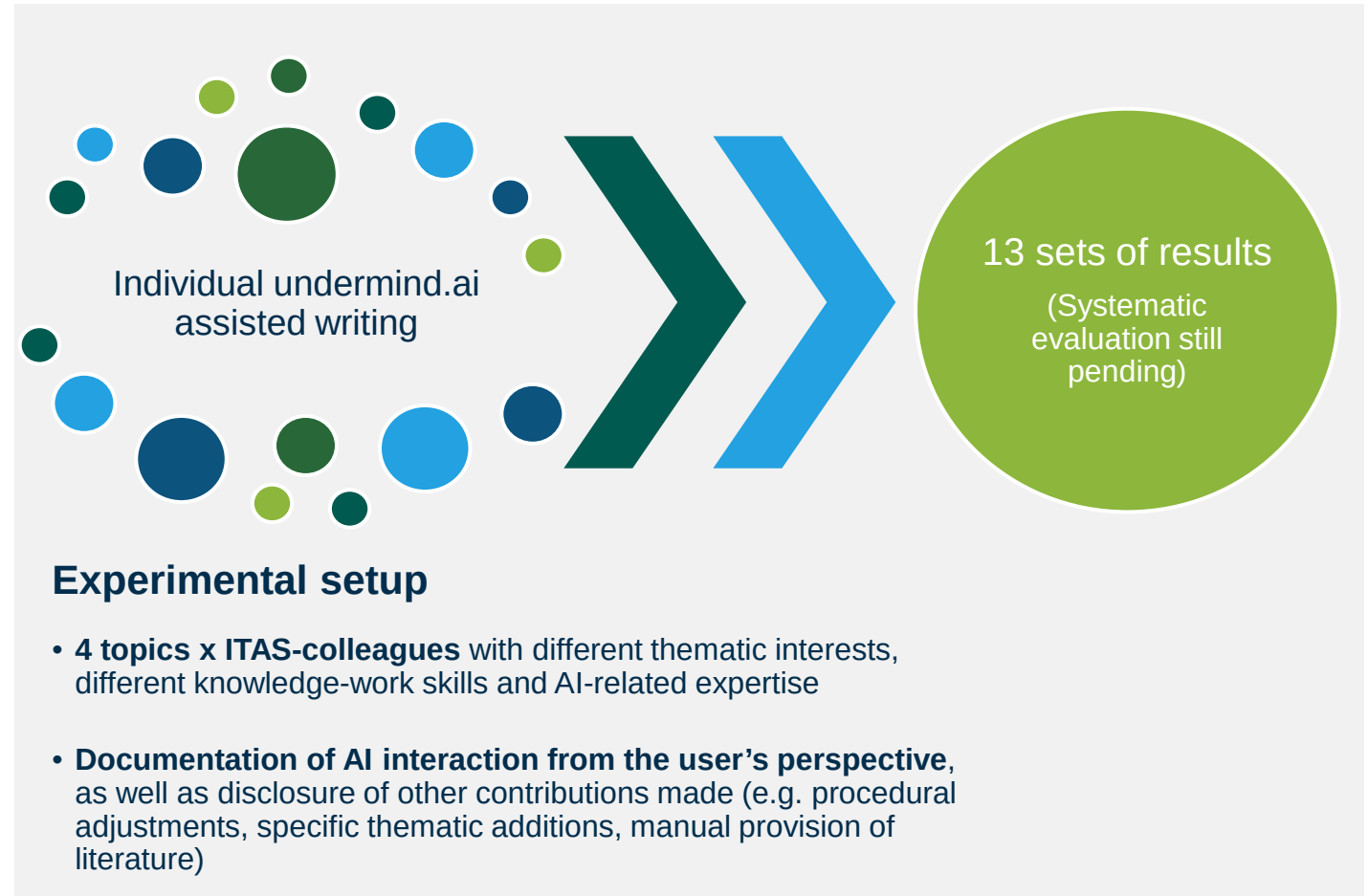
The project-design

Scope

- Literature review (max. 45.000 characters)
- Policy brief (max. 5 slides)
- Processing time: max. 8 hours

Procedure

1. User enters a topic prompt (chat)
2. Interactive generation of a search string
3. Automated literature search (deep search)
4. Guided creation of a literature review
5. Step-by-step generation of report sections and text formats
6. Option to adapt to journal requirements, including slides, cover letter...



