Dataset citation and identification

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Head of Digital Library Technology, The British Library
President, DataCite

December, 2009

Widening gap

A widening gap in the scientific record between published research and the data that underlies it

- Published work held by libraries
- Datasets held by data centres
- No effective way to link between datasets and articles
- No widely used method to identify datasets
- No widely used method to cite datasets

As a result, datasets are

- Difficult to discover
- Difficult to access
- Second-class citizens in the scientific record

Datasets – first class citizens?

Datasets	Published articles
Data is difficult to manage after project funding ceases	Libraries ensure long-term storage and management
Informal networks provide the primary means of sharing	Established funded services provide the primary means of access
Only 21% use a national or international facility	Nearly all published articles are held in multiple national libraries
Datasets are not included in impact analysis	Articles and citations form the backbone of impact analysis
Good luck finding it or getting permission to use it (your discipline may vary)	Catalogues and full-text search support discovery

Source: UKRDS Study

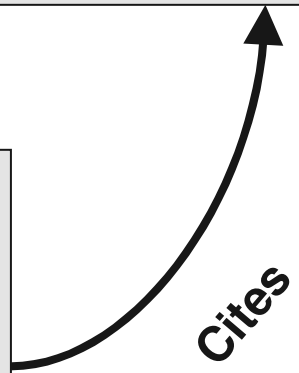
Dataset citation using Digital Object Identifiers (DOIs)

The DOI system offers an easy way to connect the article with the underlying data

Several organisations assign DOIs to datasets

- IUCR, ICPSR, OECD through CrossRef
- Pangea, Mare, and others through TIB (German Science Library)

Dataset
G.Yancheva, N. R. Nowaczyk et al (2007) Rock magnetism and X-ray flourescence spectrometry analyses on sediment cores of the Lake Huguang Maar, Southeast China, PANGAEA
doi:10.1594/PANGAEA.587840



Article
G. Yancheva, N. R. Nowaczyk et al (2007) Influence of the intertropical convergence zone on the East Asian monsoon
Nature 445, 74-77
doi:10.1038/nature05431

DataCite

DataCite – International Data Citation Initiative

Our long term vision is to support researchers by providing methods for them to locate, identify, and cite research datasets with confidence.

Milestones

- 2005, Hannover, TIB begins to issue DOIs for datasets
- March 2009, Paris
  - Memorandum signed at ICSTI
- December 2009, London
  - DataCite Association founded

(DataCite : Data Centres :: CrossRef : Publishers)

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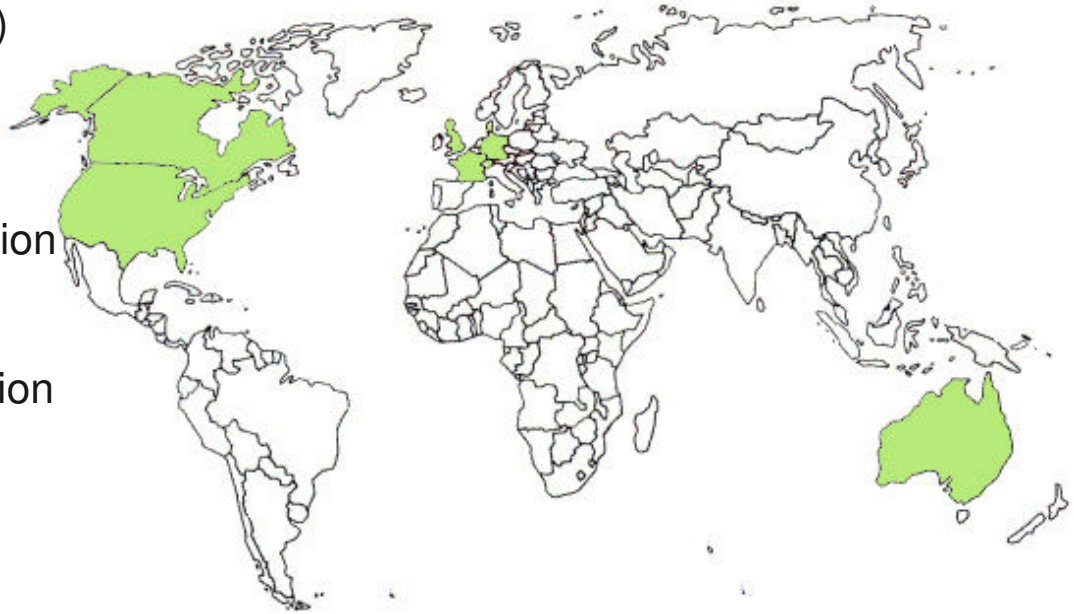
Global partnership

