

Long-tail data curation in the times of the FAIR Principles and Enabling FAIR Data – challenges and practices from GFZ Data Services

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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 reports or technical data description

The screenshot shows the GFZ Data Services web portal. At the top, there's a navigation bar with links: Portal, Submit Metadata, About/Contact, Data Readiness Roadmap, and RDM recommendations for PhD students. The main content area is divided into several sections. On the left, there's a 'Search' section with a text input field and a 'Spatial Filter' section with a map icon and a 'Close Map' button. Below these is a 'Current Selection (Link)' section showing 'seismic*'. The 'Datacenters' section lists various data sources like CRC12110B, FID GEO, and GFZ German Research Centre for Geosciences. The 'Categories' section shows 'earth science' and 'earth science services'. The 'Top Subjects' section lists various topics like 'broadband seismic waveforms', 'date of sampling', and 'earth science > solid earth > tectonics > earth...'. On the right, there's a large map showing global data distribution with blue squares. Below the map, there's a section titled 'Found 157 datasets. (3 global datasets)' with three dataset entries. Each entry includes a title, authors, and an abstract. The first entry is 'Geological data from the Western Afar Margin, East Africa', the second is 'Fluid-Induced Fault Slip Experiments in the Laboratory on Critically Stressed Saw-Cut Sandstone Samples with High Permeability', and the third is 'Seismic crustal model of Sri Lanka'.