The image displays three screenshots of the Weltraumschrott interface, illustrating its various components and features.

Left Screenshot: Library Sidebar

- Weltraumschrott (dropdown)
- + Add papers (dropdown)
- Library
- All Papers 243
- Starred
- Uploads
- Weltraumschrott Literatur
 - Compliance und U... 19
 - Governance und L... 21
 - Grundlagen und U... 14
 - Haftung und Recht... 21
 - Inaktive Objekte u... 13
 - Kernliteratur 16
 - Kollisionsrisiken un... 17
 - Mega-Konstellatio... 11
 - Ökonomie und Anr... 16
 - Querschnitt und S... 16
 - Wiedereintritt und ... 21
- Bericht Weltraumschrott

Middle Screenshot: Weltraumschrott globaler Status quo

- Search completed · 107 papers found · 18. Juni
- Export
- Generate Report
- Summary of results | Search goal | Timeline
- Der globale Status quo ist durch ein strukturell wachsendes Trümmerproblem in LEO geprägt: In kritischen Höhen wird die Umwelt zunehmend durch Kollisionen selbst getrieben, sodass selbst breite Mitigation allein die langfristige Stabilisierung wahrscheinlich nicht erreicht, während das internationale Regelwerk überwiegend freiwillig und umsetzungsabhängig bleibt (Kes78 Kes10 Lio08 Lew19 Mar21). [Show more](#)
- KEY MATCH YEAR CIT/YR TITLE
- Fre17 100% 2017 1.2 Status of the Space Environment: Current Level of Adherence to the Space Debris Mitigation Policy ☆
- S. Frey and S. Lemmens
- PDF Compliance und Umsetzung...

Right Screenshot: Chat Interface

- We are continuing fr...
- CHAT KNOWLEDGE
- 32 PDFs 243 abstracts 2 deep searches 5 files 2 past chats
- We are continuing from a previous chat. Please review what we were working on and give me a short summary before we continue.
- Thinking
- Remembering a conversation from 2 months ago
- Kurze Orientierung zum letzten Chat:

 - Wir haben zuerst auf Basis der vorhandenen Literatur den Hauptbericht **Bericht Weltraumschrott** erstellt und dann inhaltlich erweitert.
 - Danach haben wir eine gezielte Nachrecherche zu **Governance und Risiken** vorbereitet und als Deep Search **Weltraumschrott Governance und Risiken** angelegt.
 - Nach Abschluss dieser Suche haben wir die 169 Treffer in eine thematische Ordnerstruktur unter **Weltraumschrott Literatur** einsortiert.
 - Anschließend haben wir mehrere Formate erstellt bzw. überarbeitet:

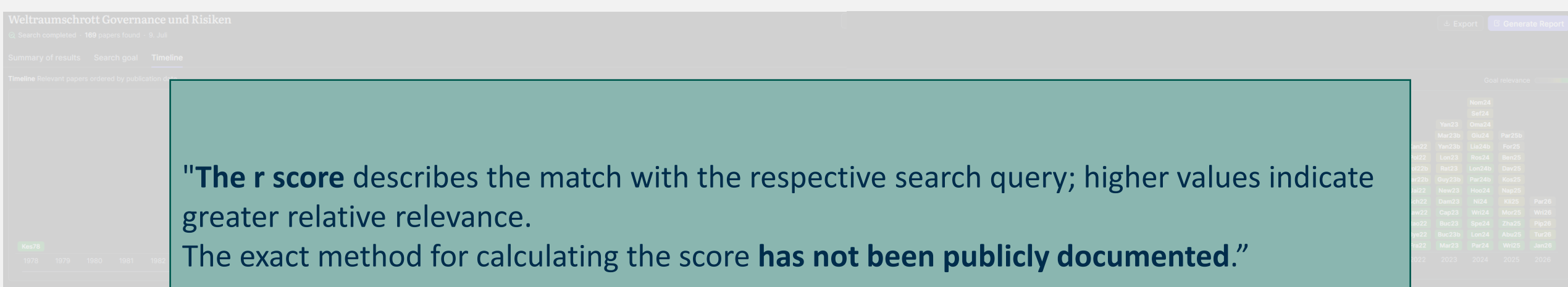
Your AI co-researcher

The classification system

The report generating area

The chat area and additional integration options

Ai-assisted scientometrics - Citation networks x internal ranking



Weltraumschrott Governance und Risiken

Search completed · 169 papers found · 9. Juli

Summary of results Search goal Timeline

Timeline Relevant papers ordered by publication date

Kes78

1978 1979 1980 1981 1982

Goal relevance

Nom24
SeF24
Yan23 Oms24 Par25b
Mar23b Bli24
an22 Yan23b Lia24b For23
n22 Lon23 Ros24 Ben25
p22b Rai23 Lon24b Dav25
er22b Guy23b Par24b Kos25
ai22 New23 Hoo24 Nag25
ch22 Dam23 NQ24 KK25 Par26
hw22 Cap23 Wn24 Mor25 Wn26
an22 Buc23 Spe24 Zha25 Pp26
ye22 Buc23b Lon24 Abu25 Tur26
ra22 Mar23 Par24 Wn25 Jan26
022 2023 2024 2025 2026

"The r score describes the match with the respective search query; higher values indicate greater relative relevance.
The exact method for calculating the score **has not been publicly documented.**"

(Undermind.ai)

Welcome to the PRISMA website

PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) is a guideline designed to improve the reporting of

Scientometrics: How does the AI assistant access the academic text (and which part of it)?

Access to abstracts and metadata (open science)

Crossref: DOI metadata, bibliographic details and, for many publishers, abstracts via an official API

OpenAlex: open research graph containing metadata, citation relationships and abstracts

Semantic Scholar: metadata, abstracts, - free, AI-driven search and discovery tools, and open resources for the global research community.

PubMed, DataCite...

Access to full texts (open access)

Open-Access-Repositorien arXiv, Zenodo, HAL, SSRN, OSF, institutional repositories

OpenAlex & Semantic Scholar refer to numerous freely available PDFs and open-access versions.

researchgate, Unpaywall

What is happening in the world of academic publishing?

Official APIs – No scraping or similar is required

Institutional license agreements – AI-assistants uses content that the user can legally access

BUT what if a text is not available online but is cited in the corpus?

Undermind.ai does not 'know' any books or standard works specific to the field. It 'asks' for full texts where these texts are not accessible but appear to be 'relevant' via citation networks

Scientometrics: How does the AI assistant access the academic text (and which part of it)?

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PubMed, DataCite...

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Undermind

Radically better research and discovery

What is happening in the world of academic publishing?

