Offene Wissenschaft: Publikation von Forschungsdaten / Open Access für wissenschaftliche Texte

Andreas Hübner
Deutsches GeoForschungsZentrum GFZ

FID GEO
Fachinformationsdienst
Geowissenschaften der festen Erde

Gefördert durch DFG

15:15 – 16:45 Publikation von Forschungsdaten

16:45 – 17:00 Pause

17:00 – 17:30 Open Access für wissenschaftliche Texte

Gefördert durch DFG

DFG Fachinformationsdienste

- Bundesweites System, um die Informationsinfrastrukturen der Hochschulen und Forschungseinrichtungen durch überregionale Dienstleistungen zu ergänzen.
- FID GEO ist einer von derzeit 35 DFG-geförderten Fachinformationsdiensten.

SUB | NIEDERSACHSISCHE STAATS- UND UNIVERSITÄTSBIBLIOTHEK GÖTTINGEN

GFZ Helmholtz-Zentrum POTSDAM

- Aktiv seit Juni 2016, Website: fidgeo.de

Fachinformationsdienst Geowissenschaften der festen Erde

Das Serviceangebot dieses Fachinformationsdienstes richtet sich an die Fachcommunity aus den Geowissenschaften der festen Erde.

Elektronische Publikation von institutionellen Serien und anderen Schriften sowie Pre- und Postprints begutachteter Forschungsarbeiten.

Elektronische Publikation von Forschungsdaten. Der Schwerpunkt liegt auf Daten, die Grundlage eines Artikels in einer Fachzeitschrift sind.

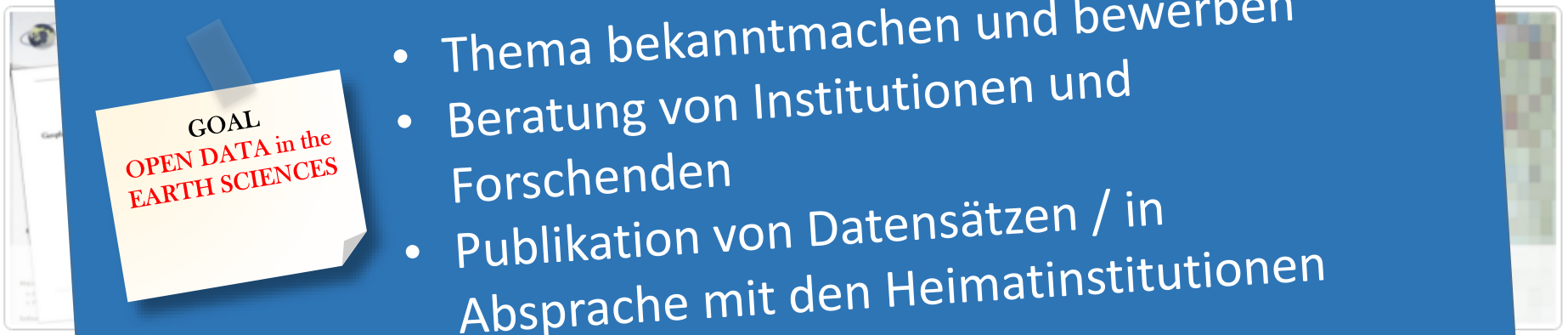
Digitalisierung gemeinfreier Schriften und Karten *„on demand"* sowie retrospektive Digitalisierung von institutionellen Serien und anderen Schriften.

FID GEO

E-PUBLIZIEREN DATENPUBLIKATION DIGITALISIERUNG

Fachinformationsdienst
Geowissenschaften der festen Erde

Das Serviceangebot dieses Fachinformationsdienstes richtet sich an die Fachcommunity … Erde.



GOAL
OPEN DATA in the EARTH SCIENCES

http://www.copdess.org/

- Thema bekanntmachen und bewerben
- Beratung von Institutionen und Forschenden
- Publikation von Datensätzen / in Absprache mit den Heimatinstitutionen

… Schriften sowie Pre- und Postprints begutachteter Forschungsarbeiten.