- Germany - Technische Informationsbibliothek (TIB)
- United Kingdom - The British Library
- France - L'Institut de l'Information Scientifique et Technique (INIST)
- Switzerland - Library of the ETH Zürich
- Denmark - Library of TU Delft
- Netherlands - Technical Information Center
- Canada - Canadian Institute for Scientific and Technical Information (CISTI)
- Australia - National Data Service (ANDS)
- USA - California Digital Library
- USA - Purdue University



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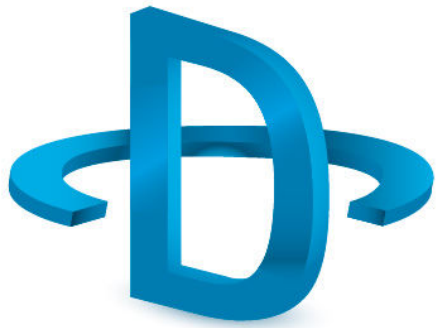
The DataCite registration agency

- Maintains the resolution infrastructure
- Maintains a searchable database of metadata
- Manages the identifiers over the long term
- Establishes and shares best practice

Publishing agents (data centres, research institutes, publishers) are responsible for

- Quality assurance
- Content storage and access
- Creating the identifier
- Creating and updating metadata



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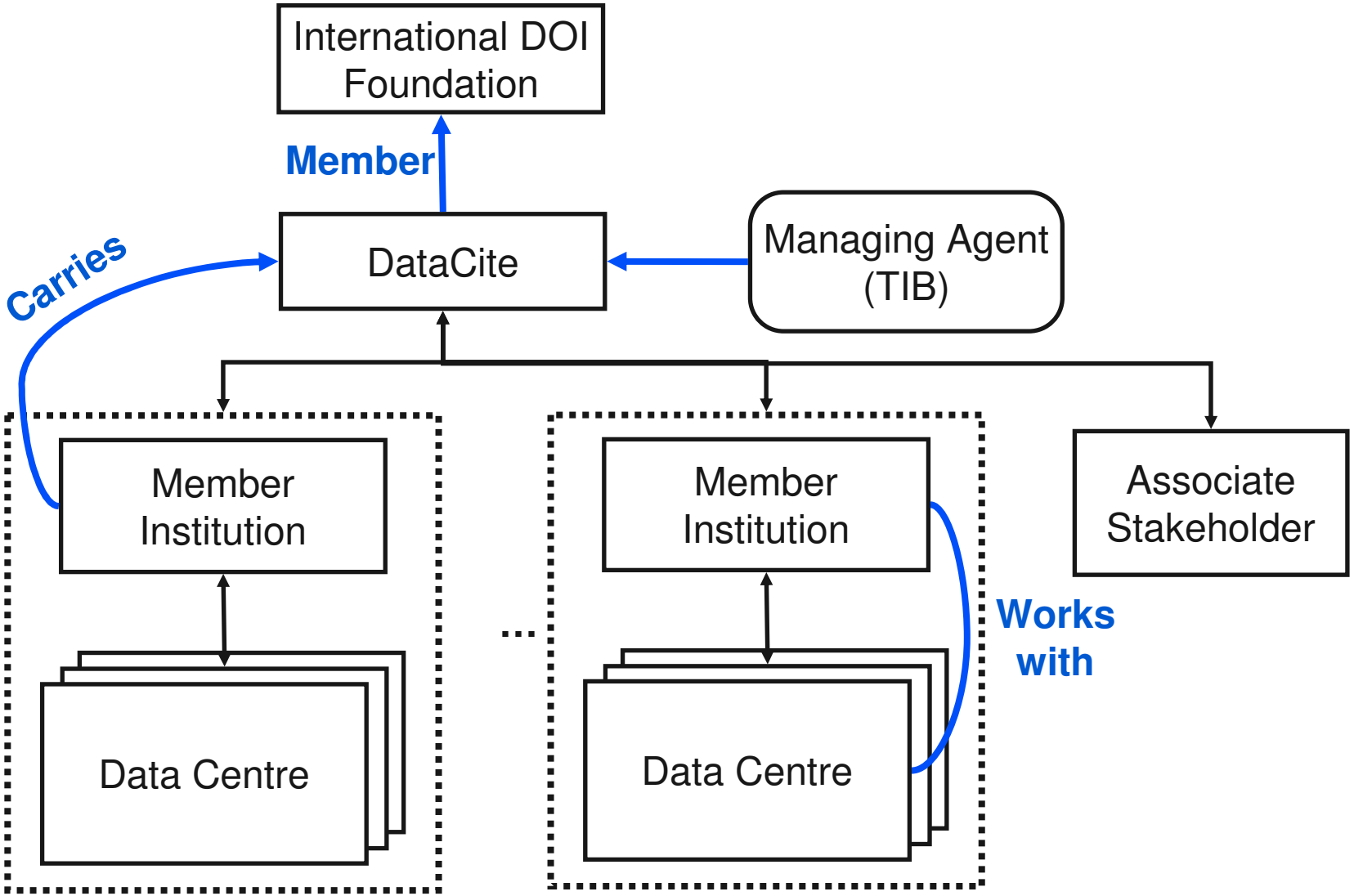

