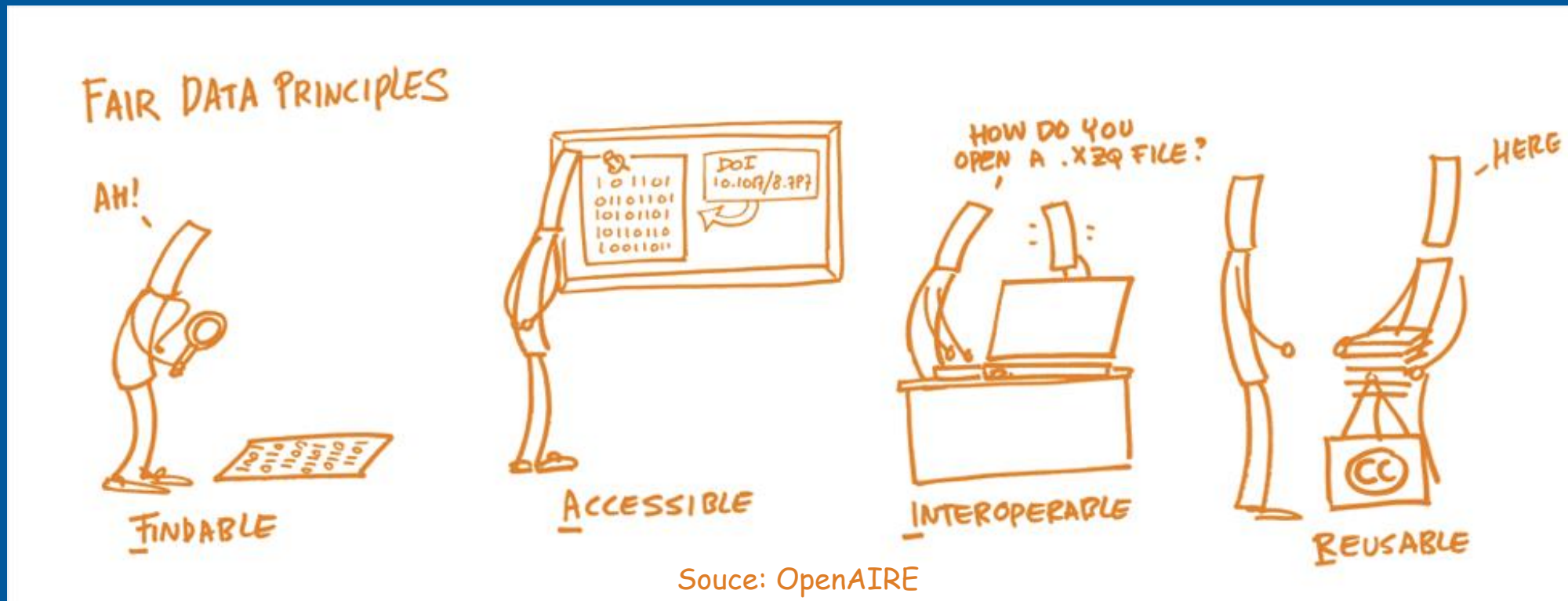


Wie wichtig ist die Dokumentation für die Nachnutzbarkeit von Forschungsdaten und wie werden meine Daten sichtbar? Beispiele von GFZ Data Services



FAIR im Long-Tail – Beispiele von GFZ Data Services

FAIR Principles

Findable



Accessible



Interoperable



Reusable



FAIR for Humans and Machines

“One of the grand challenges of data-intensive science, ... is **to improve knowledge discovery through assisting both humans, and their computational agents**, in the discovery of, access to, and integration and analysis of, task-appropriate scientific data and other scholarly digital objects.” (Wilkinson et al., 2015, <https://doi.org/10.1038/sdata.2016.18>)



– Reusable – Strategien im long-tail



– Findable: Nutzung von PIDs

Data Publications – best practice for FAIR sharing data

Publication of datasets as individual publications (with assigned persistent Identifier; DOI) **through data repositories** (ideally **domain repositories**)



- **Findable:** PID, standardised machine readable metadata, controlled vocabularies: discovery via portals and search engines,



- **Citable:** DOI-referenced datasets are citable just as journal articles (→ credit for researcher and institution)



- **Accessible:** via DOI/ PID, persistent data storage and access guaranteed by the publisher (= data repository)