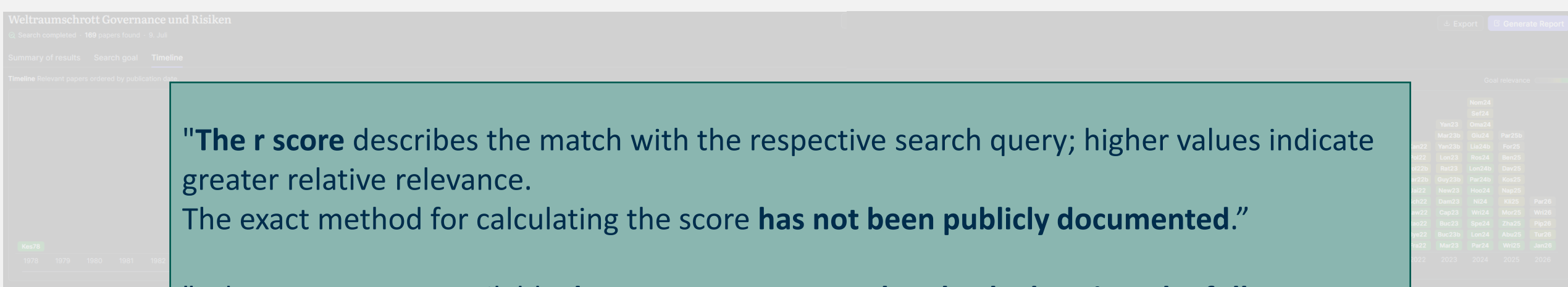
Official APIs – No scraping or similar is required

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& make it available to the user!

Undermind.ai does not 'know' any books or standard works specific to the field. It 'asks' for full texts where these texts are not accessible but appear to be 'relevant' via citation networks

Ai-assisted scientometrics - Citation networks x internal ranking



The screenshot shows the PRISMA website interface. At the top, the title 'Weltraumschrott Governance und Risiken' is displayed. Below it, a search bar indicates 'Search completed · 169 papers found · 9. Juli'. The interface includes tabs for 'Summary of results', 'Search goal', and 'Timeline'. The 'Timeline' tab is active, showing a timeline of relevant papers ordered by publication date. A large teal box is overlaid on the screenshot, containing text about the 'r score' and the PRISMA website.

"The r score describes the match with the respective search query; higher values indicate greater relative relevance.
The exact method for calculating the score **has not been publicly documented.**"

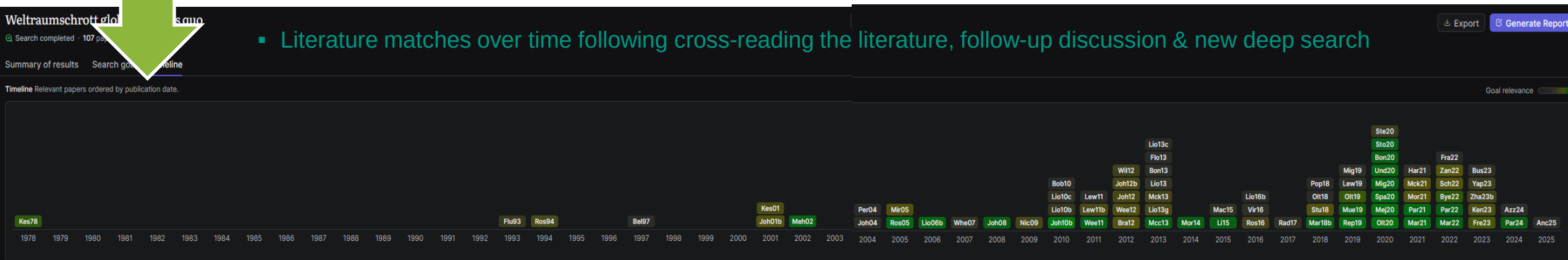
"Where PDFs were available, key statements were also checked against the full text. For papers without a PDF, I relied on abstracts and metadata."
(Undermind.ai)

Welcome to the PRISMA website

PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) is a guideline designed to improve the reporting of

