

Introduction to data publications and IGSN

The screenshot shows the homepage of GFZ Data Services. At the top is a navigation menu with links: Home, Find, Publish Data, Samples, Support, Glossary, Data Management, About Us, Search, and Logout. Below the menu is a header section with the title "Welcome to GFZ Data Services" and a paragraph of introductory text. A prominent blue "Submit Data" button is on the left, and a search bar with the placeholder text "Search for datacenters, science keywords" is on the right. Below these elements is a grid of hexagonal images representing various scientific fields, with "Atmosphere" and "Geomagnetism" labeled.

Home Find Publish Data Samples Support Glossary Data Management About Us Search Logout

Welcome to GFZ Data Services

GFZ Data Services is a research data repository for DOI-referenced data and scientific software from the Geosciences domain, hosted at GFZ German Research Centre for Geosciences. Furthermore, GFZ Data Services hosts the GFZ Catalogue for the International Geo Sample Number IGSN and developed RI@GFZ - the GFZ Data and Research Infrastructure Portal.

Submit Data

Search for datacenters, science keywords

Atmosphere

Geomagnetism

Kirsten Elger



Specialised Information Service for Geosciences

promoting Open Science in Geosciences



E-Publishing

Electronic publishing of institutional literature not released in publishing houses as well as pre- and postprints of research articles.



Research Data

Electronic publishing of curated research data via a domain repository for the Geosciences.



Digitisation

Digitisation on demand of literature and maps in the public domain, out of print, or on behalf of the publishing institutions or societies.



Melanie Lorenz



Kirsten Elger



Marcel Meistring

Open data – an international request

G8 UK
UNITED KINGDOM 2013

G8 OPEN DATA CHARTER

Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003): „*Open access contributions include original scientific research results, raw data and metadata, source materials, digital representations of pictorial and graphical materials and scholarly multimedia materials.*”

→ following the **FAIR Principles*** for Research Data Management

FAIR Principles

Findable



Accessible



Interoperable



Reusable



Tsukuba Communiqué

G7 Science and Technology Ministers' Meeting in



Government of Canada

Gouvernement du Canada

Jobs

Immigration

Travel

Business

Benefits

Home → Open Government → About Open Government → G8 Open Data Charter – Canada's Action Plan

G8 Open Data Charter – Canada's Action Plan

H2020 Programme



Guidelines on

FAIR Data Management in Horizon 2020



Deutsche Forschungsgemeinschaft

Guidelines on handling of research data

GFZ

Helmholtz-Zentrum
POTSDAM

*Wilkinson et al., 2016 <https://doi.org/10.1038/sdata.2016.18>

HELMHOLTZ

→ DFG promotes Open Access papers, open data, open source software

- **Research data includes** measurement data, laboratory values, audiovisual information, texts, survey or observation data, methodological test procedures and questionnaires. Compilations and simulations can likewise constitute a key outcome of academic research and are therefore also included under the term research data
- **DFG expects research projects to include a description of how research data is handled.** The description should be based on the checklist for handling research data. **The recommendation is that contact should be established as early as possible** during the project planning phase **with a research data centre or repository** where the research data can be deposited.
- **Making research data available**, developing methods and standards and building data infrastructures **are important contributions to the re-use of research findings as well as integrated part of the good research practice** and should be listed as part of a researcher's preliminary work or academic profile.

Publisher/Journal requirements for Open Science

SPRINGER NATURE

Reporting standards and availability of data, materials, code and protocols

An inherent principle of publication is that others should be able to replicate and build upon the authors' published claims. A condition of publication in a Nature Portfolio journal is that **authors are required to make materials, data, code, and associated protocols promptly available to readers without undue qualifications**. Any restrictions on the availability of materials or information must be disclosed to the editors at the time of submission. Any **restrictions must also be disclosed** in the submitted manuscript.



AGU requires that the **underlying data** needed to understand, evaluate, and build upon the reported research **be available at the time of peer review and publication**. Additionally, authors should make available **software** that has a significant impact on the research. This entails:

1. Depositing the data and software in a **community accepted, trusted repository**, as appropriate, and preferably with a DOI
2. Including an Availability Statement as a separate paragraph in the Open Research section explaining to the reader where and how to access the data and software
3. And including **citation(s)** to the deposited data and software, in the Reference Section.

Data Publications – best practice for FAIR sharing data

Publication of datasets as individual publications (with assigned persistent Identifier, e.g., DOI) through research data repositories

Research Data Repositories

- Permanent archives and access points to research data
- **institutional**, **general**, **domain**
- Ideally open access
- persistent identifier (ideally DOI)



“Domain repositories: These repositories **provide quality and standards** [for their domain], **enriching and organizing data** from multiple sources **to facilitate new discoveries**. They are in many ways the **best stewards of the data** but are not currently well connected with most publishers, and many data are thus not finding their proper home.”