- **Interoperable:** machine-readable data and metadata

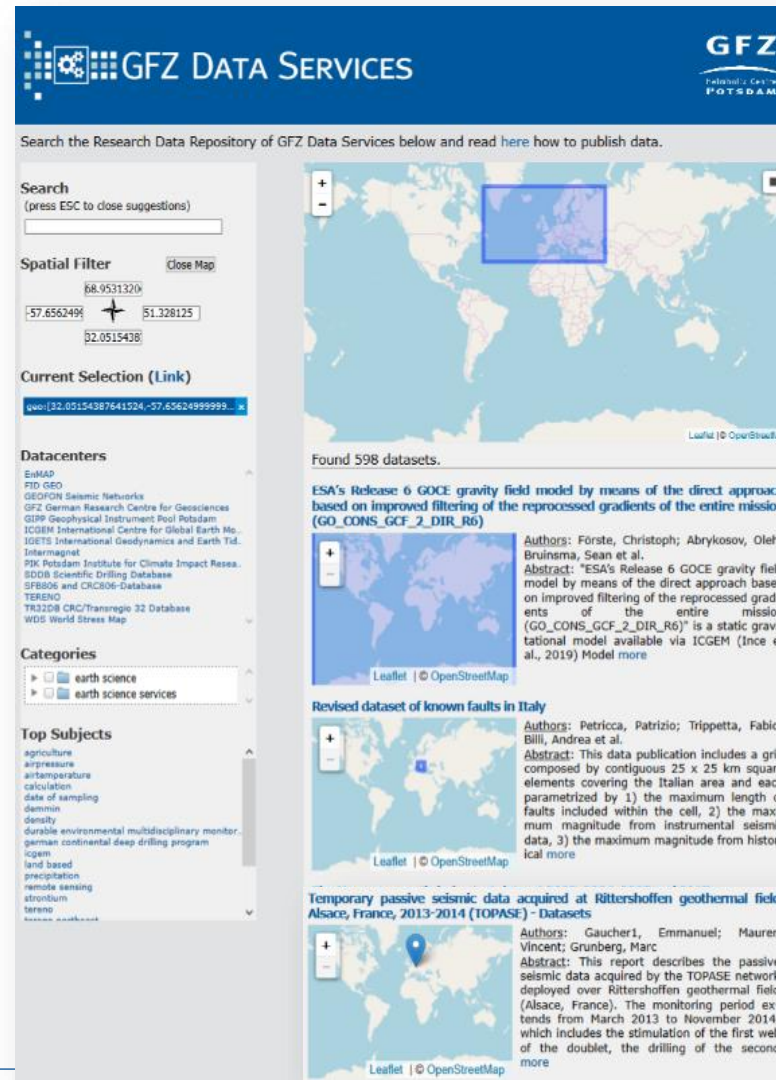


- **Documented:** with metadata for discovery and reuse, licence












GFZ Data Services – domain repository

Profile

- Domain repository for the Geosciences
-  DOIs for Data and Software
- Data: real-time data streams (observational data), tables, maps, model data, ...
-  Data curation by discipline scientists
-  Data description templates, reports (internal review)



Technical „Highlights“

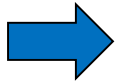
- International metadata standards (human & machine readable)  
- Vocabularies for „rich“ metadata  
- PIDs (DOI, ORCID, Fundref, IGSN)  
- Open Licences for data and software 
- OAI-PMH, Rest interface  
- schema.org →   Google Dataset Search

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

Tools 1: GFZ Metadata Editor (Java Script „translator“)

Input:

provided by researchers

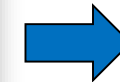


The screenshot shows the GFZ Metadata Editor interface with the following sections:

- DataCite Metadata** (selected tab)
- 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: Please contact the authors for a licence agreement.
- Authors (Persons and/or Institutions)**: Table with columns: Author (Lastname, Firstname), Role, Author ID Type, Author Identifier (ID), Affiliation. Authors listed include Cinzano, Pierantonio; Duriscoe, Dan; Kyba, Christopher C. M.; Elvidge, Christopher D.; Baugh, Kimberly; Portnov, Boris; Rybnikova, Nataliya A.; Furgoni, Riccardo.
- 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....
- Interactive Map**: "Select Region (click left mouse and drag)" showing a map of Europe with a red selection box over Germany and Poland.