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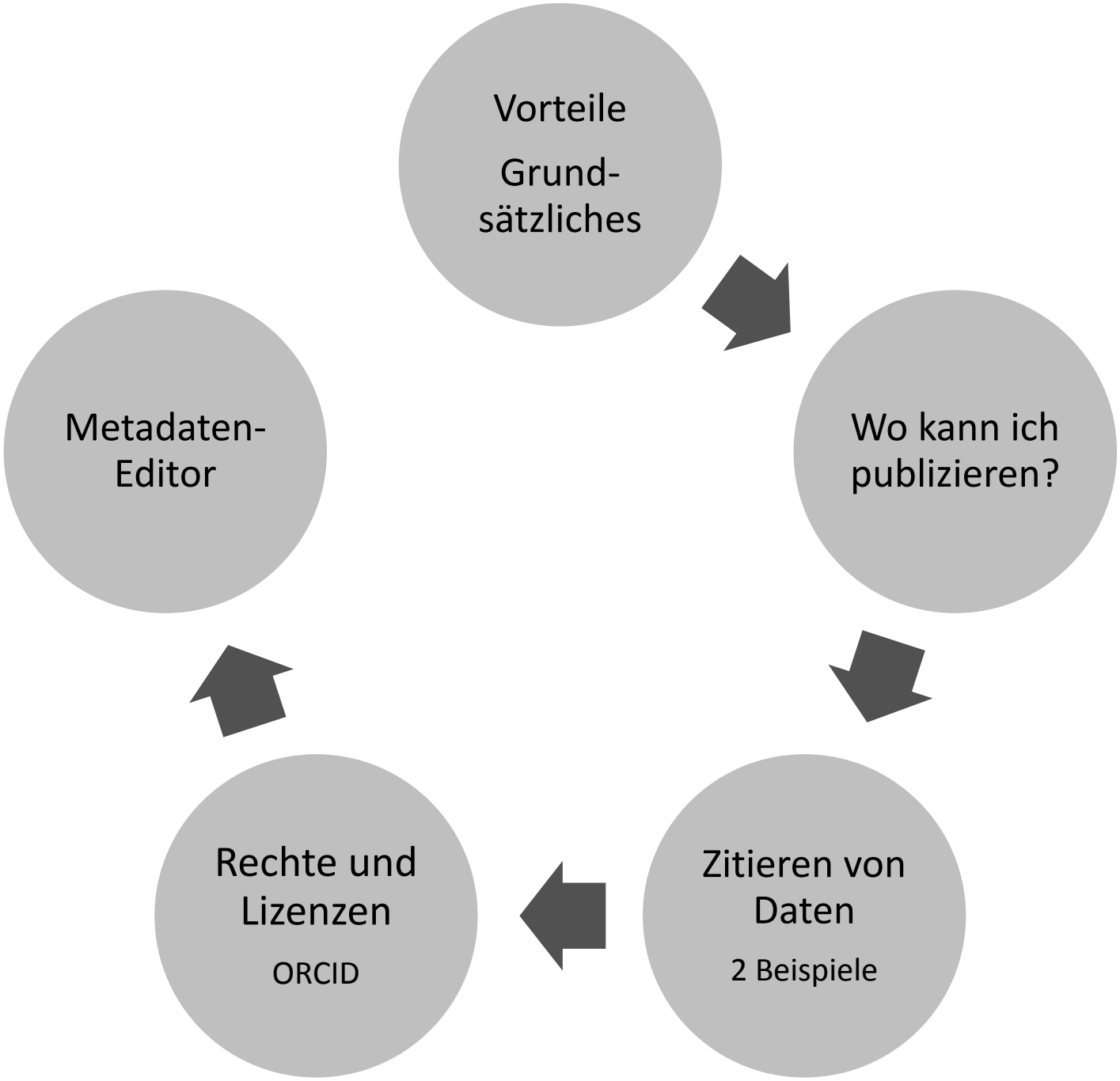
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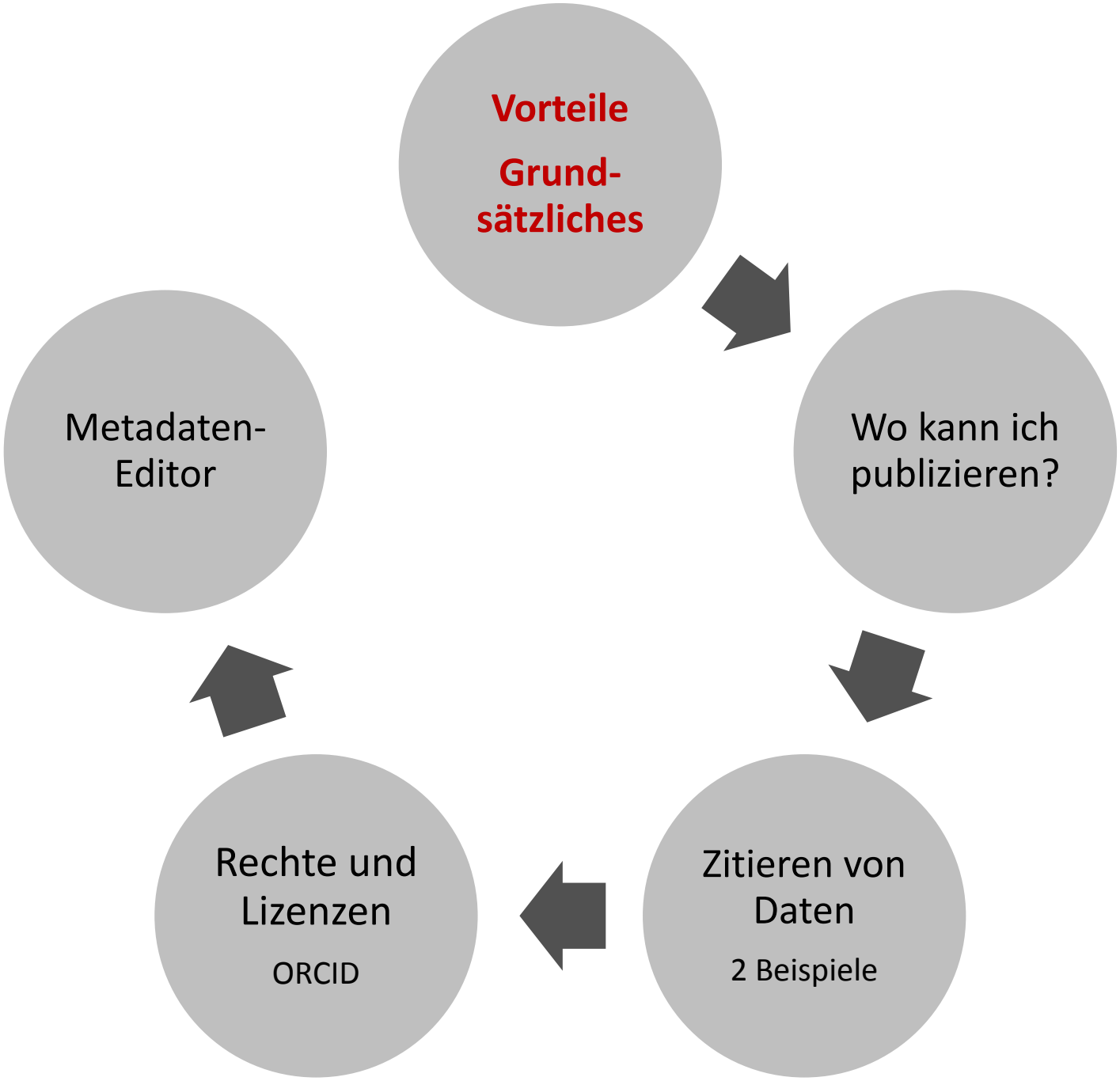
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xtranormal

Chancen und Potentiale

Chancen für Forscher/innen

- Ihre Forschungstätigkeit wird sichtbarer. Publikationen, deren zugehörige Daten offen verfügbar sind, werden signifikant häufiger zitiert (Piwowar und Visions 2013).
- Publikation von Forschungsdaten wird zunehmend als eigenständige wissenschaftliche Leistung anerkannt.
- Sie stärken die Qualität und die Vertrauenswürdigkeit ihrer Forschungen, indem Sie anderen die Möglichkeit zur Verifizierung geben.
- Neue Möglichkeiten der Zusammenarbeit zwischen Datenproduzierenden und Datennutzern.
- Sie entsprechen damit den aktuellen Anforderungen von Seiten der Forschungsförderung.
- Sicherung der eigenen Forschungsinvestitionen durch Einrichtung von Sperrfristen ist möglich.

Chancen für die Wissenschaft

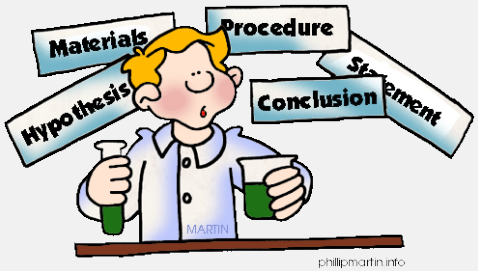
- Datenpublikation eröffnet neue Forschungspotentiale, und zwar für Re-analysen mit neuen Forschungsfragen und –methoden oder für Kombinationen von Daten verschiedener Quellen.
- Datenpublikation reduziert redundante Datenproduktion in der Wissenschaft.

Piwowar HA, Vision TJ. (2013) Data reuse and the open data citation advantage. PeerJ 1:e175 https://doi.org/10.7717/peerj.175

Was sind Forschungsdaten?

„Unter Forschungsdaten sind [...] digitale und elektronisch speicherbare Daten zu verstehen, die im Zuge eines wissenschaftlichen Vorhabens zum Beispiel durch Quellenforschungen, Experimente, Messungen, Erhebungen oder Befragungen entstehen.“ ***DFG, 2010***

1. Text-Dokumente, Tabellen
2. Laborbücher, Feldaufzeichnungen
3. Umfragen, Abschriften
4. Audiotapes, Videotapes
5. Photographien, Filme
6. Proben
7. Datenbanken
8. Modelle, Algorithmen, Skripte
9. Methoden und Workflows



Forschungs-Daten → Interpretation

Repository = (Online zugängliche) Datenbank zur Verzeichnung und Publikation von Forschungsdaten, Hochschulschriften und anderen digitalen Objekten.[1]

[1] Einstieg ins Forschungsdatenmanagement in den Geowissenschaften, https://doi.org/10.2312/lis.14.01

Daten-Publikation ⟷ **Text-Publikation**

fachspezifisches Repository	Verlag
Open Access!	Open Access?!
Review	Review
Metadaten	Metadaten
DOI	DOI
Lizenz	Lizenz

1. **Rach, O; Brauer, A; Wilkes, H et al. (2014):** Hydrogen isotope data of aquatic and terrestrial lipid biomarkers from Lake Meerfelder Maar during the Younger Dryas
   Supplement to: **Rach, O; Brauer, A; Wilkes, H et al. (2014):** Delayed hydrological response to Greenland cooling at the onset of the Younger Dryas in Western Europe. *Nature Geoscience*
   Size: 3 datasets
   doi:10.1594/PANGAEA.823779 - Score: 3.13 - Similar datasets

FAIR data Guiding Principles

Data should be Findable

- weltweit einmaliger und ewig gültiger “identifier”

