

Forschungsdaten

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Outline

Relevanz und Besonderheiten von Forschungsdaten – Geowissenschaften,
Hochenergiephysik

Akteure

- Wissenschaft, Bibliotheken, Rechenzentren

Rahmenbedingungen für die Publikation

Umsetzung

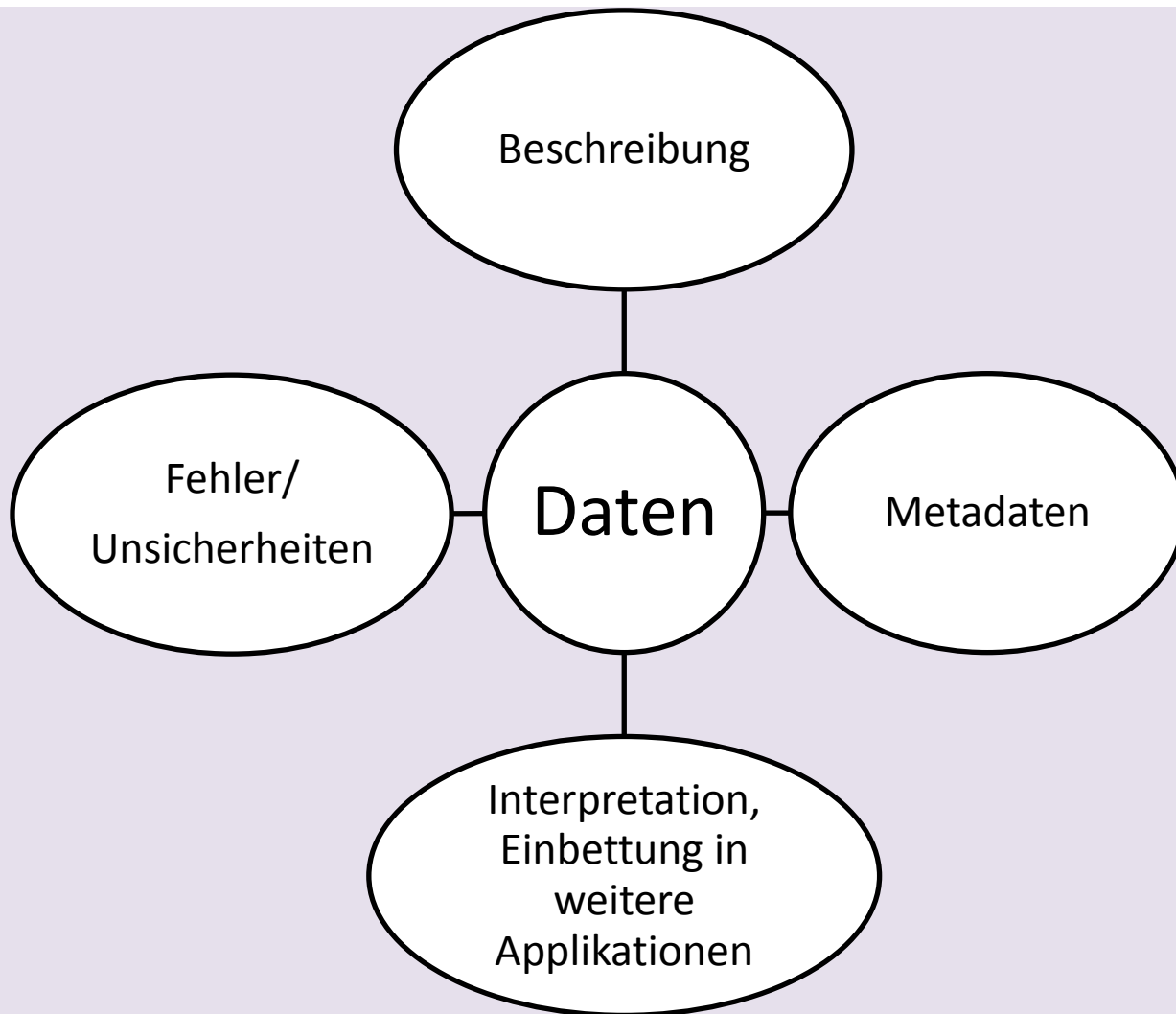
- Rahmenbedingungen
- Modelle – “standalone”, textzentriert, datenzentriert

Rolle der Wissenschaft, Contentakquise

Kleine Umfrage...

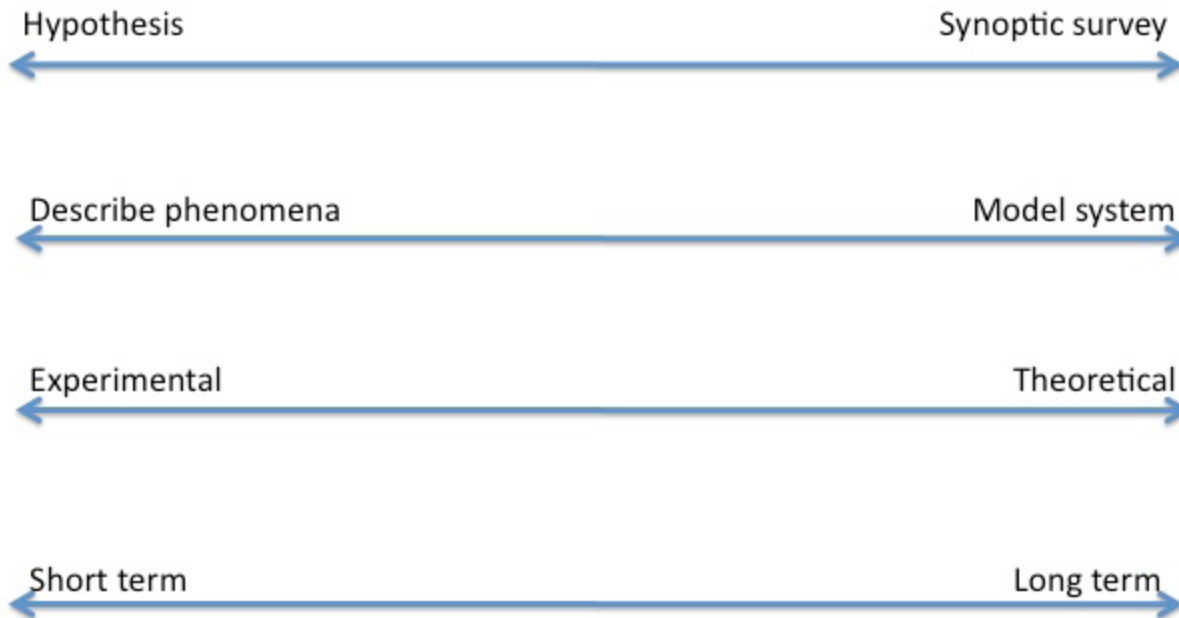
- Geisteswissenschaftlicher oder naturwissenschaftlicher Hintergrund?
- Wer beteiligt sich bereits an Forschungsdatenprojekten?
- Wer ist bereits “beteiligt” an einem Forschungsdatenrepositorium?
- Ist an diesen Instituten bereits ein Repositorium fuer andere wissenschaftliche Objekte, wie z.B. Texte, vorhanden gewesen?