Output:

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



DOI Landing Pages



Standardised API



„Special“ Features:

- Interactive map
- Searchable vocabulary lists

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

Data access via DOI Landing Pages

GFZ DATA SERVICES
GEOSCIENCES DATA PUBLISHER

Dataset Supplementary material for analogue experiments on the interactions of two indenters, and their implications for curved fold-and-thrust belts

Cite as:
Reiter, Karsten; Kukowski, Nina; Ratschbacher, Lothar; Rosenau, Matthias (2016): Supplementary material for analogue experiments on the interactions of two indenters, and their implications for curved fold-and-thrust belts. GFZ Data Services. <http://doi.org/10.5880/GFZ.4.1.2016.007>

Data Files

Explanations_Reiter-et-al-2016.pdf	527520 Bytes
list-of-files-Reiter-et-al-2016.pdf	238166 Bytes
Experimenting.avi	82477450 Bytes
gb70-sections.pdf	509078 Bytes
gb40-3Dview-30-34.avi	6096554 Bytes
gb50-3Dview-30-33.avi	5947146 Bytes
gb55-3Dview-30-32.avi	6397115 Bytes
gb60-3Dview-30-29.avi	6697512 Bytes
gb70-3Dview-30-30.avi	6247434 Bytes
gb80-3Dview-30-31.avi	6187996 Bytes
si60-3Dview-30-38.avi	5941054 Bytes
si60-3Dview-30-39.avi	6363148 Bytes
gb40-sections.pdf	412898 Bytes
gb50-sections.pdf	473232 Bytes
gb55-sections.pdf	423878 Bytes
gb60-sections.pdf	423225 Bytes
gb70-sections.pdf	441474 Bytes
gb80-sections.pdf	476282 Bytes
si60-sections.pdf	452883 Bytes
si60-sections.pdf	451505 Bytes
gb40-80-height.pdf	932749 Bytes
gb40-80-slope.pdf	1879608 Bytes

Abstract

This data publication includes animations and figures of eight scaled analogue models that are used to investigate the evolution of a curved mountain belt akin to the Pamir and Hindu Kush orogenic system and adjacent Tadjik basin. Crustal deformation is simulated by means of indentation of two basement blocks into a sedimentary sequence and the formation of a curved fold-and-thrust belt. The experimental set-up has two adjacent rigid indenters representing the basement blocks moving in parallel with a velocity difference (Figure 1). The slow indenter moves with a relative velocity ranging from 40 to 80% of that of the fast one. A layer of quartz sand in front of the indenters, 1 by 1 meter in size and 1.5 cm thick, represents the sedimentary basin infill. A basal detachment layer is made up of low-friction glass beads or viscous silicone oil representing weak shale or evaporates layers, respectively. The surface evolution by means of topography and strain distribution is derived from 3-D particle image velocimetry (PIV). This allows visualizing and analysing the development of the model surface during the complete model run at high spatio-temporal resolution. All details about the model set-up, modelling results and interpretation can be found in Reiter et al. (2011).

The here provided additional material includes time-lapse movies showing the topographic evolution of the eight models. These visualizations are oblique views played back at 60-fold velocity for the "glass beads experiment" (gb40 to gb80) and 3600-fold velocity for the "silicone experiment" (si60, si60b).

In addition to the experiment movies we provide a set of figures. The figures include surface views as well as cross-sections through the model, highlighting the evolution of topography and internal structure of the simulated curved fold-and-thrust belts. Additionally, attribute maps of distinct morphometric measures (curvature, slope) and deformation parameters (shear, horizontal translation) for the experiments with glass beads detachments are given. Finally, the movie "Experimenting.avi" shows in time-lapse the whole workflow of setting up, conducting and documenting an experiment, which originally required three days (for experiment si60b).

An overview on the parameters used in the experimental series of the movie sequences is given in the supplementary file (Explanations_Reiter-et-al-2016.pdf), a full list of file names is given in "list-of-files-Reiter-et-al-2016.pdf".