Technical „Highlights“

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

DOI Services



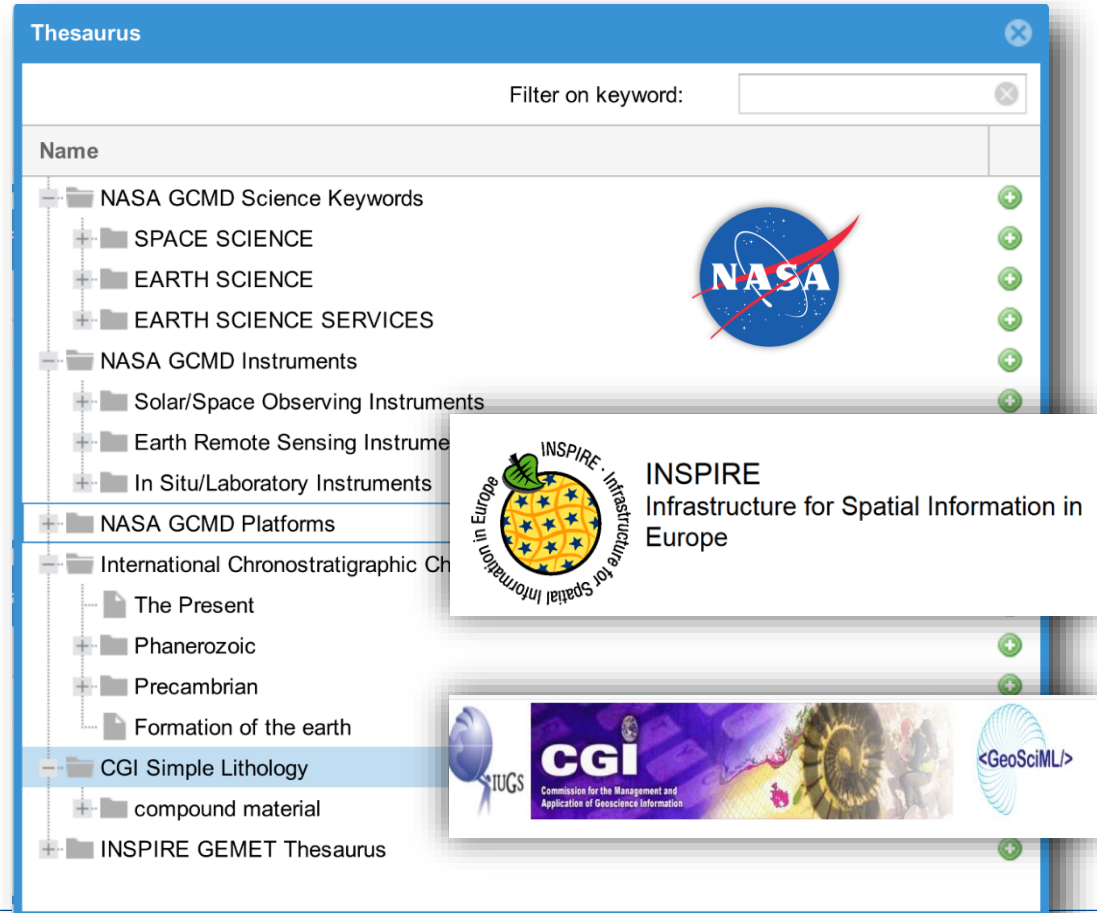
Datcenters

EnMAP
GEOFON Seismic Events
GEOFON Seismic Networks
GFZ German Research Centre for Geosciences
GIPP Geophysical Instrument Pool Potsdam
ICGEM International Centre for Global Earth Models
IGETS International Geodynamics and Earth Tide Service
ISDC Information System and Data Center
PIK Potsdam Institute for Climate Impact Research
SDDB Scientific Drilling Database
SFB806 and CRC806-Database
TERENO
TR32DB Transregio 32 Database
WDS World Stress Map

DOIs for IAG Services ICGEM, IGETS, ISG (new), INTERMAGNET, partner institutes (PIK), large collaborative projects (TERENO, COSC, EnMAP, WSM) → Organisation in Data Centres with project-specific layout of DOI Landing Pages

Metadata editor assists to enter

- Title, description, authors and contributors, ...
- **Provenance** (temporal, spatial extent and applied methods)
- Vocabulary from Earth Sciences **ontologies**
- **References**: key articles, related data, citing papers and samples



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

➤ Template soon available via
<http://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-Hillebrand³, Stephane Bonnet³, Tony Reimann⁴, Andreas Koutsodendris⁵, Dirk Sachse¹

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2. Department of Civil Engineering, Pulchowk Campus, Institute of Engineering, Tribhuvan University, Kathmandu, 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. A.; Bonnet, S.; Reimann, T.; K., Andreas; Sachse, D. (2019): Paleosol-derived data used for 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

Samples - IGSN

- 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)
- IGSN are citable in papers and data publications



Helmholtz Centre
POTSDAM

IGSN

icdp

General Identifiers

Program: ICDP
Expedition: ICDP 5054
Type: Core
Name: 5054_1_A_3_Z
IGSN: ICDP5054EX2Z501 (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 Frilå 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 Unit: mid-paleozoic
Geological Age: 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-RockCoring
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

Legend: Hole, Core, Core-Section, Core-Sample

The Sample Family shows a sub-sampling graph. Select entries to navigate samples. Core-Samples are issued to scientists on request. The naming convention for a Core-Sample is: Expedition_Site_Hole_Core_Section,from-to(cm). Hole, Core, and Core-Section are following the same schema respectively.

Location Map

Drilling Start/End: 2013-9-5 / 2013-9-5
Latitude: 63.40630 ° Longitude: 13.20306 °
Åre, Jämtlands län, Sweden

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.SDOB.ICDP.5054.2015>

Linking papers, data, samples, ...

DataCite related Identifier

IsCitedBy	indicates that A (discovery).
Cites	indicates that A (discovery).
IsSupplement	indicates that A (discovery).
IsSupplement	
IsContinuedBy	
Continues	
HasMetadata	
IsMetadataFrom	
IsNewVersion	
IsPreviousVersion	
IsPartOf	
HasPart	
IsReferencedBy	
References	
IsDocumented	
Documents	
IsCompiledBy	
Compiles	
IsVariantForm	
IsOriginalForm	
IsIdenticalTo	

Data Description

Lorenz, H.; Rosberg, J. E.; Juhlin, C.; Bjelm, L.; Almquist, 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.; Almquist, 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

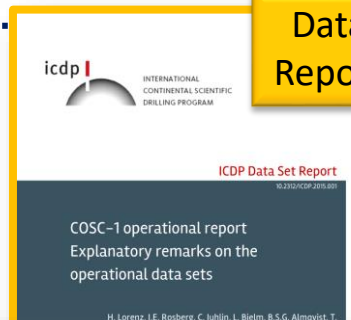
Lorenz, H., Rosberg, J.-E., Juhlin, C., Bjelm, L., Almquist, B. S. G., Berthet, T., Tsang, C.-F. (2015). COSC-1 – drilling of a subduction-related allochthon in the Palaeozoic Caledonide orogen of Scandinavia. *Sci. Drill.*, 19, 1–11. doi:10.5194/sd-19-1-2015