Data Publications – best practice for FAIR sharing data

Publication of datasets as individual publications (with assigned persistent Identifier, e.g., DOI) **through domain repositories**

- **Findable:** integration of standardised machine readable metadata in external data portals (e.g. DataCite, B2Find, Google Dataset Search)
- **Accessible:** via DOI, persistent data storage and access guaranteed by the publisher (= data repository)
- **Documented:** with metadata for discovery and reuse → curation
- **Citable:** DOI-referenced datasets are citable just as journal articles (→ credit for researcher and institution)

How do I cite a dataset?

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).

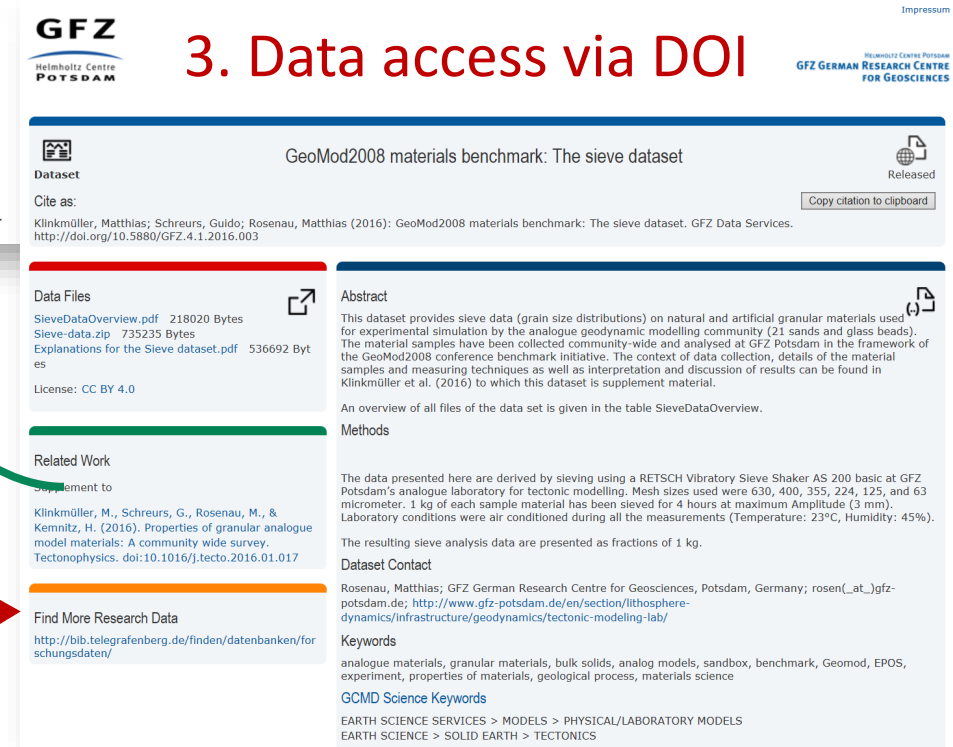
References

- 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>.

Link to paper

1. Citation in the text

3. Data access via DOI



GFZ
Helmholtz Centre
POTSDAM

GeoMod2008 materials benchmark: The sieve dataset

Released

Copy citation to clipboard

Cite as:
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.

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.

Dataset Contact

Rosenau, Matthias; GFZ German Research Centre for Geosciences, Potsdam, Germany; [rosen\(at\)_gfz-potsdam.de](mailto:rosen(at)_gfz-potsdam.de); <http://www.gfz-potsdam.de/en/section/lithosphere-dynamics/infrastructure/geodynamics/tectonic-modelling-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

2. Full reference with DOI in the References

What do I need for a data publication?

- Data
- Metadata

Contextual Metadata

highly variable
between the
disciplines but key
information for
data reuse

README

Datei Bearbeiten Format Ansicht ?
AVERTISSEMENT / WARNING
 Même si des efforts sont déployés pour
 Although efforts are made to ensure the
AUTEUR(S) / AUTHOR(S)
 Centre d'études nordiques
RÉSUMÉ / SUMMARY
 Les données de ce numéro de Nordica
 The datasets in this issue of Nordica
CITATION DES DONNÉES / DATA CITATION
 CEN 2014. Données environnementales
 CEN 2014. Environmental data from
SITE(S)
 Nom / Name
 Ellesmere Parks Canada (ELLEPAR) 83.09396
DESCRIPTION
 SITE: Ellesmere Parks Canada (ELLEPAR)
 Profondeurs des / températures de sol (m) / Ground temperature depth range (m): 0.20
MESURE(S) / MEASUREMENT(S)
 TYPE: Température moyenne du sol (Degré celsius (°C)) / Average ground temperature (Degree Celsius (°C))