Ai-assisted scientometrics - Citation networks x internal ranking

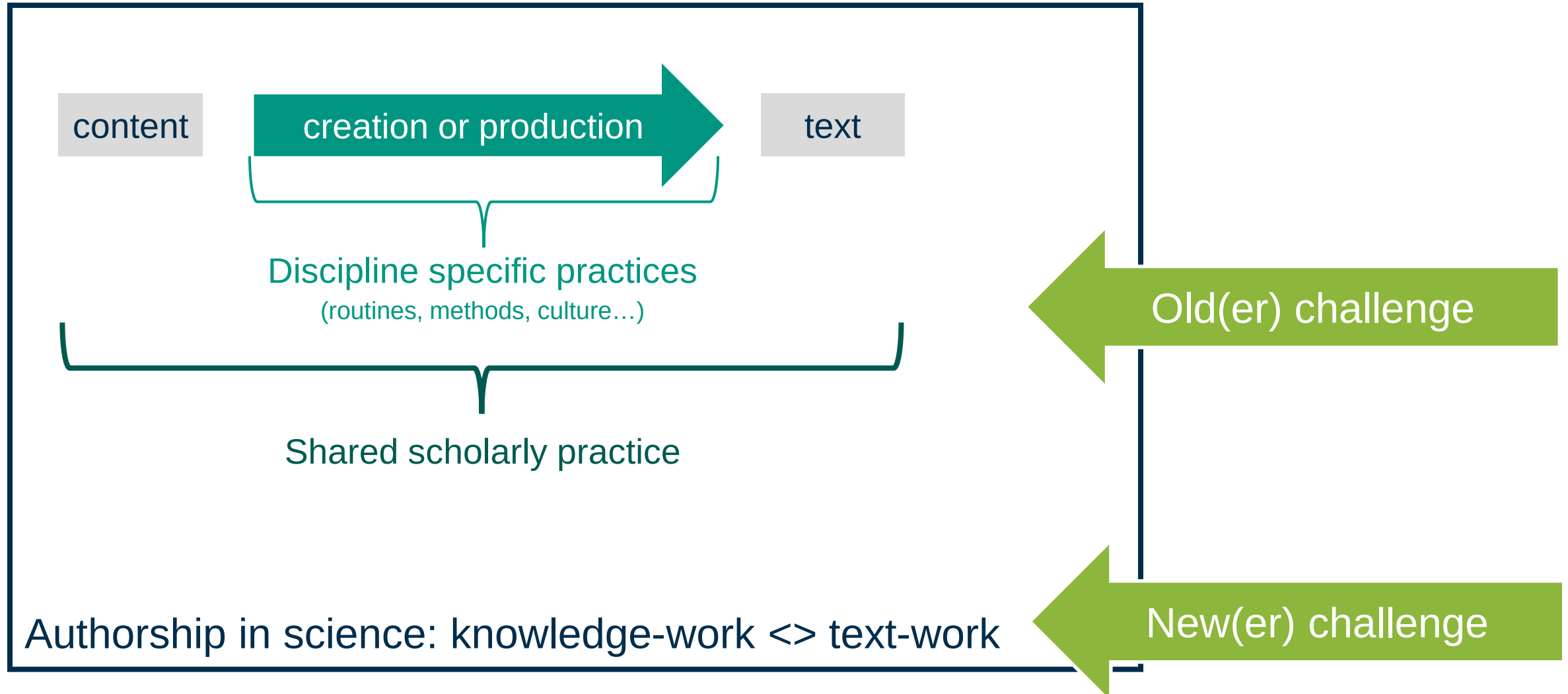
text-work



~~text-work~~
knowledge-work

Attribution and recognition of authorship

With genAI?



Old(er) challenge: Dicipinary practices

The case of distributed/fragmented and hyper-authorship

PRL 114, 191803 (2015)

 Selected for a **Viewpoint** in *Physics*
PHYSICAL REVIEW LETTERS

week ending
15 MAY 2015



Combined Measurement of the Higgs Boson Mass in pp Collisions at $\sqrt{s} = 7$ and 8 TeV with the ATLAS and CMS Experiments

G. Aad *et al.*^{*}

(ATLAS Collaboration)[†]

(CMS Collaboration)[‡]

(Received 25 March 2015; published 14 May 2015)

A measurement of the Higgs boson mass is presented based on the combined data samples of the ATLAS and CMS experiments at the CERN LHC in the $H \rightarrow \gamma\gamma$ and $H \rightarrow ZZ \rightarrow 4\ell$ decay channels. The results are obtained from a simultaneous fit to the reconstructed invariant mass peaks in the two channels and for the two experiments. The measured masses from the individual channels and the two experiments are found to be consistent among themselves. The combined measured mass of the Higgs boson is $m_H = 125.09 \pm 0.21$ (stat) ± 0.11 (syst) GeV.