Forschungsdaten - simplified



Forschungsdaten “divers”

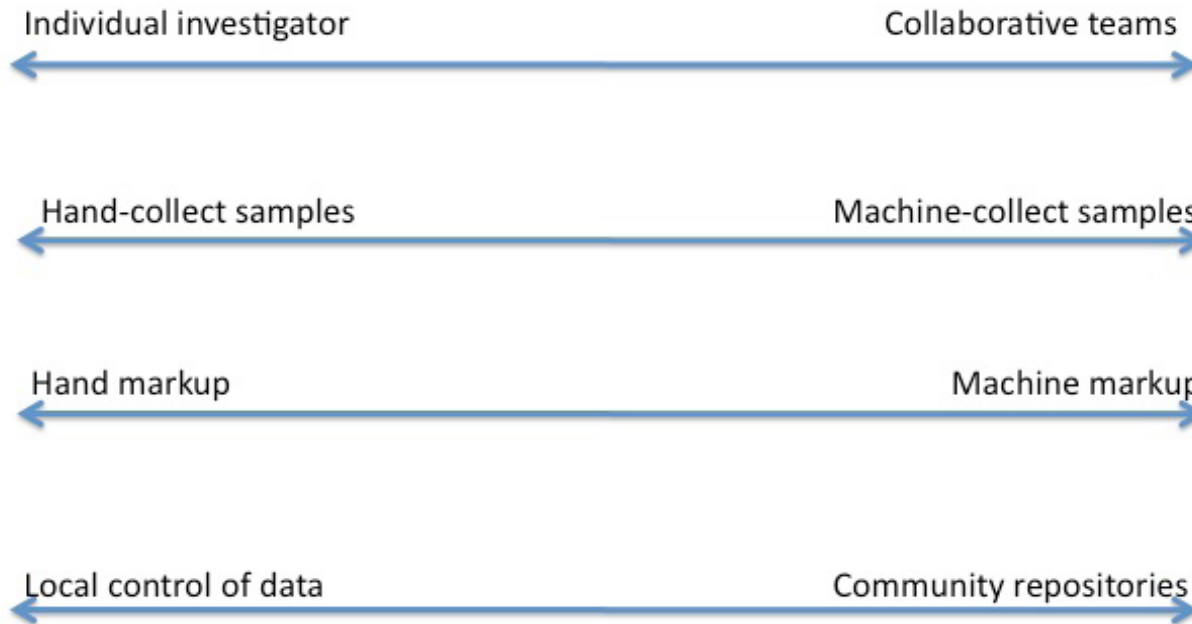
Some purposes of data-driven research



Borgman, C.L. 2010

Forschungsdaten “divers”

Some methods of data-driven research



Borgman, C.L. 2010

Warum interessieren Forschungsdaten uns?

- **Nachnutzbarkeit, Integrität und Nachvollziehbarkeit**
 - Oftmals einmalige Daten
 - Weitere Interpretation der Daten
 - Keine kostenintensiven Messwiederholungen
 - Unabhängige Qualitätskontrolle
- **Forschungsdaten für Lehre und Forschung**
 - In der Schule und im Studium
 - In der Weiterbildung, z.B. von technischem Personal

Wer agiert?

Auf disziplinübergreifender Ebene

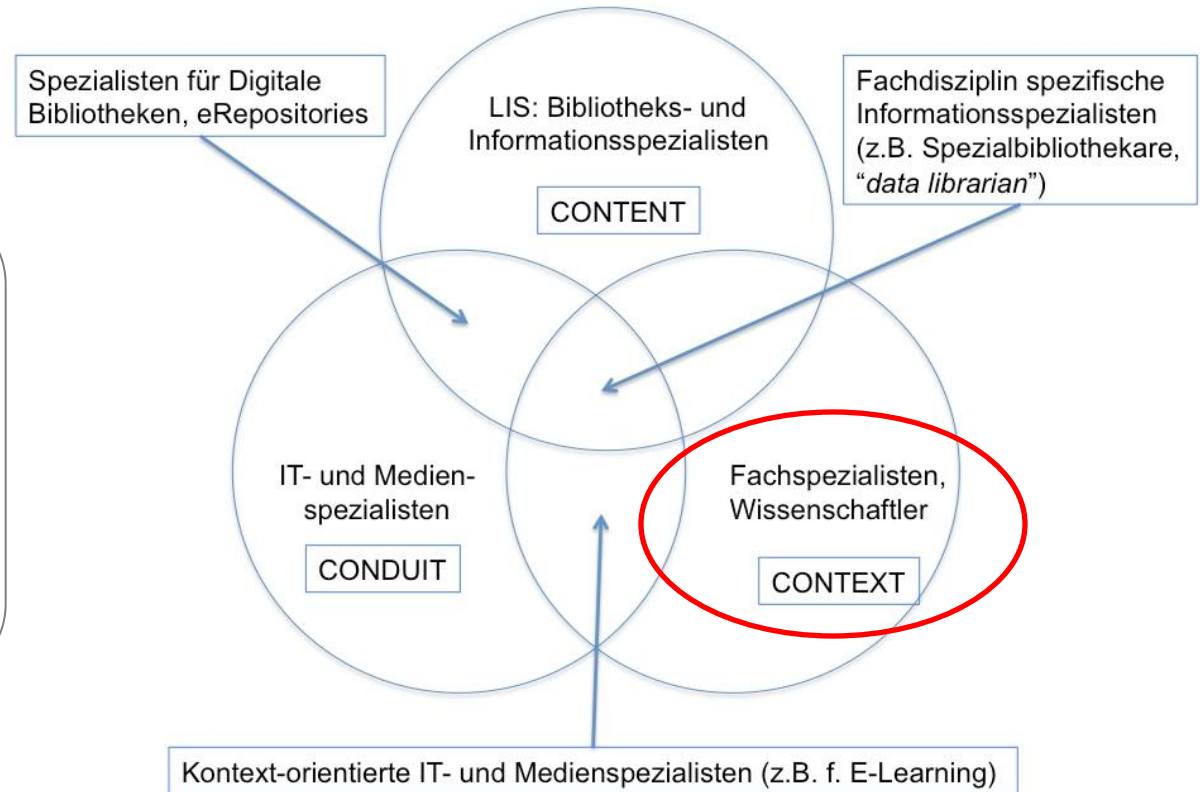
- Forschungsförderer
- Infrastrukturbetreiber: Rechenzentren, Bibliotheken
- Wissenschaftsadministration
- ...

Auf disziplinspezifischer Ebene

- Wissenschaft: Gesellschaften, Arbeitsgruppen, Individuen
- Infrastrukturbetreiber: Rechenzentren, Bibliotheken
- ...