Data should be Accessible

- standardisiertes „communications protocol“

Data should be Interoperable

- maschinenlesbar

Data should be Re-usable

- reichhaltige Attribute zur Beschreibung, Lizenz

FORCE11
The Future of Research Communications and e-Scholarship

https://www.force11.org/fairprinciples

Metadaten

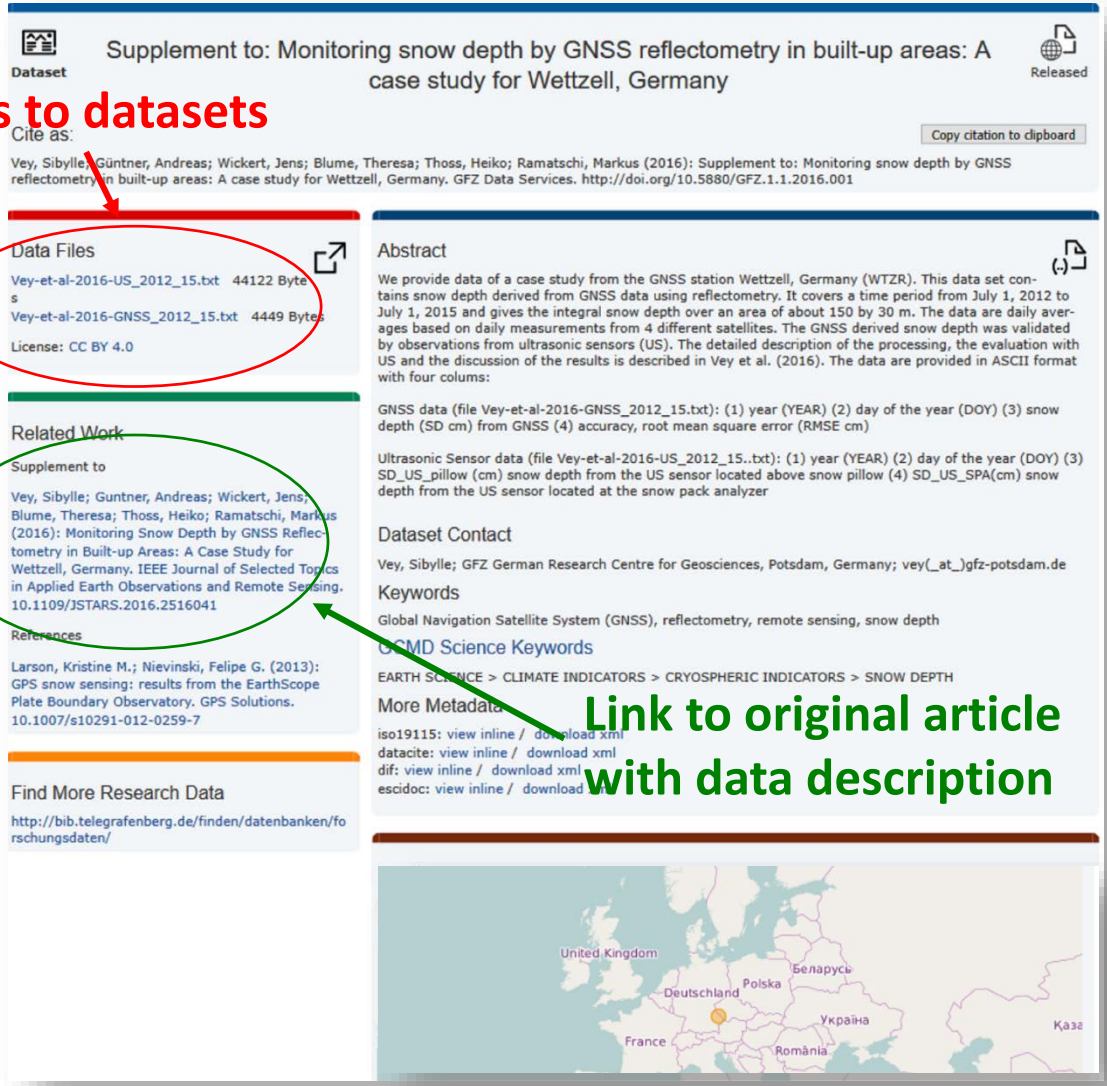
Metadaten sind „Daten über Daten“

a) für „data discovery“

   Digital object identifier (DOI) → https://doi.org/10.xxxx/xxx...

b) für Datendokumentation und Wiederverwendung

Example 1: Data Supplements



We recommend…

- to publish **data supplements in open access data repositories**
- synchronous to the publication of the scientific article with **cross-references between the article and the dataset**

Folie von Kirsten Elger

Example 2: Data Journals

Peer-reviewed articles with the description of datasets, data collections, data infrastructures, etc.

No inter-pretation!

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Example 3: Data Reports

Institutional Report Series have long traditions as important sources of information. Today: persistently online accessible and citable with DOI…

- GFZ Data Reports:
- Flexible format – “enhanced data description“
- standardised templates for each discipline, internal review
- Project-specific design if required

Folie von Kirsten Elger

Coalition on Publishing Data in the Earth and Space Sciences

COPDESS

GOAL

OPEN DATA in the EARTH and SPACE SCIENCES

SITUATION TODAY

1. Scholarly publication is a key high value entry point in making data available, open, discoverable, and usable.
2. Unfortunately, the vast majority of data submitted along with publications are in formats and forms of storage that makes discovery and reuse difficult or impossible.

STATEMENT OF COMMITMENT

- To promote **metadata information and domain standards**, [...], to help **simplify and standardize deposition and reuse.**
- To promote referencing of data sets using the **Joint Declaration of Data Citation Principles,** in which **citations of data sets should be included within reference lists.**
- To include in research papers concise statements indicating where data reside and clarifying availability.
- To promote and implement links to data sets in publications and corresponding links to journals in data facilities via persistent identifiers. (January 2015)

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43 SIGNATURES (March 2017)