DOI: [10.1103/PhysRevLett.114.191803](https://doi.org/10.1103/PhysRevLett.114.191803)

33 pages Paper

(of which are 24 pages of
authors names and
affiliations)

5154 authors

x

9 pages text

authorship = responsibility, authorization, authority
with regards to text and its content

Our editorial policies (A-Z)

Act with integrity

We believe that integrity is fundamental to everything we do. We expect everyone engaging with Springer Nature—our staff, authors, and

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We believe that artificial intelligence (AI) can support research and publishing when used responsibly, transparently, and with appropriate human oversight. AI can improve efficiency and assist with a range of activities across the research and publishing lifecycle, but it must not replace scholarly judgement, accountability, or editorial decision-making.

We achieve this by applying a risk-assessment framework across the research and publishing lifecycle. Specific guidance is available for [AI use in manuscript preparation](#), [AI use in research practice](#), [AI use in peer review](#), and [editor AI use and assessment guidance](#). Our editorial policies are guided by four core expectations: human accountability cannot be transferred to AI systems; AI may support but not replace scholarly judgement; transparency about AI use builds trust and confidence; and confidentiality and data protection must be maintained when using AI tools.

We recognise that AI technologies are evolving rapidly and will continue to review and update our policies to reflect developments in technology, regulation, and community expectations.

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“Our editorial policies are guided by **four core expectations**:

1. human accountability cannot be transferred to AI systems;
2. AI may support but not replace scholarly judgement;
3. transparency about AI use builds trust and confidence; and
4. confidentiality and data protection must be maintained when using AI tools.”

<https://www.springernature.com/gp/policies/editorial-policies>

New(er) challenge: Division of epistemic labour ... from sole author to curator?

Researchers use LLMs for information seeking, summarization, editing, ideation, and literature exploration, while remaining **more cautious in applications regarding data processing** (Andersen et al., 2025; Liao et al., 2024)

Discovery, ideation	Reading & synthesis	Interpretation	Writing	Decision
<i>Human role</i>	<i>Human role</i>	<i>Human role</i>	<i>Human role</i>	<i>Human role</i>
Relevance judge	Verifier	Context keeper	Accountable author	Owner of judgment
<i>Role of genAI?</i>	<i>Role of genAI?</i>	<i>Role of genAI?</i>	<i>Role of genAI?</i>	<i>Role of genAI?</i>

Variations in **attitudes** towards and **access to using genAI** for research are discussed as potentially **producing (new forms of) inequalities in science...**



Necessity of "institutionally grounded democratic **deliberations** at different institutional settings" (Jeon et al., 2025)

Research participants „TA with Undermind.ai“

Speakers

Janine Gondolf & Clemens Ackerl

janine.gondolf@kit.edu & clemens.ackerl@kit.edu

Project team @ITAS

Clemens Ackerl, Christopher Coenen, Paulina Dobroc,
Torsten Fleischer, Felix Gnisa, Janine Gondolf, Reinhard Heil,
Dirk Hommrich, Camille Landesvatter, Johanna Mehler, Linda Nierling,
Maike Puhe, Ashley Razo, Jens Schippl, Paul Leonard Witte

Literature

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Discussion Session

Next Colloquium

Thursday **5 November**, 11:00, Zoom

Speaker TBA

Info on the **website**:

<https://www.ditrare.de/en/ditrare-colloquium>



Save the date!

DiTraRe Interdisciplinary Symposium 2: 6-7 April 2027



Save the date for our second Interdisciplinary Symposium on Digitalisation of Research, which will take place in Karlsruhe at KIT from 6 to 7 April 2027!

Thank you for joining!

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