Authors

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Contributors

HelTec - Helmholtz Laboratory for Tectonic Modelling (GFZ German Research Centre for Geosciences, Germany)

Keywords

two indenter tectonics, particle image velocimetry, fold-and-thrust belts, Tadjik basin, Pamir, 4D analogue experiments, mountain building, continental collision, sandbox model, digital elevation model, analogue model, EPSC, multi-scale laboratories, analogue models of geologic processes, analogue modelling results, technically defined setting > collisional setting, technically defined setting > foreland setting, crustal setting > upper continental crust setting, tectonic process > continental collision, detachment fault, oblique slip fault, reverse fault, wrench fault, thrust fault, tectonic and structural features, mountains, Microsphere > Glassy, Silicon, Sand > Quartz Sand, Sandstone > Sandbox (on scale), Particle Image Velocimetry (PIV), Time lapse camera, Sectioning, Microsphere > Glassy, Particle Image Velocimetry (PIV), Sand > Quartz Sand, Sandstone > Sandbox (on scale), Sectioning, Silicon, Time lapse camera, crustal setting > upper continental crust setting, detachment fault, mountain, oblique slip fault, reverse fault, tectonic and structural features, tectonic process > continental collision, technically defined setting > collisional setting, technically defined setting > foreland setting, thrust fault, wrench fault

GFZ Science Keywords

EARTH SCIENCE > SOLID EARTH > GEOMORPHIC LANDFORMS/PROCESSES > TECTONIC PROCESSES
EARTH SCIENCE > SOLID EARTH > TECTONICS > PLATE TECTONICS > PLATE MOVEMENT

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Dataset Supplementary material for analogue experiments on the interactions of two indenters, and their implications for curved fold-and-thrust belts

Cite as:
Reiter, Karsten; Kukowski, Nina; Ratschbacher, Lothar; Rosenau, Matthias (2016): Supplementary material for analogue experiments on the interactions of two indenters, and their implications for curved fold-and-thrust belts. GFZ Data Services. <http://doi.org/10.5880/GFZ.4.1.2016.007>

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Data Description

Reiter, K., Kukowski, N., & Ratschbacher, L. (2011). The interaction of two indenters in analogue experiments and implications for curved fold-and-thrust belts. *Earth and Planetary Science Letters*, 302(1-2), 132-146. doi:10.1016/j.epsl.2010.12.002

Authors

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Contact

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GFZ Science Keywords

EARTH SCIENCE > SOLID EARTH > TECTONICS > PLATE TECTONICS > CRUSTAL MOTION > CRUSTAL MOTION RATE
EARTH SCIENCE > SOLID EARTH > TECTONICS > PLATE TECTONICS > CRUSTAL MOTION > CRUSTAL MOTION DIRECTION
EARTH SCIENCE > SOLID EARTH > GEOMORPHIC LANDFORMS/PROCESSES > TECTONIC LANDFORMS > MOUNTAINS
EARTH SCIENCE > SOLID EARTH > GEOMORPHIC LANDFORMS/PROCESSES > TECTONIC LANDFORMS > FOLDS

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- XML metadata for download: ISO19115, DataCite, Dublin Core

Tools 2: Data Description Templates

- 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
- Templates soon available via <https://dataservices.gfz-potsdam.de> (until then: via Email)

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 Cook¹, Basanta Adhikari², Andrea Vieth-Hillebrand², Stephane Bonnet³, Tony Reimann⁴, Andreas Koutsodendris⁵, Dirk Sachse¹

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4. Soil Geography and Landscape group & Netherlands Centre for Luminescence dating, Wageningen University, The Netherlands
5. Heidelberg University Institute of Earth Sciences, Heidelberg, Germany

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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

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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

Example Data Description: Before the template

Stimulation data for each of the analyzed EGS projects.

The are provided in tabular form (CSV). The file names indicate the project.

Definition of columns in the data tables (also in the header of the data):

- V = Cumulative injected volume (m^3) - Ehyd = Applied hydraulic energy (J) - MaxM0 = Maximum observed seismic moment (Nm) - CumM0 = Cumulative seismic moment (Nm) - IE = Injection efficiency (-)

Example Data Description: after (= with the template)

The here provided data are part of a broader analysis of past and present stimulation projects, revealing that the temporal evolution and growth of maximum observed moment magnitudes may be linked directly to the injected fluid volume and hydraulic energy. Analyzed projects include the most prominent European Enhanced Geothermal System (EGS) projects in Basel, Switzerland (BAS) and Soultz-sous-Forêts (STZ), France. In Soultz, three different stimulations over the course of 10 years were performed in different wells and different depths. Therefore, we differentiate between the injections in 1993 (STZ93), 2000 (STZ00), and in 2003 (STZ03). We also included the deepest EGS Project to date (St1), located in Helsinki, Finland. Furthermore, we included the fluid-injection experiment from the German super deep scientific drilling hole (KTB), two Australian EGS projects, located at Paralana (Para) and the 2003 Cooper Basin (CBN) injection, as well as the EGS project near Pohang, South Korea. Finally, we also considered a single well injection period at the Berlín geothermal field (BGF), El Salvador, representing the only hydrothermal site considered here.