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Detail view

Title:	SAFOD Main Hole downhole logging data phase 1.2 1894-2123m, year: 2004
Author(s):	SAFOD,
Published in:	2008;
Publisher:	GeoForschungsZentrum Potsdam(GFZ) (Potsdam, Germany)
Document type:	Research Data
Language:	English
DOI:	10.1594/GFZ.SDDB.1121

Abstract

SAFOD is motivated by the need to answer fundamental questions about the physical and chemical processes controlling faulting and earthquake generation within a major plate-bounding fault. SAFOD will drill and instrument an inclined borehole across the San Andreas Fault Zone to a depth of 3.2 km, targeting a repeating microearthquake source. The drill site is located west of the vertical San Andreas Fault on a segment of the fault that moves through a combination of aseismic creep and repeating microearthquakes. It lies at the extreme northern end of the rupture zone of the 1966, Magnitude 6 Parkfield earthquake, the most recent in a series of events that have ruptured the fault five times since 1857. This data set contains open hole geophysical wireline logging data from 1894-2123m (measured depth relative to Kelly Bushing, which is 9,45m above ground level).
This dataset is cited by doi: 10.1029/2006GC001388.

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Catalogue

Dataset Description

Citation: SAFOD, ; (2008): SAFOD Main Hole downhole logging data phase 2 (2005), 2975-3387m. *Scientific Drilling Database.* doi:10.1594/GFZ.SDDB.1127

Download Citation (EndNote)

DOI: 10.1594/GFZ.SDDB.1127

Title: SAFOD Main Hole downhole logging data phase 2 (2005), 2975-3387m

Abstract: SAFOD is motivated by the need to answer fundamental questions about the physical and chemical processes controlling faulting and earthquake generation within a major plate-bounding fault. SAFOD will drill and instrument an inclined borehole across the San Andreas Fault Zone to a depth of 3.2 km, targeting a repeating microearthquake source. The drill site is located west of the vertical San Andreas Fault on a segment of the fault that moves through a combination of aseismic creep and repeating microearthquakes. It lies at the extreme northern end of the rupture zone of the 1966, Magnitude 6 Parkfield earthquake, the most recent in a series of events that have ruptured the fault five times since 1857. The Parkfield region is the most comprehensively instrumented section of a fault anywhere in the world, and has been the focus of intensive study for the past two decades. This data set contains open hole geophysical wireline logging data from 2975-3387m (rel. to rig floor, 9,45m abv gnd)

Show in Google Earth

Related Publications:

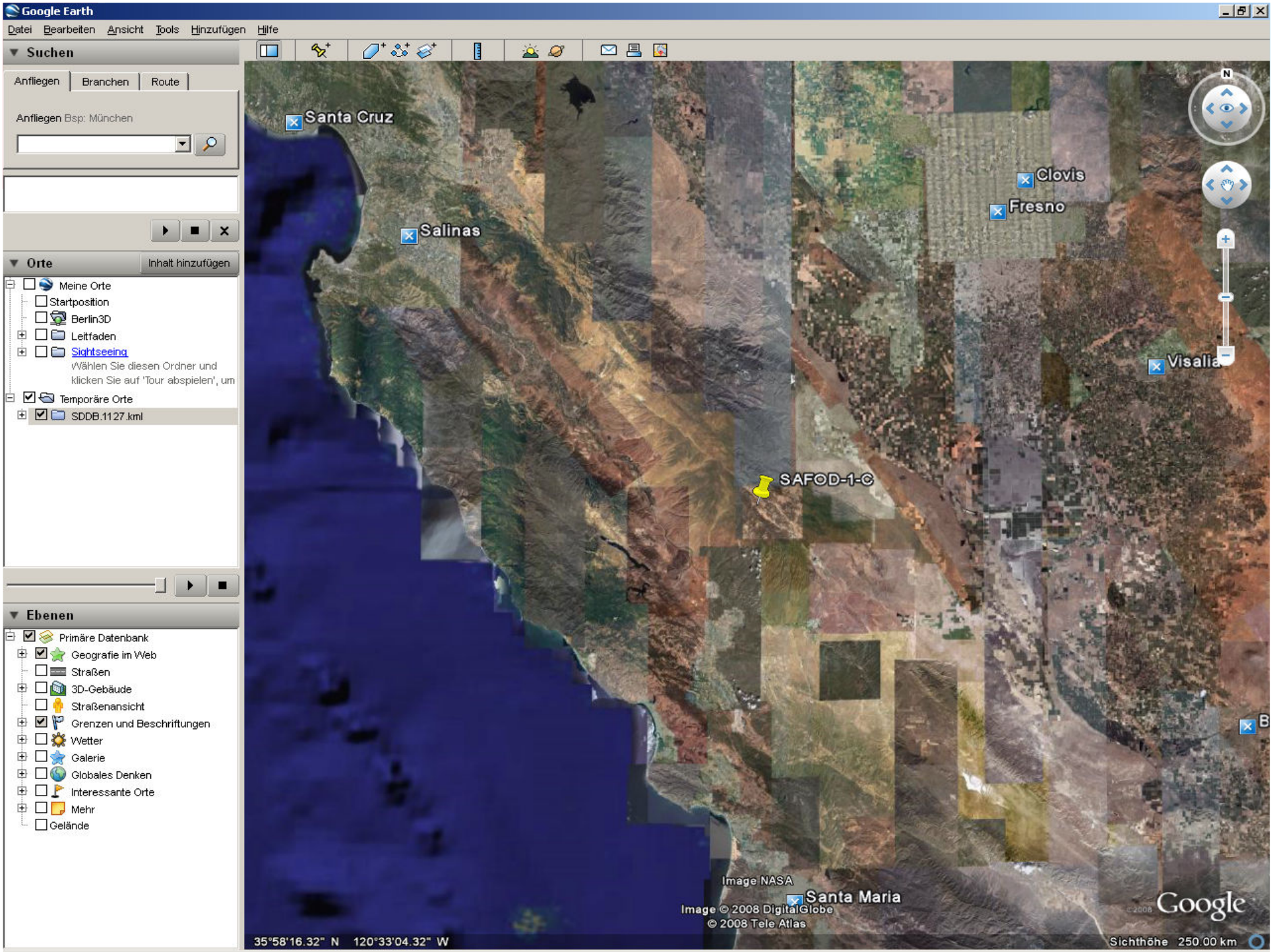
Activities: SAFOD-1-C

Latidude:	35.9712 °N
Longitude:	-120.5512 °E
Elevation:	m above site datum
Date/Time:	2004-07-20 00:00:00 UTC
Program:	International Continental Scientific Drilling Program
Expedition:	SAFOD
Platform:	Land based
Gear:	drilling rig

Datapoints: 99974

Parameter(s):

	Parameter [Unit]	Principal Investigator	Method
☐	Bit size [cm]	SAFOD	length
☐	Caliper [cm]	SAFOD	not specified
☐	Shear Wave Slowness [US/F]	SAFOD	calculation
☐	Compressional Wave Slowness [US/F]	SAFOD	calculation
☐	gamma ray [GAPI]	SAFOD	gamma ray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Startposition
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Globales Denken
Interessante Orte
Mehr
Gelände
Santa Cruz
Salinas
Clovis
Fresno
Visalia
SAFOD-1-C
Santa Maria
Image NASA
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Google
35°58'16.32" N 120°33'04.32" W
Sichthöhe 250.00 km

☐	gamma ray [GAPI]	SAFOD	gamma ray logging
☐	Relative Bearing [°]	SAFOD	not specified
☐	Caliper from x axis of x-y Caliper(s) [cm]	SAFOD	not specified
☐	Cablehead Tension [N]	SAFOD	not specified
☐	Field Normalized Compensated Neutron Porosity [PU]	SAFOD	calculation
☐	gamma ray [GAPI]	SAFOD	gamma ray logging
☐	Potassium [%]	SAFOD	calculation
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☐	Vert resolution matched (2 ft) res - DOI 20 inch [Ohmm]	SAFOD	calculation
☐	Vert resolution matched (2 ft) res - DOI 30 inch [Ohmm]	SAFOD	calculation
☐	Vert resolution matched (2 ft) res - DOI 60 inch [Ohmm]	SAFOD	calculation
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☐	Vert resolution matched (2 ft) res - DOI 120 inch [Ohmm]	SAFOD	calculation
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☐	Spontaneous Potential Shifted [mV]	SAFOD	not specified
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☐	Uranium [ppm]	SAFOD	calculation
☐	ZDL correction [g/cm3]	SAFOD	calculation
☐	ZDL bulk density [g/cm3]	SAFOD	not specified