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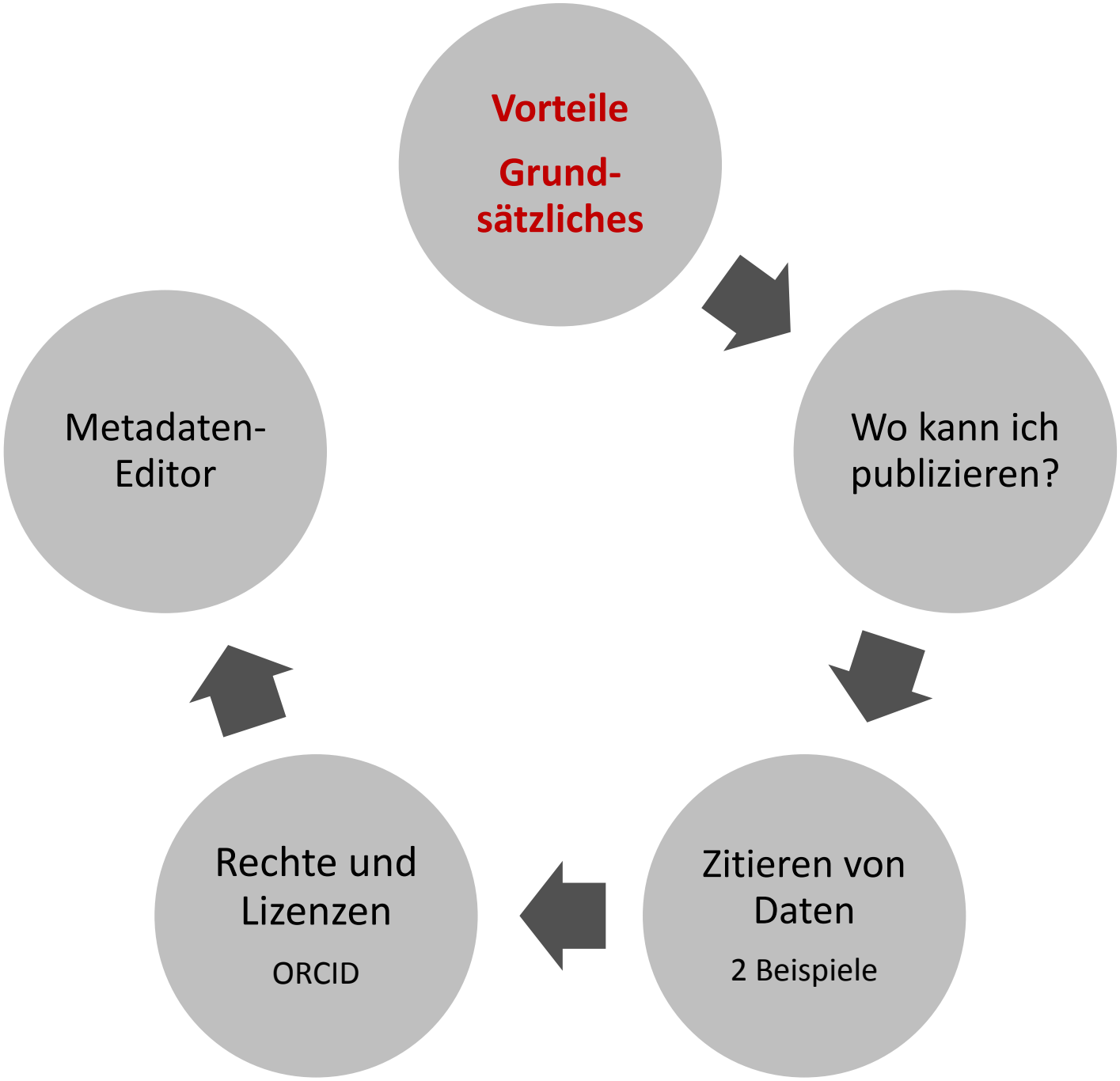
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re3data.org
REGISTRY OF RESEARCH DATA REPOSITORIES

[1] Einstieg ins Forschungsdatenmanagement in den Geowissenschaften, https://doi.org/10.2312/lis.14.01

re3data.org
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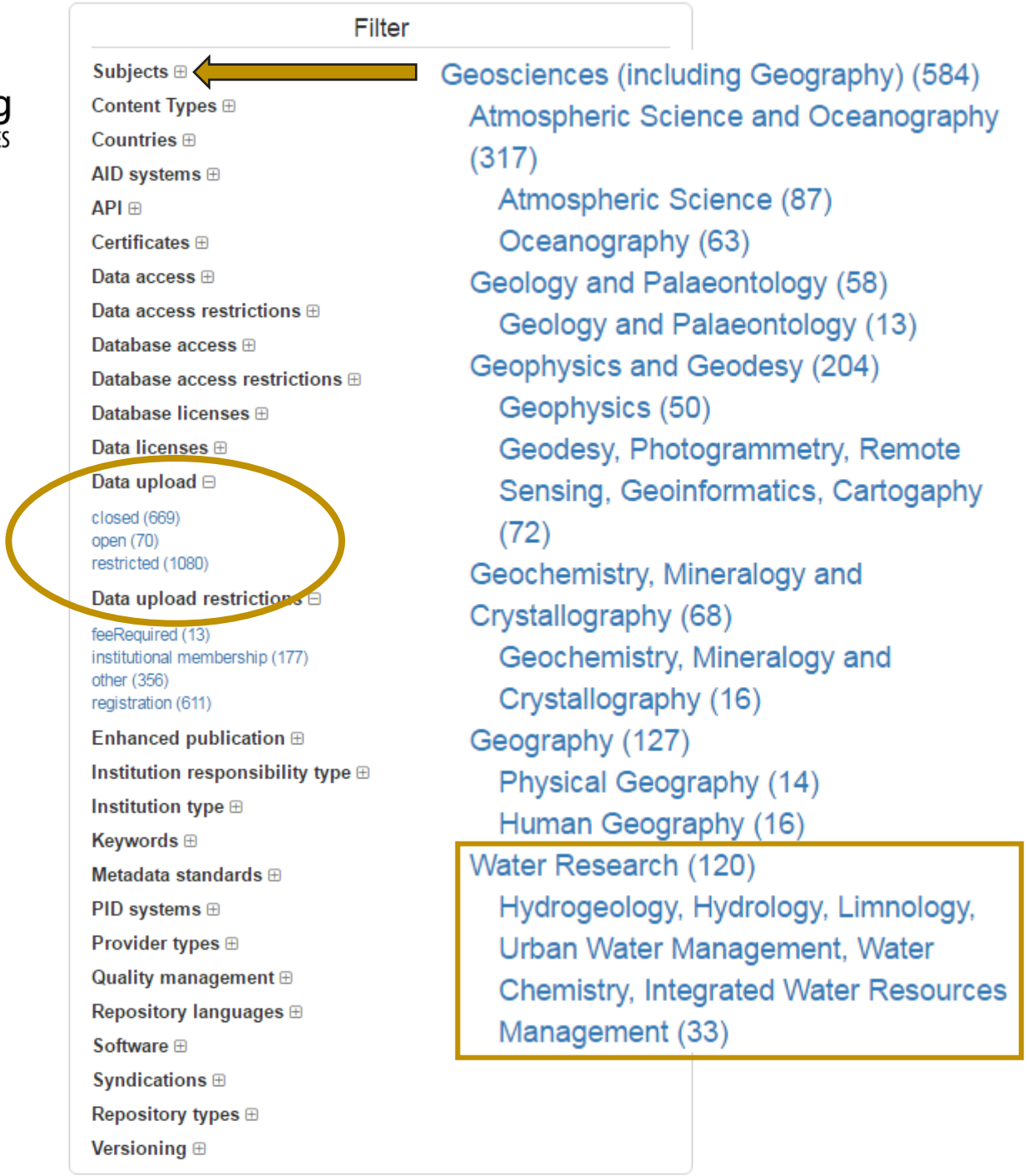

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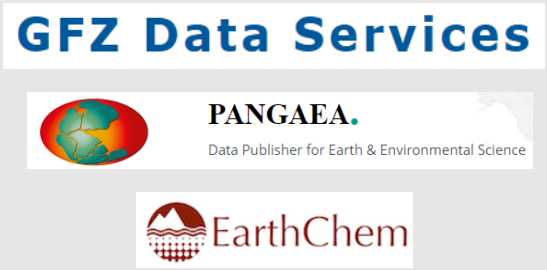
Repository = (Online zugängliche) Datenbank zur Verzeichnung und Publikation von Forschungsdaten, Hochschulschriften und anderen digitalen Objekten.[1]

Institutionelles Repository

- Für Angehörige der Institution
- Viele Disziplinen

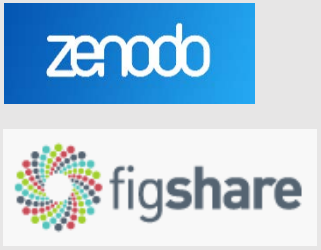
Fachspezifisches Repository

- Für die weltweite Fachcommunity
- Für bestimmte Disziplinen



Allgemeines Repository

- Offen für alle Personen
- Offen für alle Disziplinen



[1] Einstieg ins Forschungsdatenmanagement in den Geowissenschaften, https://doi.org/10.2312/lis.14.01

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Repository = (Online zugängliche) Datenbank zur Verzeichnung und Publikation von Forschungsdaten, Hochschulschriften und anderen digitalen Objekten.[1]

Institutionelles Repository

- Kenntnisse der fachspezifischen Metadaten
- Vernetzt mit den fachspezifischen Datenportalen
- Bessere Qualitätskontrolle
- Fachspezifische Services, z.B. mit IGSN