Definition of data labels

Metadata of the Data Tables

Sites

	Column Name	Data Type	Description	Validation Text	Unit
1	EXPEDITION	Numeric	expedition number	integer value	#
2	SITE	Numeric	site number	integer value	#
3	NAME	Text	site name or locality	text string of max. 40 characters	#
4	PLATFORM	Text	platform identifier, C=Chikyu, J=Joides, M=Mission Specific, R=Drill Rig	text string of max. 1 character	#
5	LATITUDE_DEG	Integer	decimal degrees of site latitude (latitude of hole 'A')	integer value between 0 and 90	deg.
6	LATITUDE_MIN	Double	decimal minutes of site latitude (latitude of hole 'A')	real value	min.
7	LATITUDE_DIR	Text	direction latitude	text string of max. 1 character	#
8	LONGITUDE_DEG	Integer	decimal degrees of site longitude (longitude of hole 'A')	integer value between 0 and 180	deg.
9	LONGITUDE_MIN	Double	decimal minutes of site longitude	real value	min.
10	LONGITUDE_DIR	Text	direction site longitude	text string of max. 1 character	m
11	DATE_START	Date	date of site start	date in UTC	dd-mmm-yyyy
12	DATE_END	Date	date of site end	date in UTC	dd-mmm-yyyy

Data Articles/ Reports



Metadata for data discovery: example DOI Landing Page

title citation

download data

key paper

related work

GFZ DATA SERVICES
GEOSCIENCES DATA PUBLISHER

Dataset Data from distributed temperature sensing (DTS) measured along a fiber optic cable permanently installed behind casing in well RN-15/DEEPEGS/IDDP-2, Iceland

Cite as:
Lipus, Martin Peter; Reinsch, Thomas (2021): Data from distributed temperature sensing (DTS) measured along a fiber optic cable permanently installed behind casing in well RN-15/DEEPEGS/IDDP-2, Iceland. GFZ Data Services. <https://doi.org/10.5880/GFZ.6.2.2018.0>

Files
Download data and description
License: CC BY 4.0
End of moratorium: 2020-06-31

Abstract
The fiber optic cable was installed down to 832 m behind the production casing of a 9 5/8" (445-2932 m) and 9 7/8" (0 - 445 m) production casing in well RN-15/DEEPEGS/IDDP-2 in the Reykjanes geothermal field, SW Iceland (depth reference: surface). Fiber optic distributed temperature data was acquired (campaign based) during cementation (09/2016) of the production casing, at the end of the cold fluid injection (09/2018) as well during the onset of well stimulation (10/2019-04/2020).

Authors
Lipus, Martin Peter; GFZ German Research Centre for Geosciences, Potsdam, Germany
Reinsch, Thomas; GFZ German Research Centre for Geosciences, Potsdam, Germany; Fraunhofer IEG, Fraunhofer Research Institution for Energy Infrastructures and Geothermal Systems IEG, Bochum, Germany

Contact
Lipus, Martin (Researcher) : GFZ German Research Centre for Geosciences, Potsdam, Germany; →

Contributors
Cunow, Christian; Raab, Tobias; Lipus, Martin

Keywords
permanent temperature monitoring, cementation, energy > energy source > renewable energy source, industrial process > drilling
GCMD Science Keywords
EARTH SCIENCE > SOLID EARTH > GEOTHERMAL DYNAMICS > GEOTHERMAL ENERGY
EARTH SCIENCE > SOLID EARTH > GEOTHERMAL DYNAMICS > GEOTHERMAL TEMPERATURE
EARTH SCIENCE > SOLID EARTH > GEOTHERMAL DYNAMICS > GEOTHERMAL TEMPERATURE > TEMPERATURE PROFILES

More Metadata
datacite: [view inline](#) / [download xml](#)
iso19115: [view inline](#) / [download xml](#)

Location
Click/hover over markers or bounding boxes to see related details. Click/hover over details to see related marker or bounding box.

description/abstract

authors/ ORCID

keywords/control-
led vocabularies

spatial coverage

Essential for data discovery, DOI registration, etc: international standards across all disciplines

Typical metadata standards for data discovery:
DataCite, ISO19115, Dublin Core

Tools for data publications by GFZ Data Services

1. Discovery Metadata: via GFZ Metadata Editor

The screenshot displays the GFZ Metadata Editor interface. At the top, there are tabs for 'Discovery Metadata', 'ISO19115 Metadata', 'Files', and 'Related Publications'. The 'Discovery Metadata' tab is active, showing a form with the following sections:

- Resource Information:** Includes fields for 'DOI will be generated in the publishing process', 'Publisher' (GFZ DATA SERVICES), 'Year' (2020), 'Resource Type' (Dataset), 'Title' (Supplement to: The New World Atlas of Artificial Night Sky Brightness), and 'Language of Subject' (eng).
- License and Rights:** Includes a 'License' field with the text 'Please contact the authors for a license agreement'.
- Authors (Persons and/or Institutions):** A table listing authors with columns for 'Author (Lastname, Firstname)', 'Role', 'Author ID Type', 'Author Identifier (ID)', and 'Affiliation'. The authors listed are:
 - Di Lorenzo, Mariateresa (ISTIL - Istituto di Scienze e Tecnologia ...)
 - Durkin, Dan (National Park Service, U.S. Department ...)
 - Kubi, Christopher C. M. (GFZ German Research Centre for Geo ...)
 - Prada, Christopher D. (Earth Observation Unit, NOAA NESDIS ...)
 - Beauf, Kimberly (Cooperatives Institute for Research in B ...)
 - Porter, Beala (Department of Natural Resources & En ...)
 - Rytkiewski, Katalya J. (Department of Natural Resources & En ...)
 - Furzer, Riccardo (ISTIL - Istituto di Scienze e Tecnologia ...)
- Contact Person(s) / Point of Contact:** A field at the bottom of the form.

GFZ Metadata Editor (Java Script „translator“)

Input: provided by researchers

Output: XML (Extensible Markup Language): Metadata exchange format

The screenshot displays the GFZ Metadata Editor interface. On the left, the 'Input' section shows various metadata fields:

- DataCite Metadata** tab selected.
- Resource Information:** DOI (will be generated in the publishing process) 10.5880/GFZ.1.4.2016.001, Resource Type: Dataset, Title: Supplement to: The New World Atlas of Artificial Night Sky Brightness.
- Licenses and Rights:** Licence: Attribution-NonCommercial 4.0 International (CC BY-NC 4.0).
- Authors (Persons and/or Institutions):** Table with columns: Lastname, Firstname, Role, Author ID Type. Authors include Falchi, Cinzano, Duriscoe, Kyba, Ehidge, Baugh, Portnov, Rybnikova, and Furgoni.
- Contact Person(s) / Point of Contact:** night, radiative transfer, Suomi NPP, Sky Quality Meter.
- Temporal and Spatial Coverage:** Table with columns: Latitude (Min, Max), Longitude (Min, Max). Values: 44.045486..., 55.842428..., 2.8710901..., 43.124996...

On the right, the 'Output' section shows the generated XML metadata in a tree view:

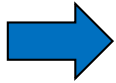
```
iso19115: close inline view / download xml
o MD_Metadata (xsi:schemaLocation=http://www.isotc211.org/2005/gmd http://www.isotc211.org/2005/gmd/gmd.xsd)
  ■ fileIdentifier
    ■ CharacterString: doi:10.5880/igets.po.11.001
  ■ language
    ■ LanguageCode (codeList=http://www.loc.gov/standards/iso639-2/ codeListValue=eng): eng
  ■ characterSet
    ■ MD_CharacterSetCode (codeList=http://www.isotc211.org/2005/resources/codeList.xml#MD_CharacterSetCode codeListValue=utf8):
  ■ hierarchyLevel
    ■ MD_ScopeCode (codeList=http://www.isotc211.org/2005/resources/Codelist/gmx-Codelists.xml#MD_ScopeCode codeListValue=):
  ■ hierarchyLevelName
    ■ CharacterString:
  ■ contact
    ■ CI_ResponsibleParty
      ■ organisationName
        ■ CharacterString: GFZ German Research Center for Geosciences
      ■ contactInfo
        ■ CI_Contact
          ■ address
            ■ CI_Address
              ■ electronicMailAddress
                ■ CharacterString:
          ■ onlineResource
            ■ CI_OnlineResource
              ■ linkage
                ■ URL: http://www.gfz-potsdam.de/
              ■ function
                ■ CI_OnLineFunctionCode (codeList=http://www.isotc211.org/2005/resources/Codelist/gmxCodelists.xml#CI_OnLineFunctionCode cc
            ■ role
              ■ CI_RoleCode (codeList=http://www.isotc211.org/2005/resources/Codelist/gmxCodelists.xml#CI_RoleCode codeListValue=pointOfContact): pointOfContact
          ■ dateStamp
            ■ Date: 2017-01-06
          ■ referenceSystemInfo
            ■ MD_ReferenceSystem
              ■ referenceSystemIdentifier
                ■ RS_Identifier
                  ■ code
                    ■ CharacterString: urn:ogc:def:crs:EPSG:4326
          ■ identificationInfo
            ■ MD_DataIdentification
              ■ citation
```

Access via: <https://dataservices.gfz-potsdam.de/portal/> → Submit Metadata

GFZ Metadata Editor (Java Script „translator“)

Input:

provided by researchers



The screenshot shows the GFZ Metadata Editor interface with the following sections:

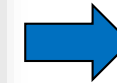
- Resource Information:**
 - DOI (will be generated in the publishing process): 10.5880/GFZ.1.4.2016.001
 - Publisher: GFZ Data Services
 - Year: 2016
 - Resource Type: Dataset
 - Title: Supplement to: The New World Atlas of Artificial Night Sky Brightness
 - Language of dataset: eng
- Licenses and Rights:**
 - Licence: Attribution-NonCommercial 4.0 International (CC BY-NC 4.0)
 - Rights URI: https://creativecommons.org/licenses/by-nc/4.0/
- Authors (Persons and/or Institutions):**

Lastname	Firstname	Role	Author ID Type	Author Identifi...	Affiliation	Affiliation2	Affiliation3
Falchi	Fabio		ORCID	0000-0002-3706-...	ISTIL - Istituto di...		
Cinzano	Pierantonio				ISTIL - Istituto di...		
Duriscoe	Dan				National Park S...		
Kyba	Christopher C. M.		ORCID	0000-0001-7014-...	GFZ German Re...		
Ehidge	Christopher D.		ORCID	0000-0003-0584-...	Earth Observatio...		
Baugh	Kimberly		ORCID	0000-0002-3548-...	Cooperative Insti...		
Portnov	Boris		ORCID	0000-0003-1537-...	Department of N...		
Rybnikova	Nataliya A.		ORCID	0000-0002-3135-...	Department of N...		
Furgoni	Riccardo				ISTIL - Istituto di...		
- Contact Person(s) / Point of Contact:**
 - night
 - radiative transfer
 - Suomi NPP
 - Sky Quality Meter
- Temporal and Spatial Coverage (The EDIT-symbol to the left provides vi...):**

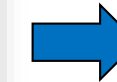
Latitude		Longitude	
Min	Max	Min	Max
44.045486...	55.842428...	2.8710901...	43.124996...
- Interactive Map:** A map showing a selected region in Europe with a red border. The map includes labels for countries like Deutschland, Polen, and Rumänien.

Output:

Standardised XML files (Datacite, ISO 19115, Dublin Core)



DOI Landing Pages



Data Catalogue



Standardised API



„Special“ Features:

- Interactive map
- Searchable vocabulary lists

Access via: <https://dataservices.gfz-potsdam.de/portal/> → Submit Metadata

Tools for data publications by GFZ Data Services

1. Discovery Metadata: via GFZ Metadata Editor
2. Contextual Metadata: via **Data Description Templates**
(or **data reports**)

Paleosol-derived data used for the reconstruction of environmental conditions during the Holocene in the upper part of the Kali Gandaki valley, Central Nepal
(<http://doi.org/10.5880/GFZ.4.6.2019.001>)

Johanna Menges¹, Niels Hovius², Christoff Andermann¹, Michael Dietze¹, Charlie Swoboda¹, Kristen Cook¹, Basanta Adhikari², Andrea Vieth-Hillebrand¹, Stephane Bonnet³, Tony Reimann⁴, Andreas Koutsodendris³, Dirk Sachse¹

1. *GFZ German Research Centre For Geosciences, Telegrafenberg, 14473 Potsdam, Germany*
2. *Department of Civil Engineering, Pulchowk Campus, Institute of Engineering, Tribhuvan University, Nepal*
3. *GET CNRS Univ Toulouse, UMR 5563, Toulouse, France*
4. *Soil Geography and Landscape group & Netherlands Centre for Luminescence dating, Wageningen University, The Netherlands*
5. *Heidelberg University Institute of Earth Sciences, Heidelberg, Germany*

Data Description Templates

Available in
„commented“ and
„usable“ form

- Many users are unaware of what a data publication represents and what to include in description
 - Increase the quality of metadata
 - Reduces curation workload
 - Uniform format aids comprehension
- Template via gfzpublic
(https://gfzpublic.gfz-potsdam.de/pubman/item/item_5007103)

Paleosol-derived data used for the reconstruction of environmental conditions during the Holocene in the upper part of the Kali Gandaki valley, Central Nepal
(<http://doi.org/10.5880/GFZ.4.6.2019.001>)

Johanna Menges¹, Niels Hovius¹, Christoff Andermann¹, Michael Dietze¹, Charlie Swoboda¹, Kristen Cook², Basanta Adhikari², Andrea Vieth-Hillebrand², Stephane Bonnet³, Tony Reimann⁴, Andreas Koutsodendris⁵, Dirk Sachse¹

1. GFZ German Research Centre For Geosciences, Telegrafenberg, 14473 Potsdam, Germany
2. Department of Civil Engineering, Pulchowk Campus, Institute of Engineering, Tribhuvan University, Nepal
3. GET CNRS Univ Toulouse, UMR 5563, Toulouse, France
4. Soil Geography and Landscape group & Netherlands Centre for Luminescence dating, Wageningen University, The Netherlands
5. Heidelberg University Institute of Earth Sciences, Heidelberg, Germany

1. Licence

Creative Commons Attribution 4.0 International License (CC BY 4.0)



2. Citation

These data are freely available under the Creative Commons Attribution 4.0 International License (CC BY 4.0).