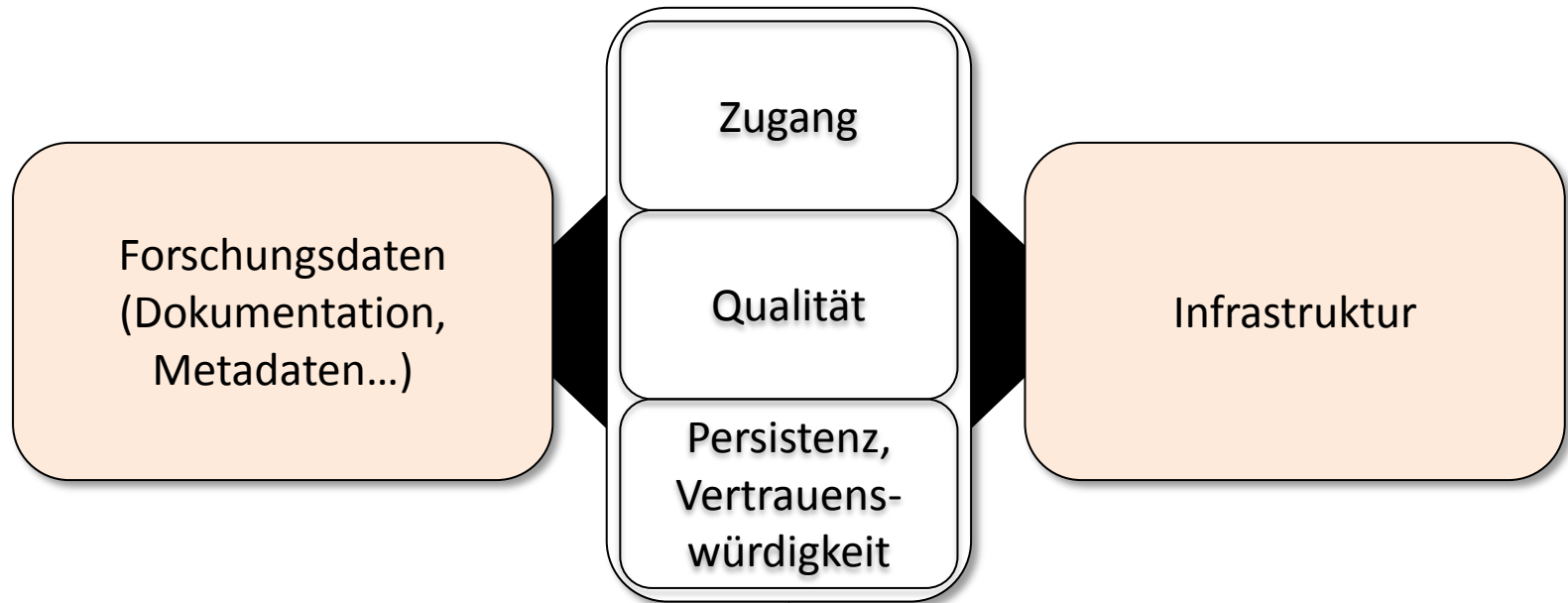
Akteure

Hands-on:
Bibliothek
Rechenzentrum
Wissenschaft



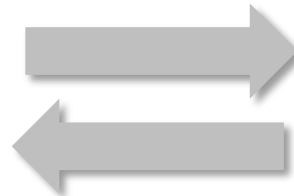
Voraussetzung zur Publikation

Zusammenarbeit von Wissenschaft und Dienstleistern



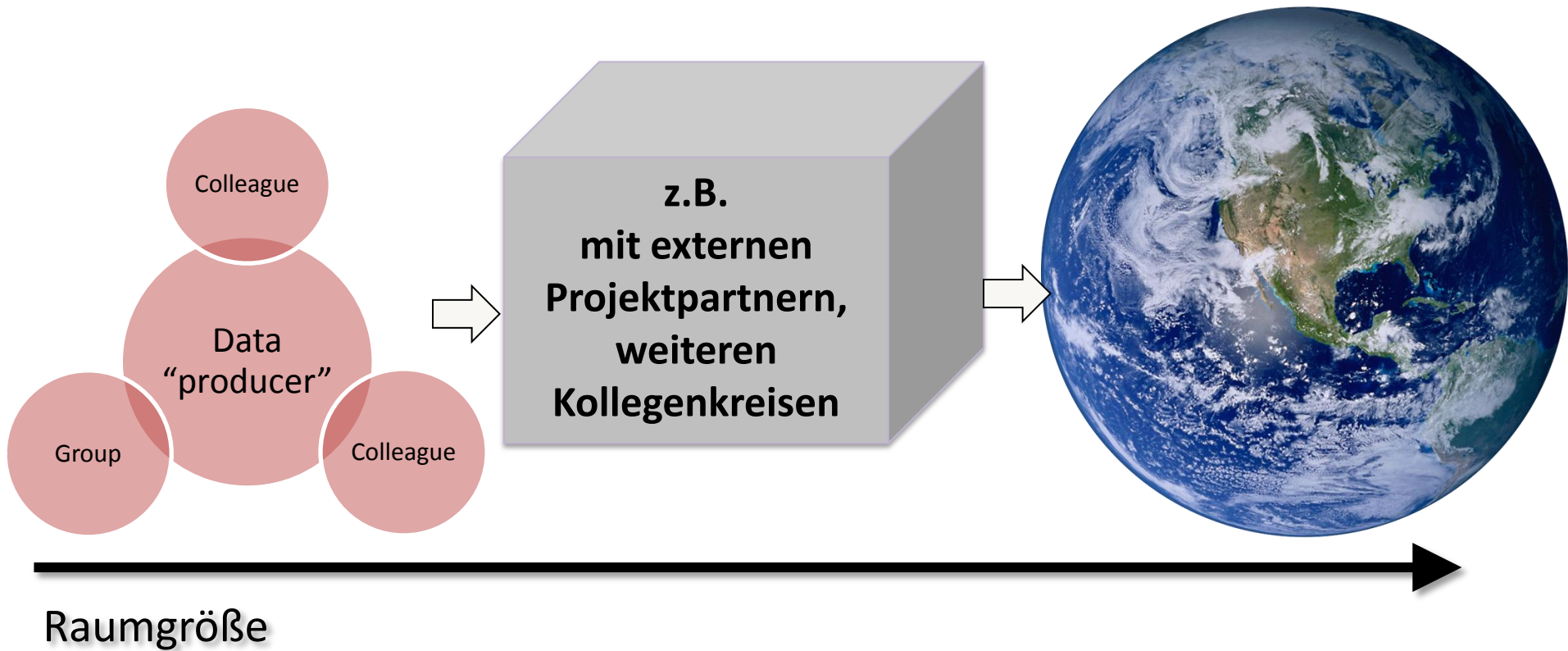
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Wissenschaft:
Datenbereitstellung,
Dokumentation,
Qualitätskontrolle