References

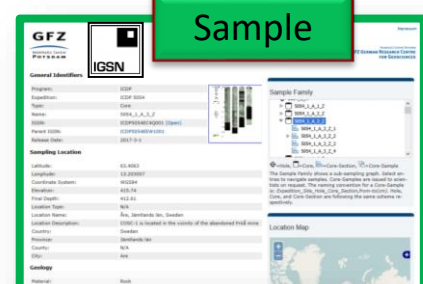
IGSN:ICDP5054EHW1001 (5054_1_A)
IGSN:ICDP5054EHX1001 (5054_1_B)
IGSN:ICDP5054EH02001 (5054_1_C)



Data



Data Report



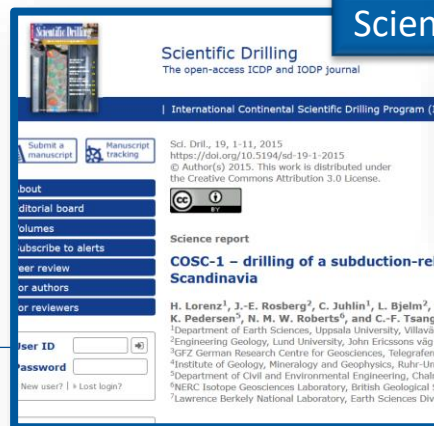
Sample

Publications & Datasets

Lorenz, H., Rosberg, J.-E., Juhlin, C., Bjelm, L., Almquist, 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. Drill.*, 19, 1–11. doi:10.5194/sd-19-1-2015

Lorenz, Henning; Rosberg, Jan-Erik; Juhlin, Christopher; Bjelm, Leif; Almquist, Bjørn; Berthet, Théo; Conze, Ronald; Gee, David G.; Klonowska, Iwona; Pascal, Christopher; 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>

Scientific Paper



Lorenz, H., Rosberg, J.-E., Juhlin, C., Bjelm, L., Almquist, B. S. G., Berthet, T., Conze, R., Gee, D. G., Klonowska, I., Pascal, C., Pedersen, K., Roberts, N. M. W., and Tsang, C.-F.: COSC-1 operational report – Scientific data sets, GFZ German Research Center for Geosciences, doi:10.1594/GFZ.SDDB.ICDP.5054.2015, 2015b.

Majka, J., Rosen, A., Janak, M., Froitzheim, N., Klonowska, I., Manneck, M., Sasinková, V., and Yoshida, K.: Microdiamond dis-

Scholix

- Public database of references
- Links data and articles via PID
- Publishers can link to data
- Data may be released years after article

GFZ DATA SERVICES
GEOSCIENCES DATA PUBLISHER

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/10.5680/GFZ.4.1.2016.007>

Files

File	Size
Explanations_Reiter-et-al-2016.pdf	0.5 Mb
List-of-files-Reiter-et-al-2016.pdf	232.6 Kb
Experimenting.avi	78.7 Mb
gb70-pictures.pdf	497.1 Kb
gb40-3Dview-30-34.avi	5.8 Mb
gb50-3Dview-30-33.avi	5.7 Mb
gb55-3Dview-30-32.avi	6.1 Mb
gb60-3Dview-30-29.avi	6.4 Mb
gb70-3Dview-30-30.avi	6.0 Mb

Abstract

This data publication includes animations and figures of eight scale 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 Tethys 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.

data publication in 2016

Dataset Description

Supplement to

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](https://doi.org/10.1016/j.epsl.2010.12.002)

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, 2, 3}, Nina Kukowski ^{b, 1, 3}, Lothar Ratschbacher ^{a, 3}

<https://doi.org/10.1016/j.epsl.2010.12.002>

paper published in 2011

New: link to data in the paper

Research data for this article

GFZ Data Services
Geosciences data
Data associated with the article:
Supplementary material for analogue experiments on the interactions of two indenters, and their implications for curved fold-and-thrust belts [↗](#)

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