Fachspezifisches Repository

- Für die weltweite Fachcommunity
- Für bestimmte Disziplinen

GFZ Data Services

PANGAEA.
Data Publisher for Earth & Environmental Science

EarthChem

Allgemeines Repository

- Offen für alle Personen
- Offen für alle Disziplinen

zenodo

figshare

[1] Einstieg ins Forschungsdatenmanagement in den Geowissenschaften, https://doi.org/10.2312/lis.14.01


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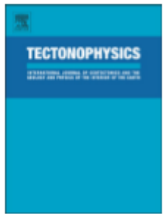
Contents lists available at ScienceDirect

Tectonophysics

journal homepage: www.elsevier.com/locate/tecto



Properties of granular analogue model materials: A community wide survey

M. Klinkmüller [a], G. Schreurs [a,1], M. Rosenau [b], H. Kemnitz [b]

[a] Institute of Geological Sciences, University of Bern, Baltzerstrasse 1 +3, CH-3012 Bern, Switzerland
[b] Helmholtz-Zentrum Potsdam, GFZ Deutsches GeoForschungsZentrum, Telegrafenberg, D-14473 Potsdam, Germany

sented as grain size distribution curves, in which particle grain size is plotted against cumulative weight percentage (Fig. 2).

The original sieve data have been published open access and are available in Klinkmüller et al. (2016b).

1. Zitation im Text

References

Heilbronner, R., Keulen, N., 2006. Grain size and grain shape analysis of fault rocks. Tectonophysics 427, 199–216.

Hubbert, M.K., 1951. Mechanical basis for certain familiar geologic structures. Geol. Soc. Am. Bull. 62, 1259–1273.

Klinkmüller, M., Schreurs, G., Rosenau, M., 2016a. GeoMod2008 materials benchmark: The ring shear test data set. GFZ Data Services. http://dx.doi.org/10.5880/GFZ.4.1.2016.002.

Klinkmüller, M., Schreurs, G., Rosenau, M., 2016b. GeoMod2008 materials benchmark: The sieve data set. GFZ Data Services. http://dx.doi.org/10.5880/GFZ.4.1.2016.003.

Klinkmüller, M., Kemnitz, H., Schreurs, G., Rosenau, M., 2016c. GeoMod2008 materials benchmark: The SEM image data set. GFZ Data Services. http://dx.doi.org/10.5880/GFZ.4.1.2016.004.

2. Dataset-DOI in den References

Folie von Kirsten Elger

Contents lists available at ScienceDirect

Tectonophysics

journal homepage: www.elsevier.com/locate/tecto

Properties of granular analogue model materials: A community wide survey

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References

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Hubbert, M.K., 1951. Mechanical basis for certain familiar geol
Am. Bull. 62, 1259–1273.
Klinkmüller, M., Schreurs, G., Rosenau, M., 2016a. GeoMod200
The ring shear test data set. GFZ Data Services. http://dx.
2016.002.
Klinkmüller, M., Schreurs, G., Rosenau, M., 2016b. GeoMod2008 materials benchmark: The sieve data set. GFZ Data Services. http://dx.doi.org/10.5880/GFZ.4.1.2016.003.
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GFZ Helmholtz Centre Potsdam

3. Zugang zu Daten über DOI

Dataset

GeoMod2008 materials benchmark: The sieve dataset

Released

Cite as:

Copy citation to clipboard

Klinkmüller, Matthias; Schreurs, Guido; Rosenau, Matthias (2016): GeoMod2008 materials benchmark: The sieve dataset. GFZ Data Services. http://doi.org/10.5880/GFZ.4.1.2016.003

Data Files

SieveDataOverview.pdf 218020 Bytes
Sieve-data.zip 735235 Bytes
Explanations for the Sieve dataset.pdf 536692 Bytes

License: CC BY 4.0

Abstract

This dataset provides sieve data (grain size distributions) on natural and artificial granular materials used for experimental simulation by the analogue geodynamic modelling community (21 sands and glass beads). The material samples have been collected community-wide and analysed at GFZ Potsdam in the framework of the GeoMod2008 conference benchmark initiative. The context of data collection, details of the material samples and measuring techniques as well as interpretation and discussion of results can be found in Klinkmüller et al. (2016) to which this dataset is supplement material.

An overview of all files of the data set is given in the table SieveDataOverview.

Related Work

Supplement to

Klinkmüller, M., Schreurs, G., Rosenau, M., & Kemnitz, H. (2016). Properties of granular analogue model materials: A community wide survey. Tectonophysics. doi:10.1016/j.tecto.2016.01.017

Methods

The data presented here are derived by sieving using a RETSCH Vibratory Sieve Shaker AS 200 basic at GFZ Potsdam's analogue laboratory for tectonic modelling. Mesh sizes used were 630, 400, 355, 224, 125, and 63 micrometer. 1 kg of each sample material has been sieved for 4 hours at maximum Amplitude (3 mm). Laboratory conditions were air conditioned during all the measurements (Temperature: 23°C, Humidity: 45%).

The resulting sieve analysis data are presented as fractions of 1 kg.

Find More Research Data

http://bib.telegrafenberg.de/finden/datenbanken/forschungsdaten/

Dataset Contact

Rosenau, Matthias; GFZ German Research Centre for Geosciences, Potsdam, Germany; rosen(_at_)gfz-potsdam.de; http://www.gfz-potsdam.de/en/section/lithosphere-dynamics/infrastructure/geodynamics/tectonic-modeling-lab/

Keywords

analogue materials, granular materials, bulk solids, analog models, sandbox, benchmark, Geomod, EPOS, experiment, properties of materials, geological process, materials science

GCMD Science Keywords

EARTH SCIENCE SERVICES > MODELS > PHYSICAL/LABORATORY MODELS
EARTH SCIENCE > SOLID EARTH > TECTONICS

den References

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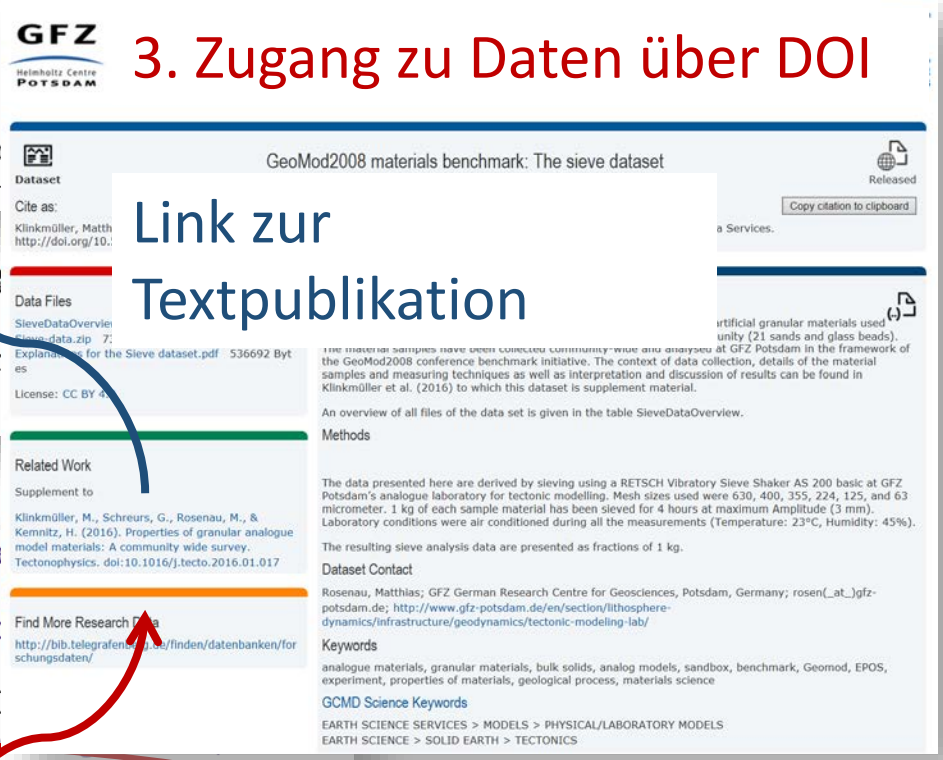