Separator: Comma

☐	gamma ray [GAPI]	SAFOD	gamma ray logging
☐	Relative Bearing [°]	SAFOD	not specified
☐	Caliper from x axis of x-y Caliper(s) [cm]	SAFOD	not specified
☐	Cablehead Tension [N]	SAFOD	not specified
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☐	gamma ray [GAPI]	SAFOD	gamma ray logging
☐	Potas	SAFOD	calculation
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☐	Speed [m/s]	SAFOD	calculation
☐	Thorium [ppm]	SAFOD	calculation
☐	Uranium [ppm]	SAFOD	calculation
☐	ZDL correction [g/cm3]	SAFOD	calculation
☐	ZDL bulk density [g/cm3]	SAFOD	not specified

Separator: Comma

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Detail view

Title: Planktic foraminiferal flux and faunal composition of sediment trap L1_K276 in the northeastern Atlantic, supplementary data to: Storz, David; Schulz, Hartmut; Waniek, Joanna J; Schulz-Bull, Detlef; Kucera, Michal (2009): Seasonal and interannual variability of the planktic foraminiferal flux in the vicinity of the Azores Current. Deep-Sea Research I, 56(1), 107-124

Author(s): Storz, David; Schulz, Hartmut; Waniek, Joanna J; Schulz-Bull, Detlef; Kucera, Michal

Published in: 2009;

Publisher: PANGAEA - Publishing Network for Geoscientific & Environmental Data (Bremen/Bremerhaven)

Document type: Research Data

Language: English

DOI: 10.1594/PANGAEA.724325

Abstract

Planktic foraminiferal (PF) flux and faunal composition from three sediment trap time series of 2002-2004 in the northeastern Atlantic show pronounced year-to-year variations despite similar sea surface temperature (SST). The averaged fauna of the in 2002/2003 is dominated by the species Globigerinita glutinata, whereas in 2003/2004 the averaged fauna is dominated by Globigerinoides ruber. We show that PF species respond primarily to productivity, triggered by the seasonal dynamics of vertical stratification of the upper water column. Multivariate statistical analysis reveals three distinct species groups, linked to bulk particle flux, to chlorophyll concentrations and to summer/fall oligotrophy with high SST and stratification. We speculate that the distinct nutrition strategies of strictly asymbiontic, facultatively symbiontic, and symbiontic species may play a key role in explaining their abundances and temporal succession. Advection of water masses within the Azores Current and species expatriation result in a highly diverse PF assemblage. The Azores Frontal Zone may have influenced the trap site in 2002, indicated by subsurface water cooling, by highest PF flux and high flux of the deep-dwelling species Globorotalia scitula. Similarity analyses with core top samples from the global ocean including 746 sites from the Atlantic suggest that the trap faunas have only poor analogs in the surface sediments. These differences have to be taken into account when estimating past oceanic properties from sediment PF data in the eastern subtropical North Atlantic.
This dataset is supplement to doi: 10.1016/j.dsr.2008.08.009.

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Data Description

RIS

Citation: Storz, D et al. (2009): Planktic foraminiferal flux and faunal composition of sediment trap L1_K276 in the northeastern Atlantic. doi:10.1594/PANGAEA.72
Supplement to: **Storz, David; Schulz, Hartmut; Waniek, Joanna J; Schulz-Bull, Detlef; Kucera, Michal (2009):** Seasonal and interannual variabilit the planktic foraminiferal flux in the vicinity of the Azores Current. *Deep-Sea Research I*, **56(1)**, 107-124, doi:10.1016/j.dsr.2008.08.009

Abstract: Planktic foraminiferal (PF) flux and faunal composition from three sediment trap time series of 2002-2004 in the northeastern Atlantic show pronounced year-to-year variation despite similar sea surface temperature (SST). The averaged fauna of the in 2002/2003 is dominated by the species Globigerinita glutinata, whereas in 2003/2004 the averag fauna is dominated by Globigerinoides ruber. We show that PF species respond primarily to productivity, triggered by the seasonal dynamics of vertical stratification of the up water column. Multivariate statistical analysis reveals three distinct species groups, linked to bulk particle flux, to chlorophyll concentrations and to summer/fall oligotrophy wi SST and stratification. We speculate that the distinct nutrition strategies of strictly asymbiontic, facultatively symbiontic, and symbiontic species may play a key role in explai their abundances and temporal succession. Advection of water masses within the Azores Current and species expatriation result in a highly diverse PF assemblage. The Az Frontal Zone may have influenced the trap site in 2002, indicated by subsurface water cooling, by highest PF flux and high flux of the deep-dwelling species Globorotalia scitu Similarity analyses with core top samples from the global ocean including 746 sites from the Atlantic suggest that the trap faunas have only poor analogs in the surface sedir These differences have to be taken into account when estimating past oceanic properties from sediment PF data in the eastern subtropical North Atlantic.