For each project the cumulative volume injected is provided along with the applied hydraulic energy, maximum observed seismic moment, cumulative seismic moment, and injection efficiency as tab separated ASCII files with the .csv extension. All stimulation files are combined into a single .zip archive. More details on processing steps and references herein can be found in the accompanying data description.

Tools 2: Data Description Templates

- Templates are an important tool for researchers and data curators to increase the quality of data descriptions
- Standardised layout and structure of data description

➤ Templates soon available via <https://dataservices.gfz-potsdam.de> (until then: via Email)

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>)

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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
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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

Part 2: Persistent Identifier in data publications



for data, software,
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related work



PID for physical samples,
cross references to
samples underlying
measurements



uniquely identifying
persons



List of funders
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New PID for
Institutions

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		
fresh									
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	*	GFFB1002T	GFZ	7	36.2	0.55	11.4	3.88
SN02	*	GFFB1002U	GFZ	20	49.3	0.71	14.9	4.84
SN02c	*	GFFB1002U	-	20	n.a.	<lod	0.00	0.00
SN02r	*	GFFB1002U	-	20	n.a.	0.84	14.3	5.68
SN03	*	GFFB1002V	GFZ	30	57.5	0.88	17.6	6.44
SN04	*	GFFB1002R	GFZ	39	56.6	0.93	17.7	6.85
SN04e	*	GFFB1002R	-	39	n.a.	<lod	0.00	0.00
SN04r	*	GFFB1002R	-	39	n.a.	0.91	15.3	6.95



Sample

GFZ **IGSN**

General Identifiers

Project: 5054
 Expedition: 5054
 Name: 5054_1_A_550
 Name: 5054_1_A_550
 Parent IGSN: GFFB1002T
 Release Date: 2020-03-23

Sampling Location

Latitude: 42.8500
 Longitude: 122.8500
 Coordinate System: UTM
 Location Name: Ridge
 Geology: Bedrock: Intra Ridge

Location Map

Sample (cont)

Sample ID: 5054_1_A_550
 Date: 2020-03-23
 Depth: 7 cm
 Depth: 20 cm
 Depth: 30 cm
 Depth: 39 cm

Sample Description

bulk soil
 bulk soil
 exchangeable soil
 residuum soil
 bulk soil
 bulk soil
 exchangeable soil
 residuum soil

Sample Date: 2020-03-23 09:00:00
 Date: 2020-03-23 09:00:00
 Date: 2020-03-23 09:00:00
 Date: 2020-03-23 09:00:00

Current Repository: N/A
 Current Repository Contact: N/A

Sample Description

GFZ DATA SERVICES

Chemical and isotopic data on the deep regolith's source of mineral nutrients in mountainous temperate forest ecosystems

File

Download data
 Date description
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Abstract

The data herein were used to trace the source and depth of nutrient input in two mountainous temperate forest ecosystems in southern Germany (Central Europe) and their relationship to the bedrock and unweathered bedrock granites from drilling cores (depth: 20 m site Centralized (CO2) and 30 m site Bedrock (BE)) obtained by experimental extraction (Bieringer, 2019). The data are presented above in 1000-ppm units for bulk samples of forest floor soil, saprolite, weathered bedrock, and unweathered bedrock. For soil and granite samples, additional for variance ratios of water-soluble and the exchangeable (F) fractions are provided.