When using the data please cite:

Menges, J.; Hovius, N.; Andermann, C.; Dietze, M.; Swoboda, C.; Cook, K.; Adhikari, B.; Vieth-Hillebrand, A.; Bonnet, S.; Reimann, T.; K., Andreas; Sachse, D. (2019): Paleosol-derived data used for the reconstruction of Holocene environmental conditions during in the upper Kali Gandaki valley, Central Nepal. GFZ Data Services. <http://doi.org/10.5880/GFZ.4.6.2019.001>

The data are supplementary to:

Menges, J., Hovius, N., Andermann, C., Dietze, M., Swoboda, C., Cook, K. L., ... Sachse, D. (2019). Late

1. Licence
2. Citation
3. Data Description
 - Sampling method
 - Analytical procedure
 - Data processing
4. File description
 - File inventory
 - File naming convention
 - Description of data tables
5. References

Tools for data publications by GFZ Data Services

1. Discovery Metadata: via GFZ Metadata Editor
2. Contextual Metadata: via Data Description Templates (or data reports)

3. Data Discovery and access via the Data Portal

<https://dataservices.gfz-potsdam.de>



The screenshot displays the GFZ Data Services Data Portal interface. At the top, the GFZ logo and 'GFZ DATA SERVICES' are visible. Below the header, there is a search bar and a spatial filter section. The search results are displayed in a list format, with each entry including a map thumbnail, a title, authors, and an abstract. The first result is 'ESA's Release 6 GOCE gravity field model by means of the direct approach based on improved filtering of the reprocessed gradients of the entire mission (GO_CONS_GCF_2_DIR_R6)'. The second result is 'Revised dataset of known faults in Italy'. The third result is 'Temporary passive seismic data acquired at Rittershoffen geothermal field Alsace, France, 2013-2014 (TOPASE) - Datasets'. The interface also includes a 'Current Selection' section and a 'Datacenters' list.

GFZ Data Services

Profile

- Domain repository for the Geosciences since 2006
- DOIs for Data and software
- Data: real-time data streams, tables, maps, model data, ...
- Online metadata editor
- Data description templates
- Data curation by domain scientists

<https://dataservices.gfz-potsdam.de>

FAIR data

- International metadata standards (human & machine readable)
- Controlled vocabularies for „rich“ metadata

- PIDs       in prep

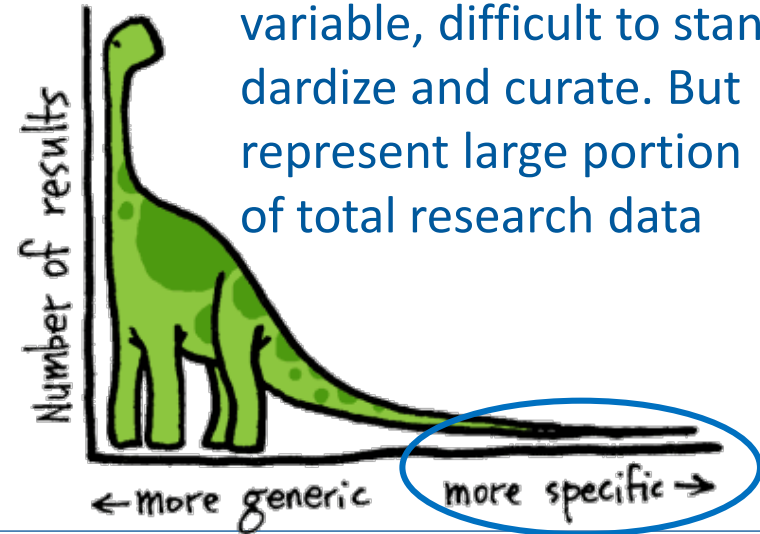
- Open Licences for data and software
- OAI-PMH interface
- schema.org → Google Dataset Search

GFZ Data Services: Profile

Focus:

1. curation of long-tail data

long-tail data: small in size, highly variable, difficult to standardize and curate. But represent large portion of total research data