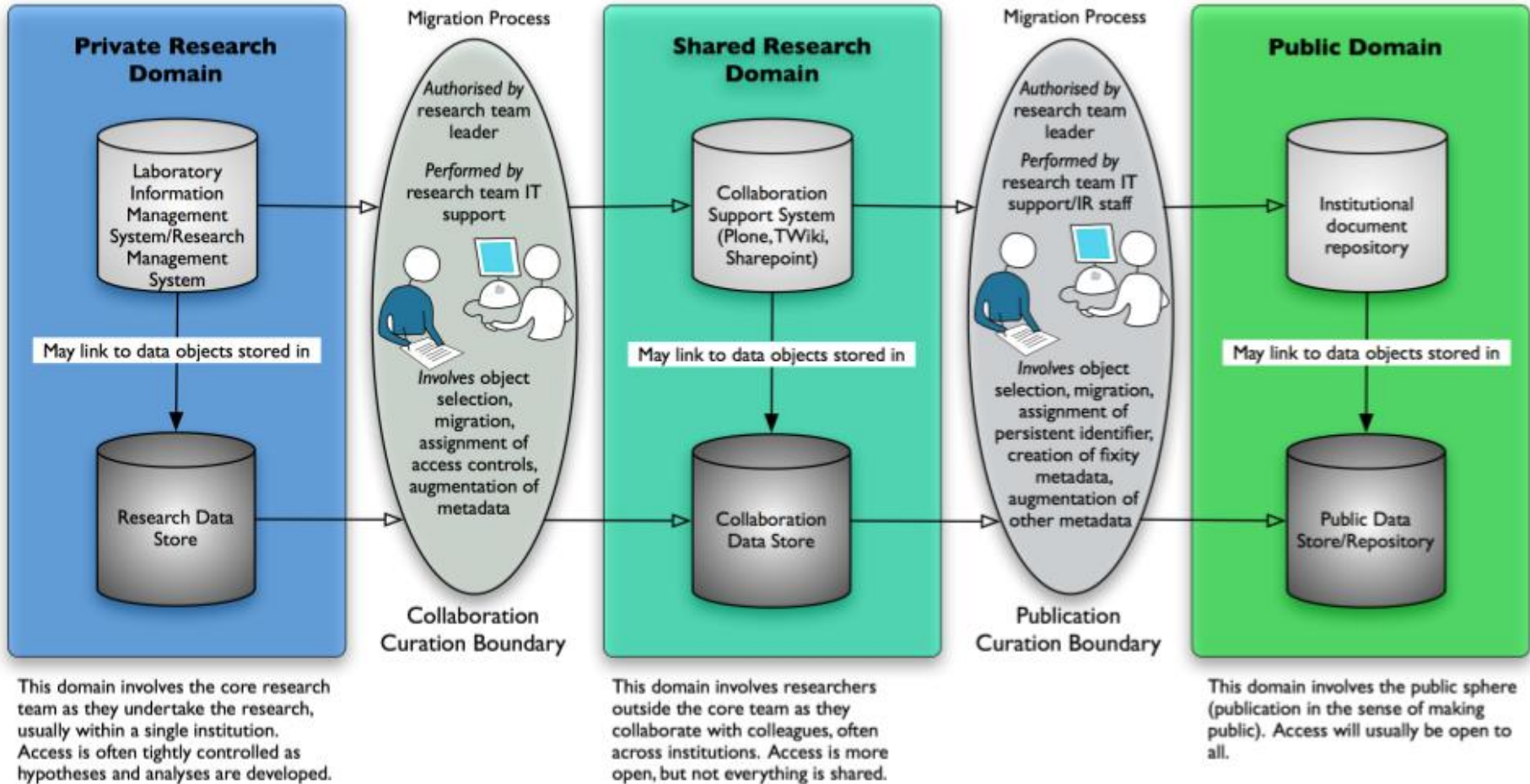


Infrastruktureinrichtungen:
Infrastrukturangebote,
Standardisierung,
Vertrauenswürdigkeit

Raum der Datenpublikation



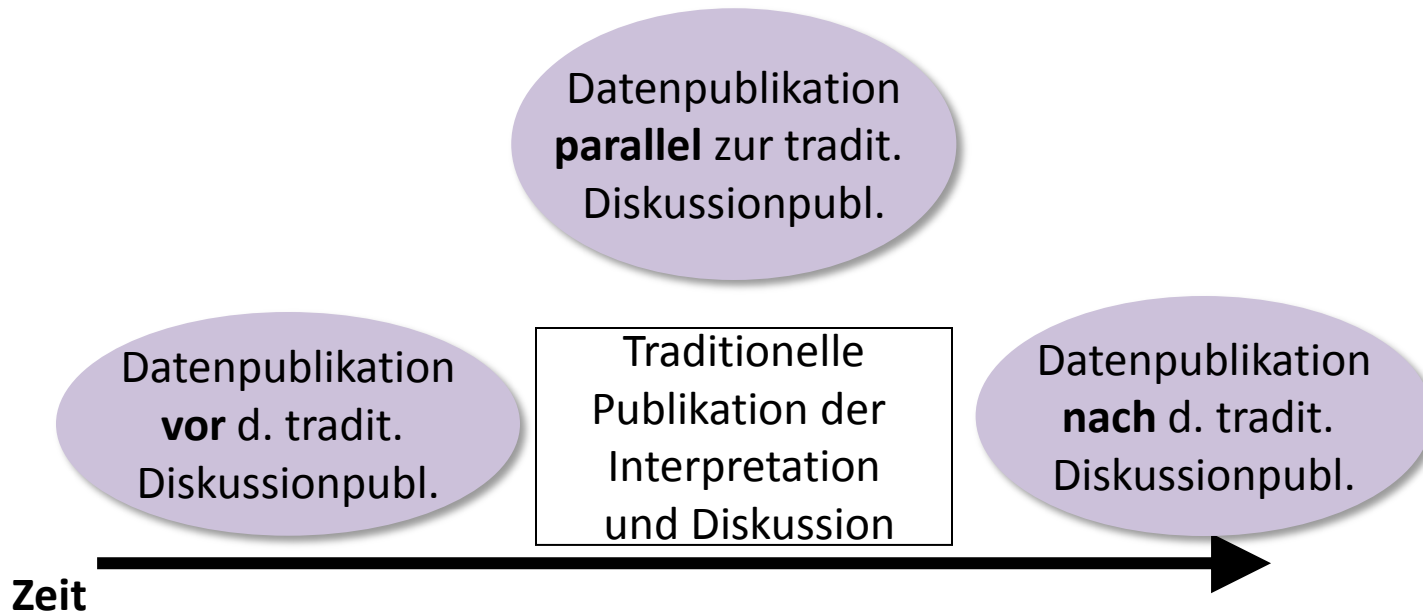
Raum der Datenpublikation



Version 1.4, <http://andrew.treloar.net/>, 07Dec07

Zeitpunkt der Datenpublikation

- Direkt nach Datenproduktion/Vor der Interpretation (Pre-)
- Mit der Analyse/Interpretation (with publication)
- Nach der Publikation der Interpretation (Post-)



Was hindert Wissenschaftler an der Publikation von Forschungsdaten

- Rechtliche Vorgaben
- Fehlende Anreize für mehr Aufwand
 - Z.B. Wertung als Publikation, in RAE
- Angst vor “Misuse” and “Misinterpretation”
- Fehlende “eingängige” Zitiermöglichkeiten für Forschungsdaten
- Tlw. fehlende (vertrauenswürdige) Infrastrukturen für die gewünschte Publikationsform
- Angst vor fehlender Kontrolle über die Forschungsdaten
- Unwissenheit: Standardisierung, Workflows etc...
- Fehlende Kooperationen zwischen Akteuren
- Fehlendes “Forum” zur Bereitstellung der Forschungsdaten