Supplement to

Uhlir, D., Amelung, W., von Blanckenburg, F. (2020) Chemical and isotopic data on the deep regolith's source of mineral nutrients in mountainous temperate forest ecosystems. *GFZ Data Services*. <https://doi.org/10.5880/GFZ.2.1029.001>

Related Work

Uhlir, D., Amelung, W., von Blanckenburg, F. (2020) Chemical and isotopic data on the deep regolith's source of mineral nutrients in mountainous temperate forest ecosystems. *GFZ Data Services*. <https://doi.org/10.5880/GFZ.2.1029.001>

Uhlir, D., Amelung, W., von Blanckenburg, F. (2020) Chemical and isotopic data on the deep regolith's source of mineral nutrients in mountainous temperate forest ecosystems. *GFZ Data Services*. <https://doi.org/10.5880/GFZ.2.1029.001>

Data Publication

Scientific Drilling
 The open-access ICDP and IODP Journal

doi

International Continental Scientific Drilling Program (ICDP) | International Ocean Discovery Program (IODP)

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Sci. Drill., 19, 1-11, 2015
<https://doi.org/10.5194/sd-19-1-2015>
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Global Biogeochemical Cycles

Research Article | Open Access

Mineral Nutrients Sourced in Deep Regolith Sustain Long-Term Nutrition of Mountainous Temperate Forest Ecosystems

D. Uhlir, W. Amelung, F. von Blanckenburg

First published: 19 August 2020 | <https://doi.org/10.1029/2019GB006513> | Citations: 2

ICDP Data Set Report

COSC-1 operational report
 Explanatory remarks on the operational data sets

H. Lorenz, J.E. Rosberg, C. Juhlin, L. Blöchl, B.S.G. Almqvist, T. Berthel, P. Conz, D.G. Gee, J. Klonowska, C. Pascal, K. Pedersen, N.M.W. Roberts, C.F. Tsang



Linking papers, data, samples, ...

DataCite related Identifier

IsCitedBy	indicates that B (discovery).
Cites	indicates that A (discovery).
IsSupplementTo	indicates that A (discovery).
IsSupplementTo	indicates that A (discovery).
IsContinuedBy	
Continues	
HasMetadata	
IsMetadataFrom	
IsNewVersionOf	
IsPreviousVersionOf	
IsPartOf	
HasPart	
IsReferencedBy	
References	
IsDocumentedIn	
Documents	
IsCompiledBy	
Compiles	
IsVariantFormOf	
IsOriginalFormOf	
IsIdenticalTo	

Data Description

Lorenz, H.; Rosberg, J. E.; Juhlin, C.; Bjelm, L.; Almqvist, B.; Berthet, T.; Conze, Ronald; Gee, D.; Klonowska, I.; Pascal, C.; Pedersen, K.; Roberts, N.; Tsang, C. F.; (2015): COSC-1 operational report Explanatory remarks on the operational data sets; Deutsches GeoForschungsZentrum GFZ. <https://doi.org/10.2312/ICDP.2015.001>

Related Work

Referenced by

Lorenz, H.; Rosberg, J. E.; Juhlin, C.; Bjelm, L.; Almqvist, B.; Berthet, T.; Conze, Ronald; Gee, D.; Klonowska, I.; Pascal, C.; Pedersen, K.; Roberts, N.; Tsang, C. F.; (2015): Operational report about phase 1 of the collisional orogeny in the Scandinavian caledonides scientific drilling project (COSC-1); Deutsches GeoForschungsZentrum GFZ. <https://doi.org/10.2312/ICDP.2015.002>

Supplement to

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

References

IGSN:ICDP5054EHW1001 (5054_1_A)
IGSN:ICDP5054EHX1001 (5054_1_B)
IGSN:ICDP5054EH02001 (5054_1_C)

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ICDP Data Set Report

10.2312/ICDP.2015.001

COSC-1 operational report

Explanatory remarks on the operational data sets

H. Lorenz, J.E. Rosberg, C. Juhlin, L. Bjelm, B.S.G. Almqvist, T. Berthet, R. Conze, D. Gee, I. Klonowska, C. Pascal, K. Pedersen, N.M.W. Roberts, and C.-F. Tsang

Abstract

The Collisional Orogeny in the Scandinavian Caledonides (COSC) scientific drilling project focuses on mountain building processes in a major mid-Palaeozoic orogen in western Scandinavia and its comparison with modern analogues. The transport and emplacement of subduction-related high-grade continent-ocean transition (COT) complexes onto the Baltica craton and their influence on the underlying allochthons and basement will be studied in a section provided by two fully cored 2.5 km deep drill holes. This operational report concerns the first drill hole, COSC-1 (ICDP 5054-1-A), drilled from early May to late August 2014.