Project(s): **Paleoceanography at Tübingen University** (GeoTü)

Event(s): **L1_K276** * *Latitude:* 30.0000 * *Longitude:* -22.0000 * *Elevation:* -5300.0 m * *Date/Time:* 2002-02-24T00:00:00 * *Date/Time 2:* 2004-04-01T00:00:00 * *Location:* NE Atlantic - A Front * *Device:* Trap, sediment * *Comment:* Station used since 1980

Size: 6 datasets

Download Data

Download **ZIP** file containing all datasets as tab-delimited text *(use the following character encoding:* ISO-8859-1: ISO Western (PANGAEA default) *)*

Datasets listed in this Collection

- **Storz, D; Schulz, H; Waniek, JJ et al. (2009):** (Table A a) Relative contributions of planktic foraminiferal species in sediment trap series L1/K276-22 at 2000 m water depth. doi:10.1594/PANGAEA.724294
- **Storz, D; Schulz, H; Waniek, JJ et al. (2009):** (Table A b) Flux of planktic foraminiferal species in sediment trap series L1/K276-22 at 2000 m water depth. doi:10.1594/PANGAEA.724308
- **Storz, D; Schulz, H; Waniek, JJ et al. (2009):** (Table B a) Relative contributions of planktic foraminiferal species in sediment trap series L1/K276-22 at 3000 m water depth. doi:10.1594/PANGAEA.724301
- **Storz, D; Schulz, H; Waniek, JJ et al. (2009):** (Table B b) Flux of planktic foraminiferal species in sediment trap series L1/K276-22 at 3000 m water depth. doi:10.1594/PANGAEA.724309
- **Storz, D; Schulz, H; Waniek, JJ et al. (2009):** (Table C a) Relative contributions of planktic foraminiferal species in sediment trap series L1/K276-23 at 3000 m water depth. doi:10.1594/PANGAEA.724307
- **Storz, D; Schulz, H; Waniek, JJ et al. (2009):** (Table C b) Flux of planktic foraminiferal species in sediment trap series L1/K276-23 at 3000 m water depth. doi:10.1594/PANGAEA.724310

Deep Sea Research Part I: Oceanographic Research Papers
Volume 56, Issue 1, January 2009, Pages 107-124

doi:10.1016/j.dsr.2008.08.009

Seasonal and interannual variability of the planktic foraminiferal flux in the vicinity of the Azores Current

David Storz[a, 1], Hartmut Schulz[a], Joanna J. Waniek[b], Detlef E. Schulz-Bull[b] and Michal Kučera[a]

[a]Institute for Geosciences, Sigwartstraße 10, D-72076 Tübingen, Germany

[b]Leibniz Institute for Baltic Sea Research Warnemünde, Seestraße 15, D-18119 Rostock, Germany