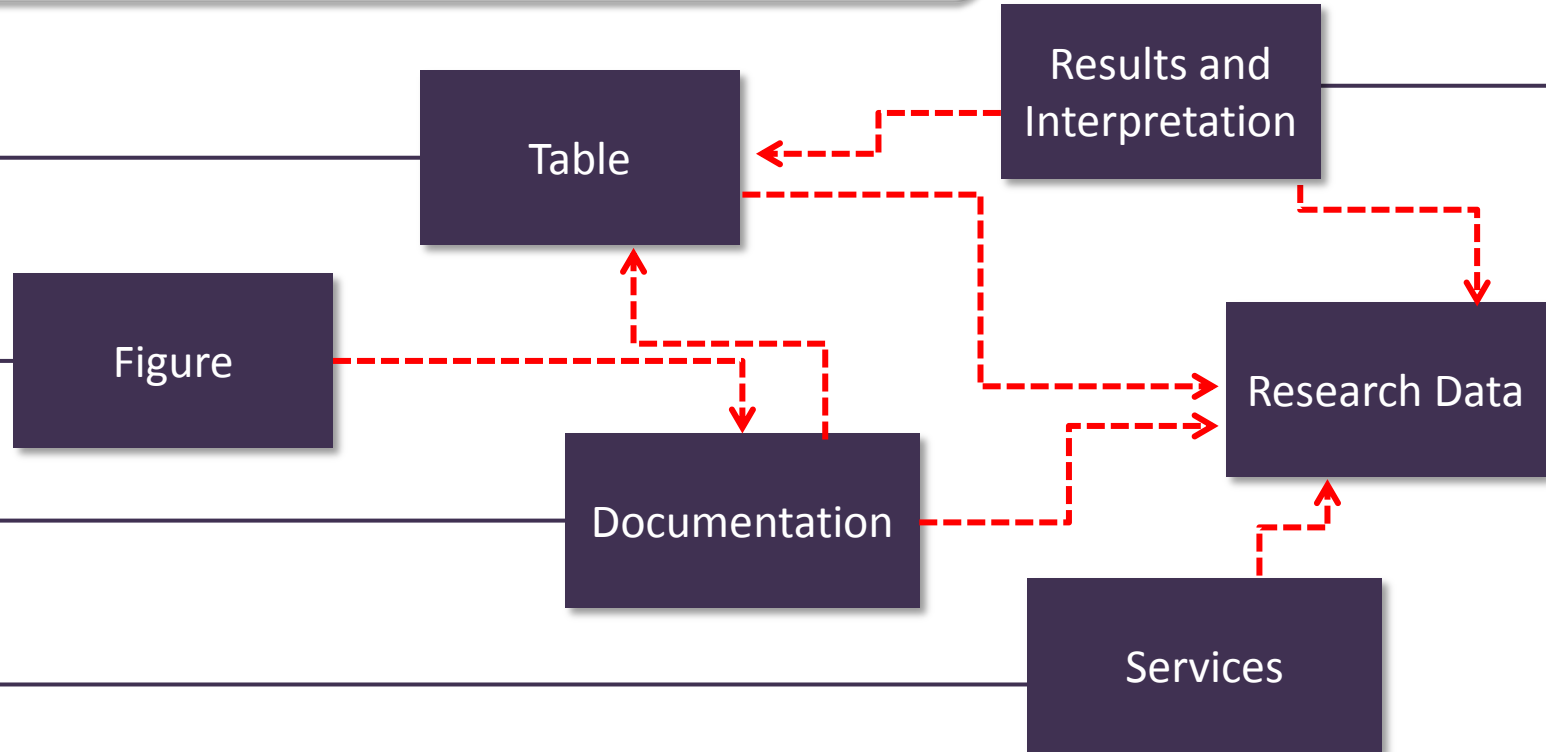
Modelle zur Bereitstellung von Forschungsdaten

- objektzentriertes
- textzentriertes **Modell**
- datenzentriertes

Publikationsmodell

– objektzentriert (“stand alone” & “mash up”)

- verteilte Verantwortung
- Persistenz der Komponenten und Modelle



DataCite

DataCite: 12 members from 9 countries, with individual regional member institutions

- establish easier access to scientific research data on the Internet
- increase acceptance of research data as legitimate, citable contributions to the scientific record
- support data archiving that will permit results to be verified and re-purposed for future study.
- TIB, Hanover

Objects:

- Classical dataset
- Models/simulations
- Maps
- Videos
- Slides
- ...



“Eigenständige” Abbildungen

• PlosOne

prior studies. Our results provide novel insights into AML pathogenesis with potential diagnostic, prognostic, and therapeutic implications.



Figure 1. Tag-based classification method flowchart.

doi:10.1371/journal.pone.0009466.g001

RESULTS [Top](#)

Categorization of Differentially Expressed Genes

A total of 15,809 expression features were available from 25 studies, utilizing 10 different microarray platforms, and comprising a total of 2,744 patient samples ([Table 1](#)). Of the 15,809 expression features, 7,416 were classified as up-regulated, 6,419 were classified as down-regulated, and 1,974 were not classified with respect to an expression direction. A total of 14,385 (91%) expression features could be mapped to a gene symbol in the UCSC hg18 database, which comprised a total of 4,918 genes.

Table 1. Acute Myelogenous Leukemia expression profiling studies included in analysis.

doi:10.1371/journal.pone.0009466.t001

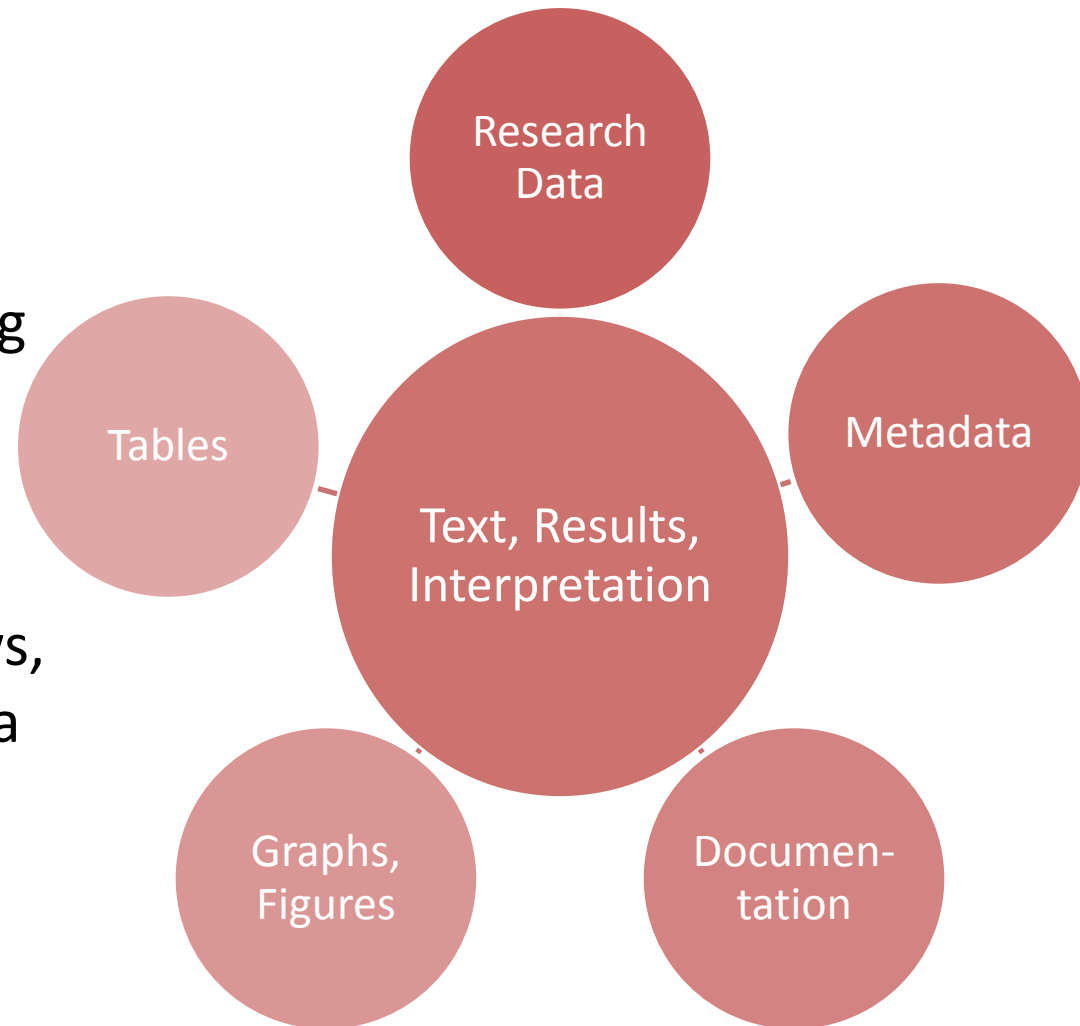
Standardized Annotation of Gene Expression Features