Link zur Textpublikation

den References

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Contents lists available at ScienceDirect

Journal of Hydrology

journal homepage: www.elsevier.com/locate/jhydrol

Research papers

Uncertainty of Intensity–Duration–Frequency (IDF) curves due to varied climate baseline periods

Sherien Fadhel [a,b,*], Miguel Angel Rico-Ramirez [a], Dawei Han [a]

[a] Department of Civil Engineering, University of Bristol, Bristol, United Kingdom
[b] Department of Civil Engineering, University of Al-Mustansiriyah, Baghdad, Iraq

and comprises an area of approximately 12 km × 5 km. The observed rainfall dataset used in this study is the gridded precipitation product, created by the Centre of Ecology & Hydrology Gridded Estimates of Areal Rainfall (CEH_GEAR) for the period 1890–2014 (Keller et al., 2015). This gridded data set has a spatial resolution of 1 km × 1 km and is based on different station densi-

1. Zitation im Text

References

Hawkins, E., Sutton, R., 2009. The potential to narrow uncertainty in regional climate predictions. Bull. Am. Meteorol. Soc. 90, 1095–1107. http://dx.doi.org/10.1175/2009BAMS2607.1.

Intergovernmental Panel on Climate Change (IPCC), 2012. Managing the risks of extreme events and disasters to advance climate change adaptation. In: Field, C. B. (Ed.), A Special Report of Working Groups I and II of the Intergovernmental Panel on ClimatChange. Cambridge University Press, New York.

Keller, V.D.J., Tanguy, M., Prosdocimi, I., Terry, J.A., Hitt, O., Cole, S.J., Fry, M., Morris, D.G., Dixon, H., 2015. CEH-GEAR: 1 km resolution daily and monthly areal rainfall estimates for the UK for hydrological and other applications. Earth Syst. Sci. Data 7, 143–155. http://dx.doi.org/10.5194/essd-7-143-2015.

Kim, K.B., Kwon, H.H., Han, D., 2015. Bias correction methods for regional climate model simulations considering the distributional parametric uncertainty underlying the observations. J. Hydrol. 530, 568–579.

2. Dataset-DOI in den References

Contents lists available at ScienceDirect

Journal of Hydrology

Earth System Science Data
The Data Publishing Journal

3. Data article via DOI

Earth Syst. Sci. Data, 7, 143-155, 2015
http://www.earth-syst-sci-data.net/7/143/2015/
doi:10.5194/essd-7-143-2015

Volume 7, issue 1

Peer-reviewed comment

29 Jun 2015

CEH-GEAR: 1 km resolution daily and monthly areal rainfall estimates for the UK for hydrological and other applications

V. D. J. Keller, M. Tanguy, I. Prosdocimi, J. A. Terry, O. Hitt, S. J. Cole, M. Fry, D. G. Morris, and H. Dixon
NERC Centre for Ecology & Hydrology, Maclean Building, Benson Lane, Crowmarsh Gifford, Wallingford, Oxon, OX10 8BB, UK

Received: 11 Dec 2014 – Discussion started: 27 Jan 2015
Revised: 20 Apr 2015 – Accepted: 29 May 2015 – Published: 29 Jun 2015

Abstract. The Centre for Ecology & Hydrology – **G**ridded **E**stimates of **A**real **R**ainfall (CEH-GEAR) data set was developed to provide reliable 1 km gridded estimates of daily and monthly rainfall for Great Britain (GB) and Northern Ireland (NI) (together with approximately 3500 km^2 of catchment in the Republic of Ireland) from 1890 onwards. The data set was primarily required to support hydrological modelling.

The rainfall estimates are derived from the Met Office collated historical weather observations for the UK which include a national database of rain gauge observations. The natural neighbour interpolation methodology, including a normalisation step based on average annual rainfall (AAR), was used to generate the daily and monthly rainfall grids. To derive the monthly estimates, rainfall totals from monthly and daily (when complete month available) rain gauges were used in order to obtain maximum information from the rain gauge network. The daily grids were adjusted so that the monthly grids are fully consistent with the daily grids. The CEH-GEAR data set was developed according to the guidance provided by the British Standards Institution.

The CEH-GEAR data set contains 1 km grids of daily and monthly rainfall estimates for GB and NI for the period 1890–2012. For each day and month, CEH-GEAR includes a secondary grid of distance to the nearest operational rain gauge. This may be used as an indicator of the quality of the estimates. When this distance is greater than 100 km, the estimates are not calculated due to high uncertainty.

CEH-GEAR is available from doi:10.5285/5dc179dc-f692-49ba-9326-a6893a503f6e and is free of charge for commercial and non-commercial use subject to licensing terms and conditions.

References

Hawkins, E., Sutton, R., 2009. The p
climate predictions. Bull. Am. Met
10.1175/2009BAMS2607.1.

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CEH-GEAR: 1 km resolution daily and monthly areal rainfall estimates for the UK for hydrological and other applications

V. D. J. Keller, M. Tanguy, I. Prosdocimi, J. A. Terry, O. Hitt, S. J. Cole, M. Fry, D. G. Morris, and H. Dixon
NERC Centre for Ecology & Hydrology, Maclean Building, Benson Lane, Crowmarsh Gifford, Wallingford, Oxon, OX10 8BB, UK

Received: 11 Dec 2014 – Discussion started: 27 Jan 2015
Revised: 20 Apr 2015 – Accepted: 29 May 2015 – Published: 29 Jun 2015

Abstract. The Centre for Ecology & Hydrology – **G**ridded **E**stimates of **A**real **R**ainfall (CEH-GEAR) data set was developed to provide reliable 1 km gridded estimates of daily and monthly rainfall for Great Britain (GB) and Northern Ireland (NI) (together with approximately 3500 km^2 of catchment in the Republic of Ireland) from 1890 onwards. The data set was primarily required to support hydrological modelling.

The rainfall estimates are derived from the Met Office collated historical weather observations for the UK which include a national database of rain gauge observations. The natural neighbour interpolation methodology, including a normalisation step based on average annual rainfall (AAR), was used to generate the daily and monthly rainfall grids. To derive the monthly estimates, rainfall totals from monthly and daily (when complete month available) rain gauges were used in order to obtain maximum information from the rain gauge network. The daily grids were adjusted so that the monthly grids are fully consistent with the daily grids. The CEH-GEAR data set was developed according to the guidance provided by the British Standards Institution.

The CEH-GEAR data set contains 1 km grids of daily and monthly rainfall estimates for GB and NI for the period 1890–2012. For each day and month, CEH-GEAR includes a secondary grid of distance to the nearest operational rain gauge. This may be used as an indicator of the quality of the estimates. When this distance is greater than 100 km, the estimates are not calculated due to high uncertainty.

CEH-GEAR is available from doi:10.5285/5dc179dc-f692-49ba-9326-a6893a503f6e and is free of charge for commercial and non-commercial use subject to licensing terms and conditions.