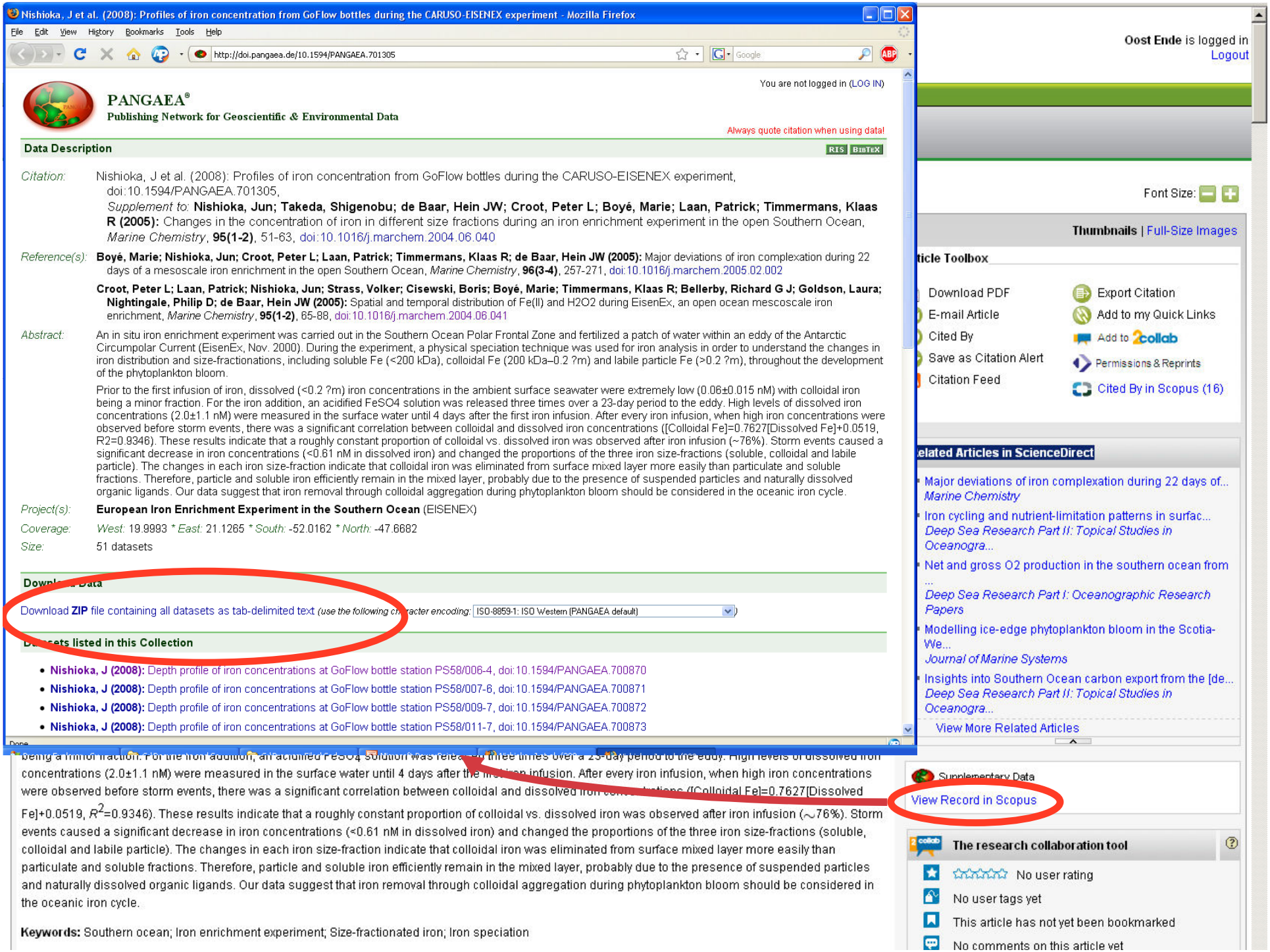
Received 16 April 2007; revised 14 August 2008; accepted 21 August 2008. Available online 24 September 2008.

Abstract

Planktic foraminiferal (PF) flux and faunal composition from three sediment trap time series of 2002–2004 in the northeastern Atlantic show pronounced year-to-year variations despite similar sea surface temperature (SST). The averaged fauna of the in 2002/2003 is dominated by the species *Globigerinita glutinata*, whereas in 2003/2004 the averaged fauna is dominated by *Globigerinoides ruber*. We show that PF species respond primarily to productivity, triggered by the seasonal dynamics of vertical stratification of the upper water column. Multivariate statistical analysis reveals three distinct species groups, linked to bulk particle flux, to chlorophyll concentrations and to summer/fall oligotrophy with high SST and stratification. We speculate that the distinct nutrition strategies of strictly asymbiontic, facultatively symbiontic, and symbiontic species may play a key role in explaining their abundances and temporal succession. Advection of water masses within the Azores Current and species expatriation result in a highly diverse PF assemblage. The Azores Frontal Zone may have influenced the trap site in 2002, indicated by subsurface water cooling, by highest PF flux and high flux of the deep-dwelling species *Globorotalia scitula*. Similarity analyses with core top samples from the global ocean including 746 sites from the Atlantic suggest that the trap faunas have only poor analogs in the surface sediments. These differences have to be taken into account when estimating past oceanic properties from sediment PF data in the eastern subtropical North Atlantic.