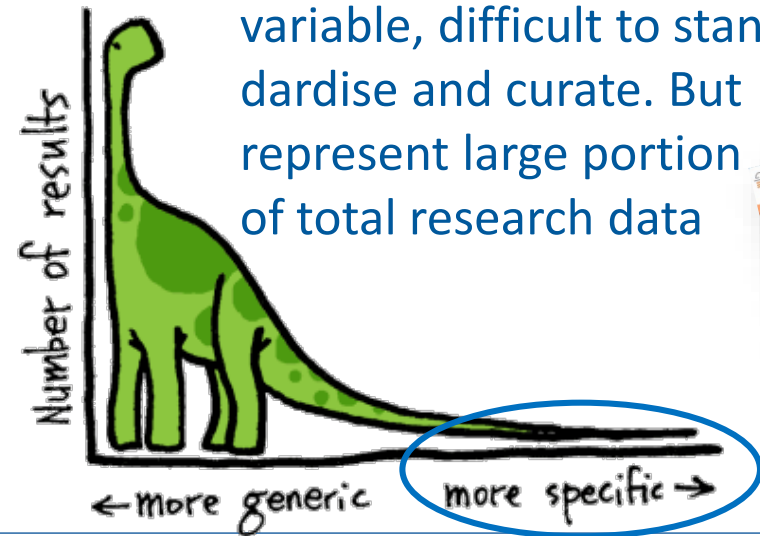


GFZ Data Services: Profile

Focus:

1. curation of long-tail data
2. DOI minting services for global monitoring networks/observatories in geodesy and geophysics and collaborative projects.

long-tail data: small in size, highly variable, difficult to standardise and curate. But represent large portion of total research data



Different layouts for DOI Landing Pages

Special Features: „Data in Review“ Links

- Link: <https://dataservices.gfz-potsdam.de/panmetaworks/review/9c5de649b6b30c588f9fecad56a1c71dd56d1fb4f68ada89b9340002ff84abb7/>
- Allows access to still unregistered data (for review purposes)
- DOI is reserved and citable
- Data can still be changed
- DOI registration when paper is accepted



JOURNAL REQUIREMENTS

GFZ DATA SERVICES
GEOSCIENCES DATA PUBLISHER

Dataset Chemical (EPMA) and boron isotope (SIMS) analyses on tourmaline breccias from the Río Blanco-Los Bronces porphyry copper district, Chile Released

Status
IN REVIEW: Hohf, Michael; Trumbull, Robert (2022): Chemical (EPMA) and boron isotope (SIMS) analyses on tourmaline breccias from the Río Blanco-Los Bronces porphyry copper district, Chile. GFZ Data Services. <https://doi.org/10.5880/GFZ.3.1.2022.002>

Files
[Download data and description](#)
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Related Work

Cites
Catanzaro, E.J., Champion, C.E., Garner E. L., Marienko, O., Sappenfield, K.M., and Shields, W.R., 1970, Boric acid: isotopic and assay standard reference materials: US NBS Special Publication 216-17, 70pp. <https://nvlpubs.nist.gov/nistpubs/Legacy/SP/nbspecialpublication260-17.pdf>
Dyar, M. D., Wiedenbeck, M., Robertson, D., ...
Freiberg and O...
Frederic Couffign...

Make Data FAIR
AGU100
Interoperable
Reusable

IGSN – International Generic Sample Number

- Globally unique identifier for physical samples and materials
- Closing the last gap for the full provenance of research results
- IGSN links to the online sample description (link, QR Code)
- For individual and hierarchical samples (e.g. drilling projects)
- IGSN are citable in papers and data publications



General Identifiers

Program:	ICDP
Expedition:	ICDP 5054
Type:	Core
Name:	5054_1_A_3_Z
IGSN:	ICDP5054EC4Q001 (Open)
Parent IGSN:	ICDP5054EEW1001
Release Date:	2017-3-1

Sampling Location

Latitude:	63.4063
Longitude:	13.203057
Coordinate System:	WGS84
Elevation:	415.74
Final Depth:	412.61
Location Type:	N/A
Location Name:	Åre, Jämtlands län, Sweden
Location Description:	COSC-1 is located in the vicinity of the abandoned Fröå mine
Country:	Sweden
Province:	Jämtlands län
County:	N/A
City:	Åre

Geology

Material:	Rock
Rock Classification:	N/A
From Corrected Depth:	106.26
To Corrected Depth:	109.39
Depth Reference:	meter below ground level
Geological Age:	mid-paleozoic
Geological Unit:	N/A

Methods

MSCL	yes
XRF	yes
Lithological Description	yes
Core Overview	yes
Core Section Scan	yes
Core Catcher Scan	no

Drilling

Drilling Method:	Coring>RockCorer wireline diamond coring, HQ and NQ bit size
Operator:	Lund University, Engineering Geology Larsson Drilling Consulting AB
Funding Agency:	Swedish Research Council (Vetenskapsrådet)
Total Length:	2400.1m
Comments:	N/A
Platform Type:	drill rig

Sample Family

- 5054_1_A_1_Z
- 5054_1_A_2_Z
- 5054_1_A_3_Z
 - 5054_1_A_3_Z_1
 - 5054_1_A_3_Z_2
 - 5054_1_A_3_Z_3
 - 5054_1_A_3_Z_4

Publications & Datasets

Lorenz, H., Rosberg, J.-E., Juhlin, C., Bjelm, L., Almqvist, B. S. G., Berthet, T., ... Tsang, C.-F. (2015). COSC-1 – drilling of a subduction-related allochthon in the Palaeozoic Caledonide orogen of Scandinavia. *Sci. Dril.*, 19, 1–11. doi:10.5194/sd-19-1-2015