COSC-1 is located in the vicinity of the abandoned Fröjd mine, close to the town of Åre in Jämtland, Sweden and was planned to sample a thick section of the Svea Nappe and to penetrate its basal thrust zone into the underlying lower grade metamorphosed allochthon. Despite substantial technical problems, the drill hole reached 2495.8 m drillers depth and nearly 100 % core recovery was achieved. Surprising was the homogeneity of the Svea Nappe rocks, the unexpected thickness of its basal thrust zone (> 100 m) and that the drill hole, therefore, did not penetrate the bottom of the thrust zone. However, lower grade metasedimentary rocks were encountered in the lowermost part of the drill hole together with tens of metres thick mylonites that are, unexpectedly, rich in large garnets.

The drill core was documented on-site and XRF scanned off-site. During various stages of the drilling, the borehole was documented by comprehensive downhole logging. This operational report provides an overview over the COSC-1 operations from drilling preparations to the sampling party and describes the available datasets and sample material.

Dataset Contact

Lorenz, Henning; Uppsala University, Department of Earth Sciences, Geophysics; henning.lorenz_at_gub.uu.se
COSC Consortium; <http://www.icdp-online.org>

Keywords

caledonides, COSC, deep hydrosphere, dynamics, europe, heat flow, himalaya, ICDP-2011/03, microbiology, norway, orogen, scandes, scandinavia, seismic, sweden, earth science

GCMD Science Keywords

EARTH SCIENCE > SOLID EARTH > ROCKS/MINERALS/CRYSTALS > METAMORPHIC ROCKS > METAMORPHIC ROCK FORMATION

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Data

Data Report

Sample

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GFZ | IGSN

Sample Family

Program: ICDP
Expedition: ICDP 5054
Type: Core
Name: 5054_1_A_1_2
ID: ICDP5054EH0101 (Open)
Parent ID: ICDP5054EH0101
Release Date: 2017-3-1

Location

Latitude: 63.4063
Longitude: 13.200817
Coordinate System: WGS84
Elevation: 813.74
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 Fröjd mine
Country: Sweden
Province: Jämtlands län
County: N/A
City: Åre
Geology: N/A
Material: Rock

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

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Lorenz, H., Rosberg, J.E., Juhlin, C., Bjelm, L., Almqvist, B.S.G., Berthet, T., Conze, R., Gee, D.G., Klonowska, I., Pascal, C., Pedersen, K., Roberts, N.M.W. and Tsang, C.F. (2015): COSC-1 – Drilling of a subduction-related Allochthon in the Palaeozoic Caledonide Orogen of Scandinavia. *Scientific Drilling*, doi: 10.5194/sd-19-1-2015

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Science report

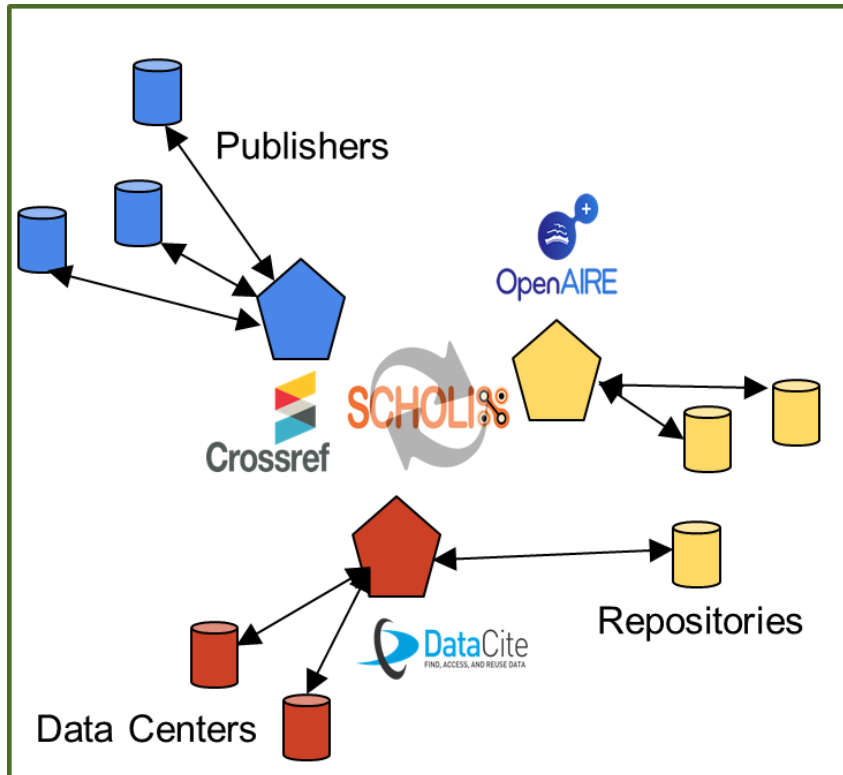
COSC-1 – drilling of a subduction-related allochthon in the Palaeozoic Caledonide orogen of Scandinavia