We annotated each expression feature with standardized identification tags and comparison

Publikationsmodell - textzentriert

- „traditional“ supplements
- e.g. Enhanced Publications (DRIVER II, SURF):

“publication of articles along with supplementary data, including the underlying research data, visualisations, public reviews, simulations, and multimedia files.”



Supplement (files, links...)

SUPPORTING INFORMATION [Top](#)

[Supplementary Materials S1.](#)

Supporting Information Text

(0.15 MB DOC)

[Supplementary Materials S2.](#)

MATLAB Data Analysis Scripts

(2.42 MB ZIP)

[Figure S1.](#)

Thioglucose-passivated nanocrystal absorbance spectra.

(1.26 MB EPS)

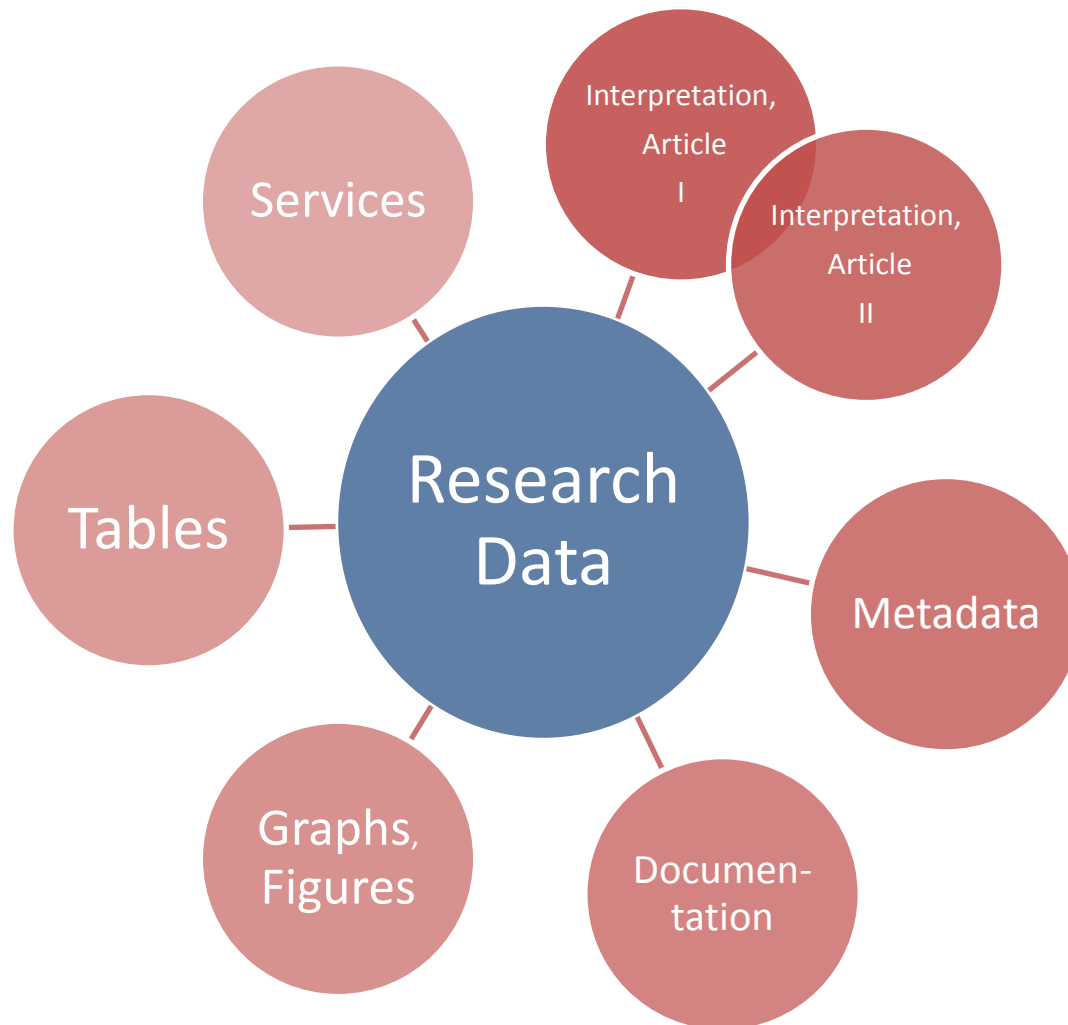
[Figure S2.](#)

Purification of nanocrystal labeled DNA.

(1.91 MB EPS)

Quelle: PlosOne

Publikationsmodell - datenzentriert



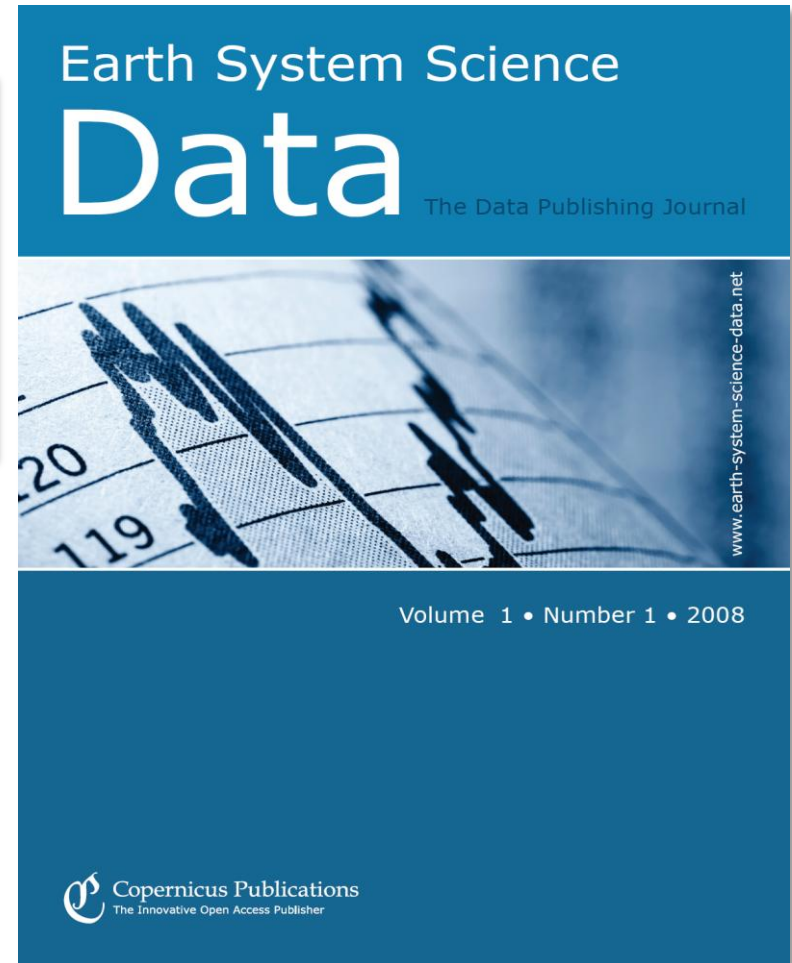
Datenzentriertes Model - Data Journal

Eigenständige Datenpublikation
inkl. Dokumentation –
qualitätsgesichert durch Peer
Review und Open Access

Anreiz durch Extra-Publikation

Verlag

Copernicus Publications – OA
Publisher



Data Journal – Repository Reference

Abstract

On 22 May 1985 the first balloon-borne ozonesonde was successfully launched by the staff of Georg-Forster-Station (70°46' S, 11°41' E). The following weekly ozone soundings mark the beginning of the continuous investigation of Germany to study the vertical ozone distribution in the southern hemisphere.