Lorenz, Henning; Rosberg, Jan-Erik; Juhlin, Christopher; Bjelm, Leif; Almqvist, Bjarne; Berthet, Théo; Conze, Ronald; Gee, David G.; Klonowska, Iwona; Pascal, Christophe; Pedersen, Karsten; Roberts, Nick; Tsang, Chinfu; (2015): COSC-1 operational report - Operational data sets; GFZ Data Services. <http://dx.doi.org/10.1594/GFZ.SDDB.ICDP.5054.2015>

Persistent Identifier (PID) in data publications



for data, software,
cross-references to
related work

<https://doi.org/10.5880/fidgeo.2021.049> (Data)



PID for physical samples,
cross references to
samples underlying
measurements

<https://igsn.org/GFFJH00AD> (Rock sample)



uniquely identifying
persons

<https://orcid.org/0000-0002-1890-3940> (Max Wilke)



Crossref
Funder Registry

List of funders with DOIs

<http://doi.org/10.13039/501100001659> (DFG)



New PID for Institutions

<https://ror.org/03bnmw459> (Potsdam University)

→ PIDs ARE RESOLVABLE AND MACHINE-READABLE

PIDs and the provenance of research outcome

data

Table S3. Sierra Nevada analyses of plant samples

sample ID	IGSN	brief sample description	Element concentrations (µg/g)						
			Al	Fe	Mn	Mg	Ca		
MW1									
MW2									
MW3									
MW4									
mean (2SE)									

Table SN1. Sierra Nevada analyses of soil, saprolite, rock, bedload sediment and

sample ID	IGSN	sample type	XRF lab	depth (cm)	Major element oxides (wt%) (C)			
					SiO ₂	TiO ₂	Al ₂ O ₃	Fe ₂ O ₃
<i>P301 regolith depth profile</i>								
SN01 *	GFFB1002I	bulk soil	GFZ	7	36.2	0.55	11.4	3.88
SN02 *	GFFB1002U	bulk soil	GFZ	20	49.3	0.71	14.9	4.84
SN02c *	GFFB1002U	exchangeable soil	-	20	n.a.	<lod	0.00	0.00
SN02r *	GFFB1002U	residuum soil	-	20	n.a.	0.84	14.3	5.68
SN03 *	GFFB1002V	bulk soil	GFZ	30	57.5	0.88	17.6	6.44
SN04 *	GFFB1002R	bulk soil	GFZ	39	56.6	0.93	17.7	6.85
SN04e *	GFFB1002R	exchangeable soil	-	39	n.a.	<lod	0.00	0.00
SN04r *	GFFB1002R	residuum soil	-	39	n.a.	0.91	15.1	6.95



sample

Sample description

Data publication

papers



PIDs connect everything → FAIR


DOME and GFZ Data Services?

- DFG Requirement: Open Science
- Data publications timely correlated with Papers
- DOME Datacentre and Layout
- Examples for each data type (data description templates and meta-data element)
- Data tables aligned with intern. standards (OneGeochemistry, Georoc, EarthChem)

→ Long-term data availability and access granted by GFZ Data Services

 SPP 2238 - Dynamics of Ore Metals Enrichment - DOME


Dataset Microprobe measurements of PGM, pristine and secondary phases of samples of the Merensky Reef, Bushveld Complex, South Africa 

Status
IN REVIEW; Korges, Maximilian; Junge, Malte; Borg, Gregor; Oberthür, Thomas (2022): Microprobe measurements of PGM, pristine and secondary phases of samples of the Merensky Reef, Bushveld Complex, South Africa. GFZ Data Services. <https://doi.org/10.5880/fridgeo.2022.014>

Files 
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Abstract 
Platinum-group elements (PGE) in the Bushveld Complex (South Africa) are mainly recovered from pristine, unweathered ores of the Merensky Reef, UG-2, and the Platreef. Weathered PGE ores are currently not mined due to uneconomic recovery rates achieved by conventional metallurgical methods although weathered ores can contain a high PGE content. In order to understand the behavior of PGE during weathering, five drill cores containing fresh and weathered Merensky Reef (originating from the Twickenham and Richmond properties of AngloPlatinum in the eastern Bushveld Complex), were studied by microprobe.

Dataset Description
Supplement to
Korges, M., Junge, M., Borg, G., & Oberthür, T. (2021). Supergene mobilization and redistribution of platinum-group elements in the Merensky Reef, eastern Bushveld Complex, South Africa. In *The Canadian Mineralogist* (Vol. 59, Issue 6, pp. 1281–1295). Mineralogical Association of Canada.

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