Dataset

Gridded estimates of daily and monthly areal rainfall for the United Kingdom (1890-2012) [CEH-GEAR]

This dataset has been withdrawn and has been superseded by **Gridded estimates of daily and monthly areal rainfall for the United Kingdom (1890-2014) [CEH-GEAR]**

Tanguy, M.; Dixon, H.; Prosdocimi, I.; Morris, D. G.; Keller, V. D. J. (2014)
https://doi.org/10.5285/5dc179dc-f692-49ba-9326-a6893a503f6e

1 km gridded estimates of daily and monthly rainfall for Great-Britain and Northern Ireland (together with approximately 3000 km2 of catchment in the Republic of Ireland) from 1890 to 2012. The rainfall estimates are derived from the Met Office national database of observed precipitation. To derive the estimates, monthly and daily (when complete month available) precipitation totals from the UK rain gauge network are used. The natural neighbour interpolation methodology, including a normalisation step based on average annual rainfall, was used to generate the daily and monthly estimates. The estimated rainfall on a given day refers to the rainfall amount precipitated in 24 hours between 9am on that day until 9am on the following day. The CEH-GEAR dataset has been developed according to the guidance provided in BS 7843-4:2012.

Publication date: 2014-05-01 (created 2014-05-01)

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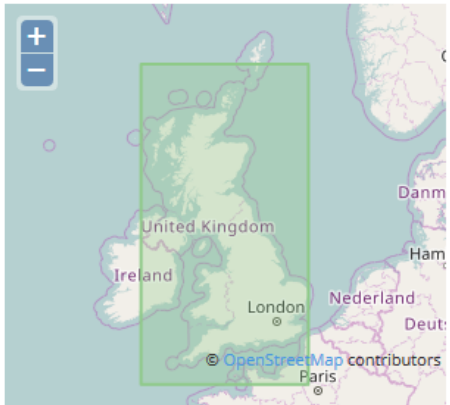

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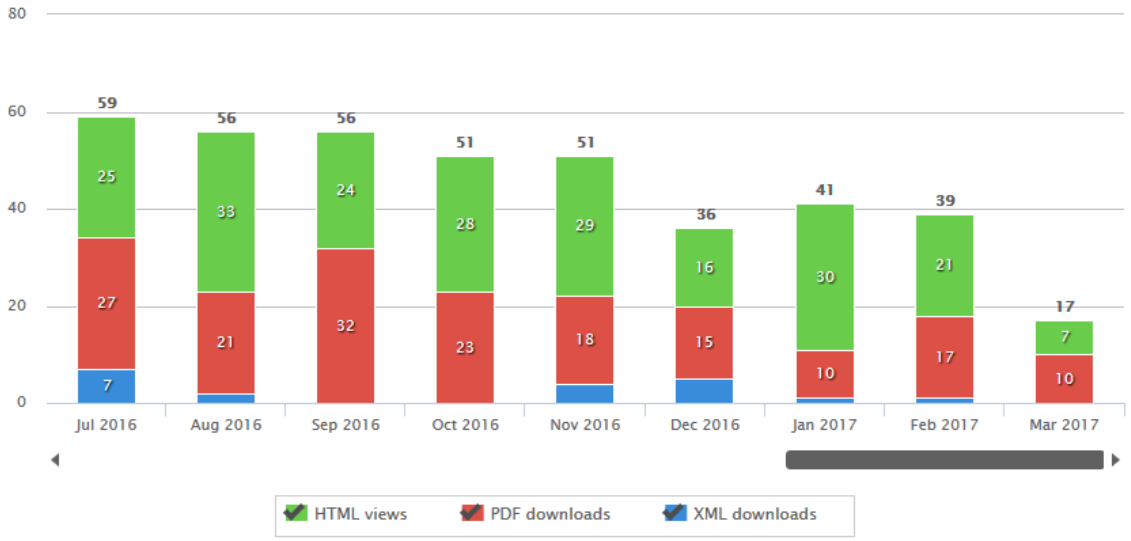

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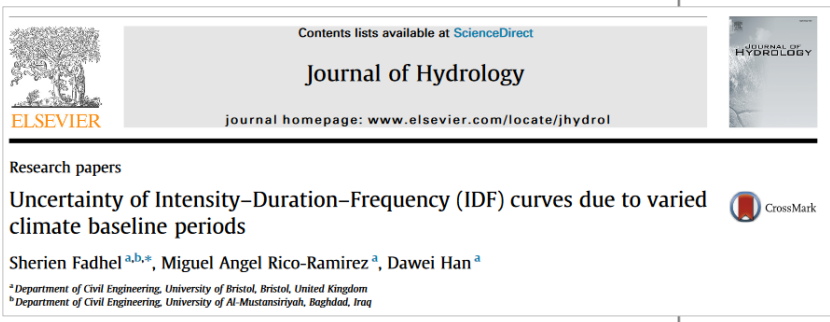
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Research papers

Uncertainty of Intensity–Duration–Frequency (IDF) curves due to varied climate baseline periods

Sherien Fadhel [a,b,*], Miguel Angel Rico-Ramirez [a], Dawei Han [a]

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[b] Department of Civil Engineering, University of Al-Mustansiriyah, Baghdad, Iraq

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   A. Kay et al.
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8. **Low Flow Response Surfaces for Drought Decision Support: A Case Study from the UK**
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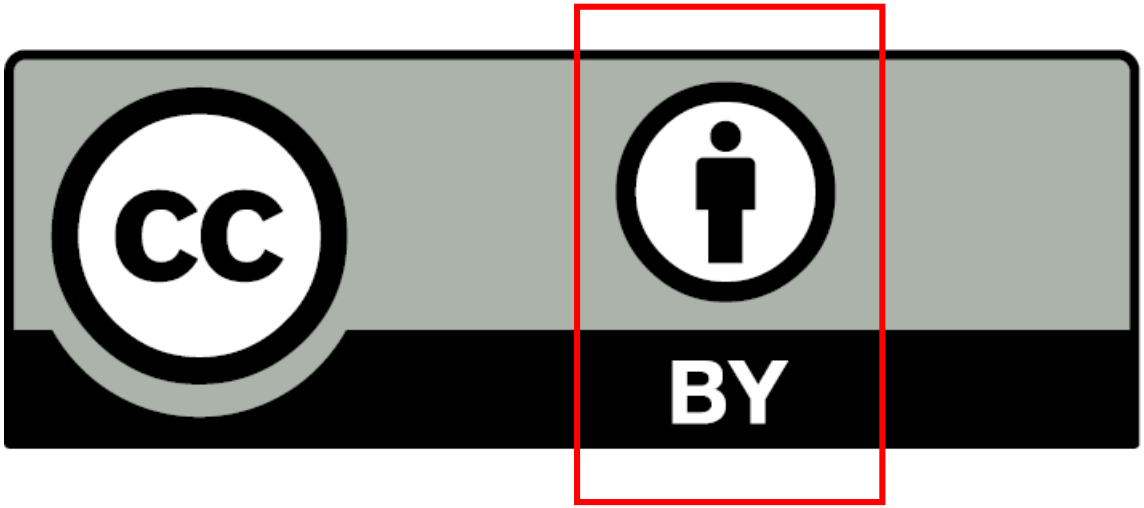

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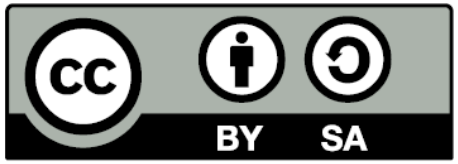

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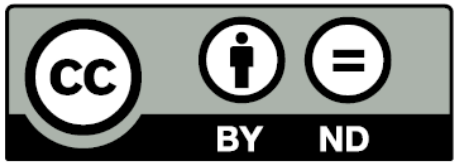

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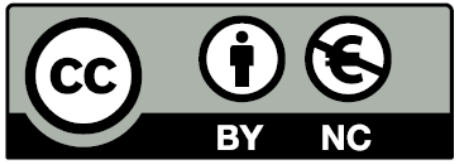