In 1985 these ozone soundings have been the only record showing the change of vertical ozone distribution in the southern polar stratosphere in September and October. The regular ozone soundings from 1985 until 1992 are a valuable reference data set since the chemical ozone loss became a significant feature in the southern polar stratosphere.

The balloon-borne soundings were performed at the upper air sounding facility of the neighbouring station Novolazarevskaya, just 2 km apart from Georg-Forster-Station. Till 1992, ozone soundings were taken without interruption. Afterwards, the ozone sounding program was moved to Neumayer-Station (70°39' S, 8°15' W) 750 km further west.

Data coverage and parameter measured

Repository-Reference: doi:10.1594/PANGAEA.547983
Available at: <http://dx.doi.org/10.1594/PANGAEA.547983>

Coverage: East: 11.8888, South: 70.7100
Location Name: Georg-Forster-Station, Antarctica
Date/Time Start: 1985-05-22T05:19:00
Date/Time End: 1992-01-29T01:19:00

Pangaea!

ESSDD
1, 1–13, 2008

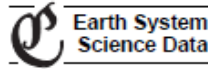
**Antarctic
ozonesonde profiles**
G. König-Langlo and
H. Gernandt

Title Page
Abstract Instruments
Data Provenance & Structure
Tables Figures
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◀ ▶
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Printer-friendly Version
Interactive Discussion



Data Journal – Akzeptierter Artikel

Earth Syst. Sci. Data, 1, 1–5, 2009
www.earth-syst-sci-data.net/1/1/2009/
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the Creative Commons Attribution 3.0 License.



Compilation of ozonesonde profiles from the Antarctic Georg-Forster-Station from 1985 to 1992

G. König-Langlo and H. Gernandt

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Received: 29 July 2008 – Published in Earth Syst. Sci. Data Discuss.: 22 September 2008

Revised: 1 December 2008 – Accepted: 23 December 2008 – Published: 12 January 2009

Abstract. On 22 May 1985 the first balloon-borne ozonesonde was successfully launched by the staff of Georg-Forster-Station (70°46' S, 11°41' E). The subsequent weekly ozone soundings mark the beginning of a continuous investigation of the vertical ozone distribution in the southern hemisphere by Germany.

The measurements began the year the ozone hole was discovered. They significantly contribute to other measurements made prior to and following 1985 at other stations. The regular ozone soundings from 1985 until 1992 are a valuable reference data set since the chemical ozone loss became a significant feature in the southern polar stratosphere.

The balloon-borne soundings were performed at the upper air sounding facility of the neighbouring station Novolazarevskaya, just 2 km from Georg-Forster-Station. Until 1992, ozone soundings were taken without interruption. Thereafter, the ozone sounding program was moved to Neumayer-Station (70°39' S, 8°15' W) 750 km further west.

Data coverage and parameter measured

Repository-Reference: doi:10.1594/PANGAEA.547983
Coverage: East: 11.8300; South: -70.7700;
Location Name: Georg-Forster-Station, Antarctica
Date/Time Start: 1985-05-22T05:19:00
Date/Time End: 1992-01-29T01:19:00

Parameter	Short Name	Unit	Comment
Altitude	Altitude	m	height above mean sea level
Date/Time	Date/Time		universal time code (UTC)
Longitude	Longitude		at launching point
Latitude	Latitude		at launching point
Ozone, partial pressure	O ₃	mPa	
Pressure, at given altitude	PPFP	hPa	
Temperature, air	TTT	degC	
Wind direction	dd	deg	
Wind speed	ff	m/sec	

1 Introduction

The first permanently operated German research base – later named ~~Georg-Forster-Station~~ – was established in 1976 in the Schirmacher Oasis at 70°46' S, 11°41' E. The station was permanently used and operated as an annex to the Russian station Novolazarevskaya until 1987, and then as a German Antarctic station named after the German natural scientists, author and revolutionary Georg Forster (1754–1794) until 1993.

Long-term studies of magnetospheric-ionospheric processes, geophysical investigations, biological studies and sea ice observations using satellite imaging were performed.

The station became known to the international scientific community when the vertical extent of the “ozone hole” in the southern polar stratosphere was firstly recorded by regular balloon-borne ozone observations in 1985 (Gernandt, 1987a, b).

The ozone sounding programme was a major contribution of the Meteorological Service to the Antarctic research of the German Democratic Republic (GDR). The station was established as a long-term ozone-sonde observatory in cooperation with the Russian Arctic and Antarctic Research Institute (AARI) and the Aerological Observatory Lindenberg (AOL) in order to study the climatology of the ozone layer in

Datensatz auf bekannte Art und Weise
zitierbar

Datensatz nachnutzbar:

Daten qualitätsgesichert und
online abrufbar

Publikation des Datensatzes
als eigenständiger Artikel

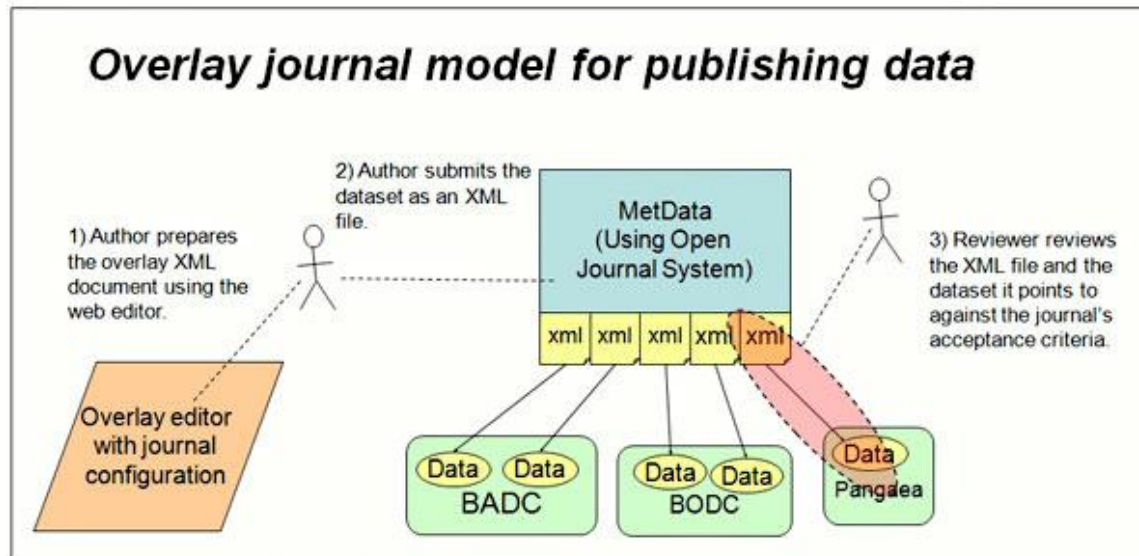
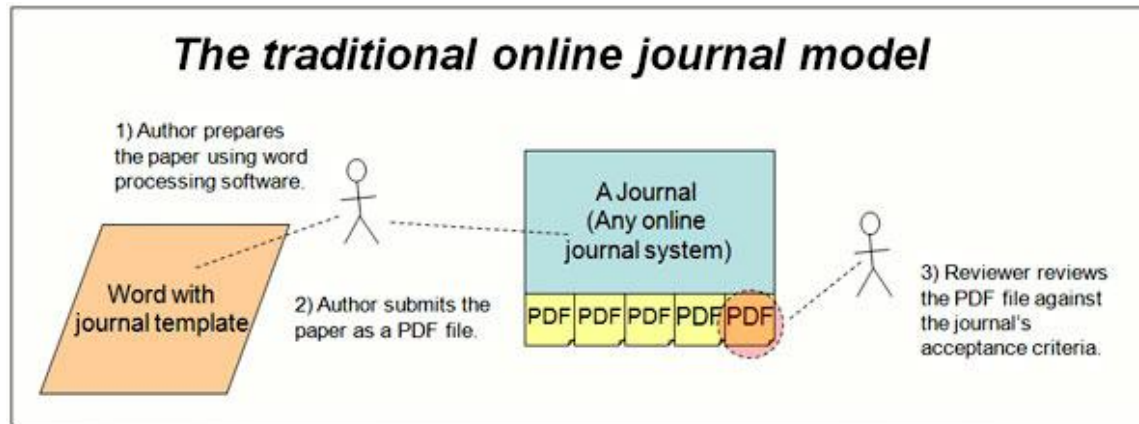


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Published by Copernicus Publications.

<http://www.earth-system-science-data.net/>

Datenzentriertes Modell: - Overlay Data Journal, e.g. OJIMS



Callaghan et al., 2009

Rolle der Wissenschaft

- Bereitstellung
- Dokumentation
- Fehler/Unsicherheiten – Bewertung, Qualität
- Kontext

Überzeugungsarbeit durch “Betreiber”

- Aktive Contentakquise
- Passive Contentakquise

Zusammenfassung

Praxis I:

- Starke disziplinspezifische Anforderungen im Umgang mit Forschungsdaten → Rolle der Wissenschaft
- Modelle für die Publikation der Forschungsdaten,
 - Charakteristika und Flexibilitäten
 - unterschiedliche Auswirkungen auf Raum und Zeitpunkt der Datenpublikation

Praxis II – Ihre Praxis:

Kennen Sie die Wünsche der Wissenschaftler?

Wie sind die Erfahrungen bei Ihnen mit den Kooperationen mit der Wissenschaft?

Welche Probleme gibt es dabei?

Referenzen

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http://www.valaconf.org.au/vala2008/papers2008/111_Treloar_Final.pdf

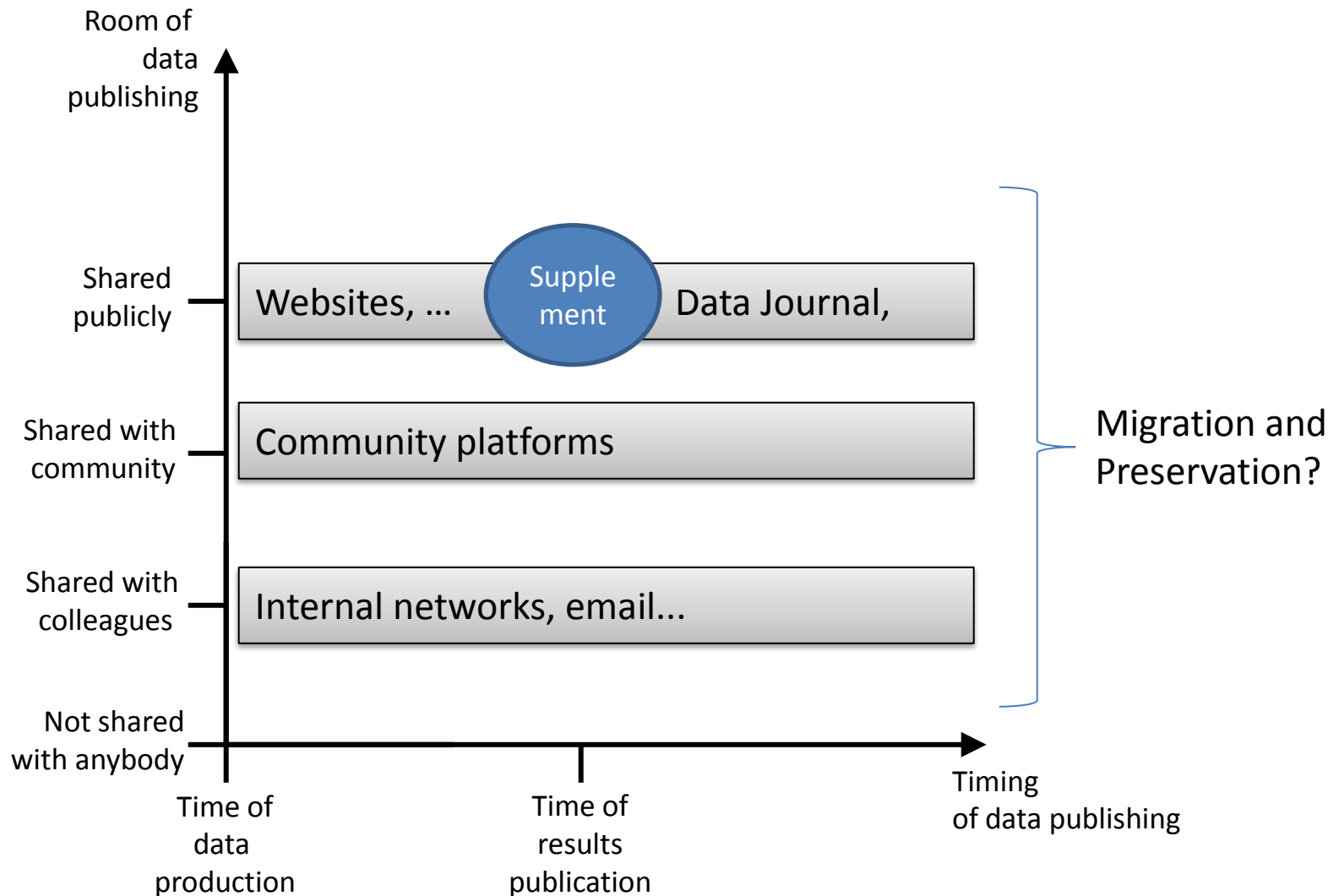
Gefördert durch Wolfgang-Gentner-Stipendium, BMBF

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Backup

Noch einmal zurueck zu Zeit und
Raum

Gegenwaertige Publikationsmodelle: Zeit und Raum



Objektzentrierte Publikation: Zeit und Raum