H. Lorenz¹, J.-E. Rosberg², C. Juhlin¹, L. Bjelm², B. S. G. Almqvist¹, T. Berthet¹, R. Conze³, D. G. Gee¹, I. Klonowska¹, C. Pascal⁴, K. Pedersen⁵, N. M. W. Roberts⁶, and C.-F. Tsang^{1,7}

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Majka, J., Rosén, A., Janák, M., Froitheim, N., Klonowska, I., Mancek, M., Sasinková, V., and Yoshida, K.: Microdiamond dis-



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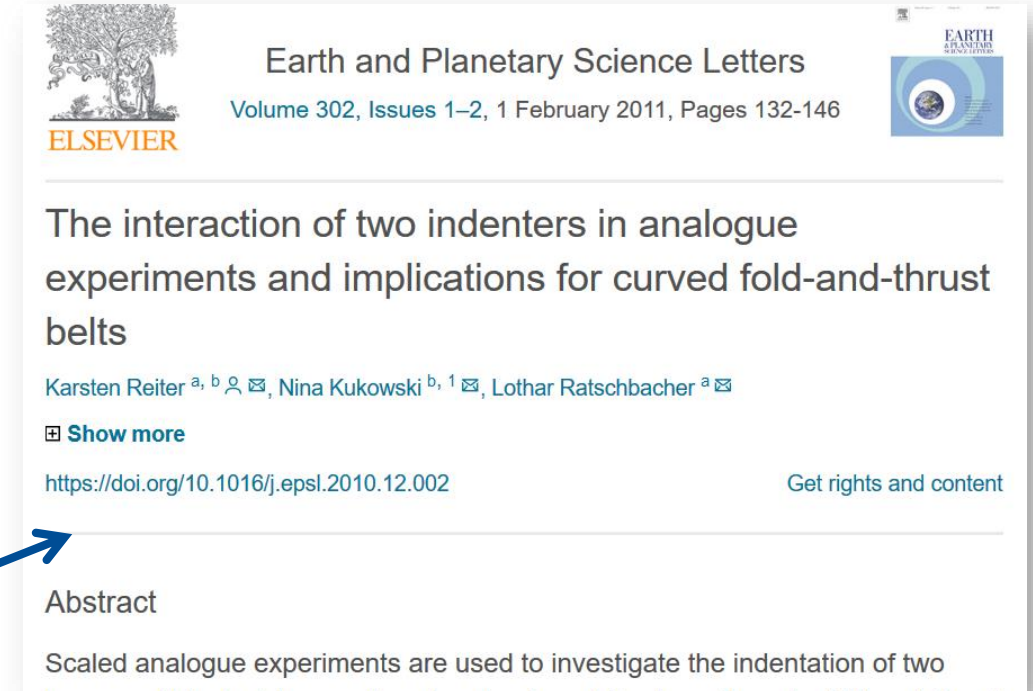
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...supplement to an article from 2011



Earth and Planetary Science Letters
Volume 302, Issues 1–2, 1 February 2011, Pages 132–146

The interaction of two indenters in analogue experiments and implications for curved fold-and-thrust belts

Karsten Reiter ^{a, b}, Nina Kukowski ^{b, 1}, Lothar Ratschbacher ^a

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80% of that of the fast one. A layer of quartz sand in front of the indenters, 1 by 1 meter in size and 1.5 cm thick, represents the sedimentary basin infill. A basal detachment layer is made up of low-friction glass beads or viscous silicone oil representing weak shale or evaporates layers, respectively. The surface evolution by

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Vielen Dank für Ihre Aufmerksamkeit!

Kirsten Elger
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