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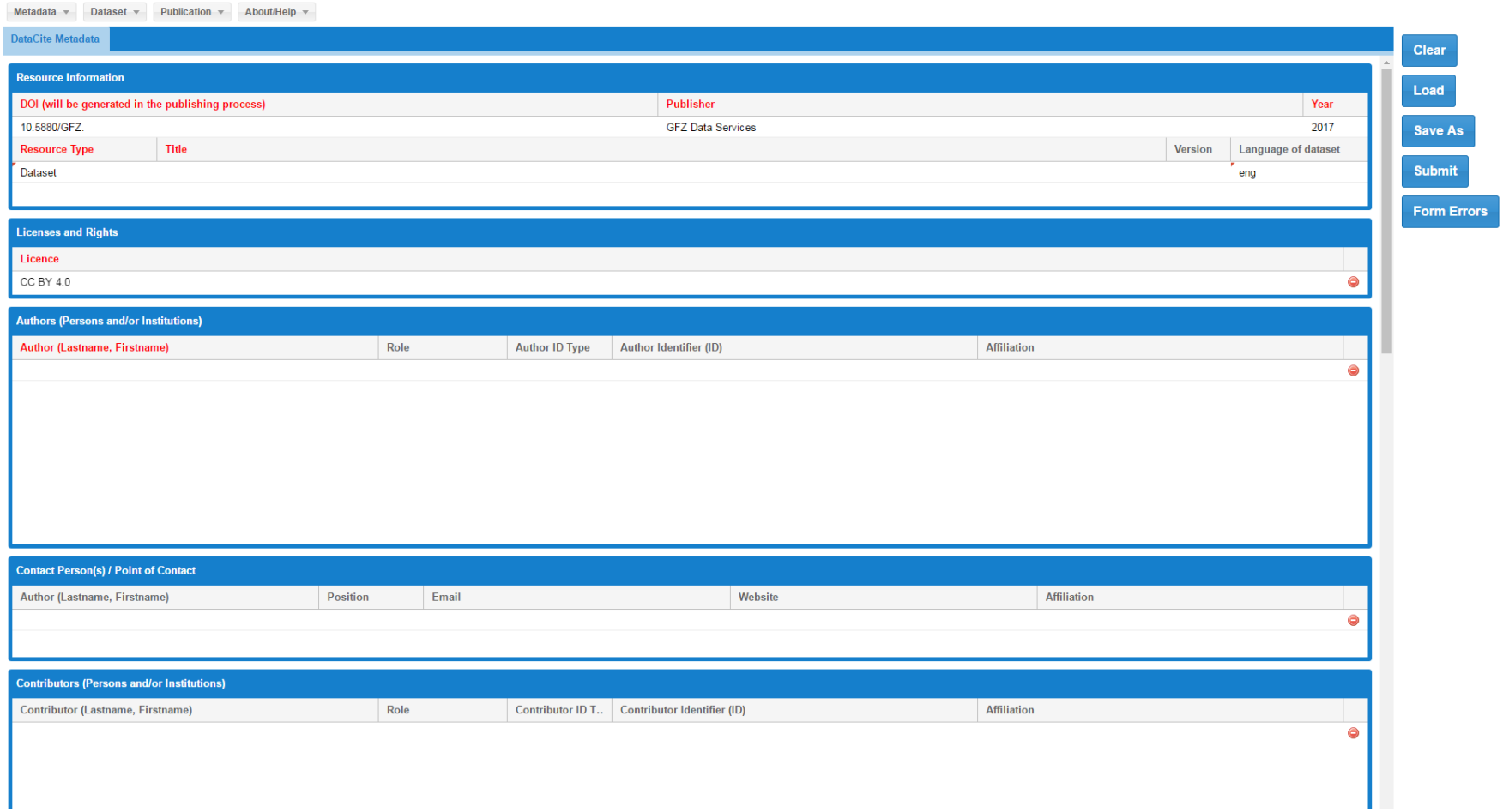

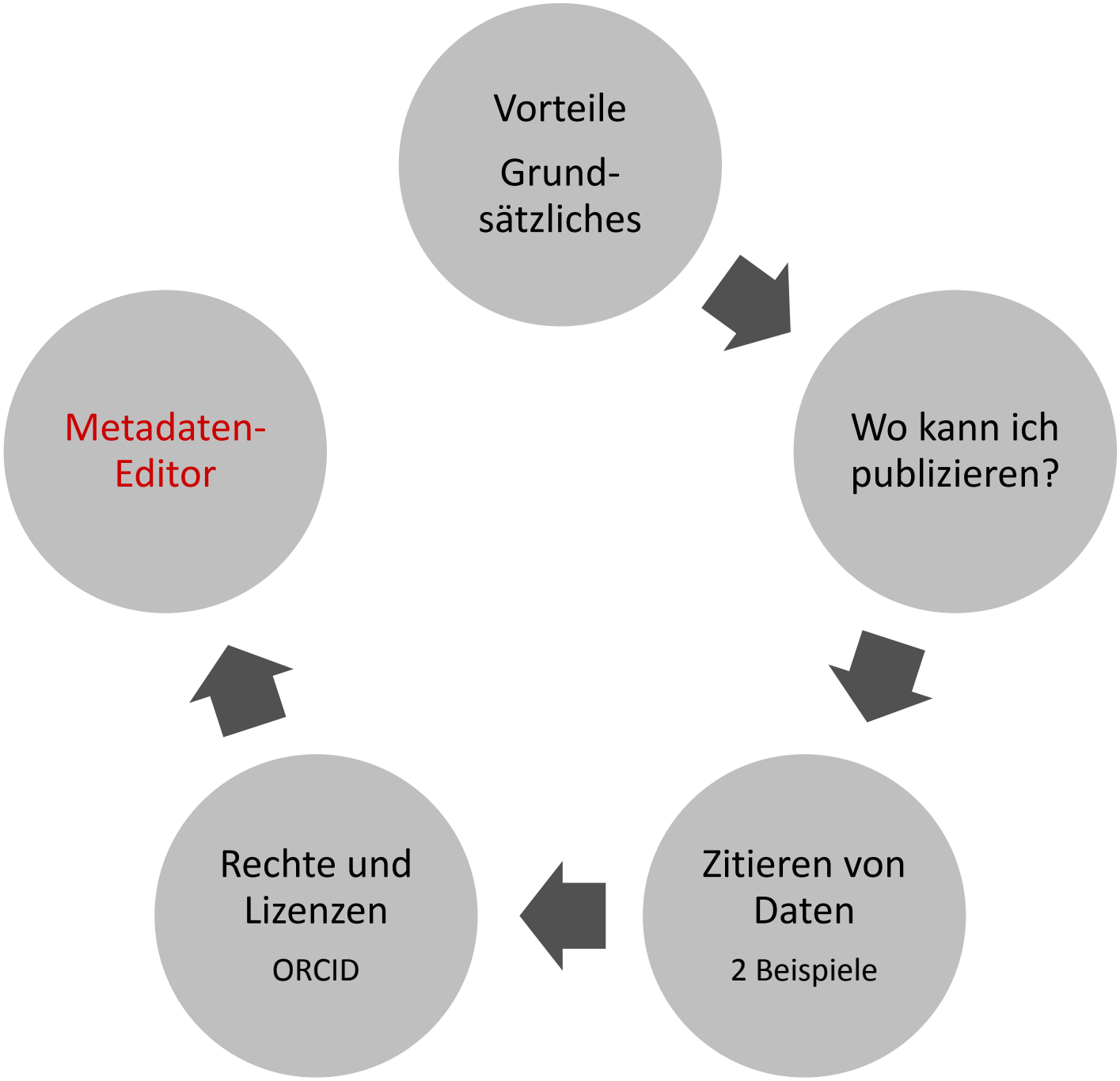
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