Keywords: Eastern North Atlantic; Planktic foraminifers; Sediment trap; Azores Current; Particle flux; Species ecology

Article Outline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Citation: Nishioka, J et al. (2008): Profiles of iron concentration from GoFlow bottles during the CARUSO-EISENEX experiment, doi:10.1594/PANGAEA.701305,
Supplement to: Nishioka, Jun; Takeda, Shigenobu; de Baar, Hein JW; Croot, Peter L; Boyé, Marie; Laan, Patrick; Timmermans, Klaas R (2005): Changes in the concentration of iron in different size fractions during an iron enrichment experiment in the open Southern Ocean, Marine Chemistry, 95(1-2), 51-63, doi:10.1016/j.marchem.2004.06.040
Reference(s): Boyé, Marie; Nishioka, Jun; Croot, Peter L; Laan, Patrick; Timmermans, Klaas R; de Baar, Hein JW (2005): Major deviations of iron complexation during 22 days of a mesoscale iron enrichment in the open Southern Ocean, Marine Chemistry, 96(3-4), 257-271, doi:10.1016/j.marchem.2005.02.002
Croot, Peter L; Laan, Patrick; Nishioka, Jun; Strass, Volker; Cisewski, Boris; Boyé, Marie; Timmermans, Klaas R; Bellerby, Richard G J; Goldson, Laura; Nightingale, Philip D; de Baar, Hein JW (2005): Spatial and temporal distribution of Fe(II) and H2O2 during EisenEx, an open ocean mesoscale iron enrichment, Marine Chemistry, 95(1-2), 65-88, doi:10.1016/j.marchem.2004.06.041
Abstract: An in situ iron enrichment experiment was carried out in the Southern Ocean Polar Frontal Zone and fertilized a patch of water within an eddy of the Antarctic Circumpolar Current (EisenEx, Nov. 2000). During the experiment, a physical speciation technique was used for iron analysis in order to understand the changes in iron distribution and size-fractionations, including soluble Fe (<200 kDa), colloidal Fe (200 kDa–0.2 ?m) and labile particle Fe (>0.2 ?m), throughout the development of the phytoplankton bloom.
Prior to the first infusion of iron, dissolved (<0.2 ?m) iron concentrations in the ambient surface seawater were extremely low (0.06±0.015 nM) with colloidal iron being a minor fraction. For the iron addition, an acidified FeSO4 solution was released three times over a 23-day period to the eddy. High levels of dissolved iron concentrations (2.0±1.1 nM) were measured in the surface water until 4 days after the first iron infusion. After every iron infusion, when high iron concentrations were observed before storm events, there was a significant correlation between colloidal and dissolved iron concentrations ([Colloidal Fe]=0.7627[Dissolved Fe]+0.0519, R2=0.9346). These results indicate that a roughly constant proportion of colloidal vs. dissolved iron was observed after iron infusion (~76%). Storm events caused a significant decrease in iron concentrations (<0.61 nM in dissolved iron) and changed the proportions of the three iron size-fractions (soluble, colloidal and labile particle). The changes in each iron size-fraction indicate that colloidal iron was eliminated from surface mixed layer more easily than particulate and soluble fractions. Therefore, particle and soluble iron efficiently remain in the mixed layer, probably due to the presence of suspended particles and naturally dissolved organic ligands. Our data suggest that iron removal through colloidal aggregation during phytoplankton bloom should be considered in the oceanic iron cycle.
Project(s): European Iron Enrichment Experiment in the Southern Ocean (EISENEX)
Coverage: West: 19.9993 * East: 21.1265 * South: -52.0162 * North: -47.6682
Size: 51 datasets
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Datasets listed in this Collection
Nishioka, J (2008): Depth profile of iron concentrations at GoFlow bottle station PS58/006-4, doi:10.1594/PANGAEA.700870
Nishioka, J (2008): Depth profile of iron concentrations at GoFlow bottle station PS58/007-6, doi:10.1594/PANGAEA.700871
Nishioka, J (2008): Depth profile of iron concentrations at GoFlow bottle station PS58/009-7, doi:10.1594/PANGAEA.700872
Nishioka, J (2008): Depth profile of iron concentrations at GoFlow bottle station PS58/011-7, doi:10.1594/PANGAEA.700873
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concentrations (2.0±1.1 nM) were measured in the surface water until 4 days after the first iron infusion. After every iron infusion, when high iron concentrations were observed before storm events, there was a significant correlation between colloidal and dissolved iron concentrations ([Colloidal Fe]=0.7627[Dissolved Fe]+0.0519, R2=0.9346). These results indicate that a roughly constant proportion of colloidal vs. dissolved iron was observed after iron infusion (~76%). Storm events caused a significant decrease in iron concentrations (<0.61 nM in dissolved iron) and changed the proportions of the three iron size-fractions (soluble, colloidal and labile particle). The changes in each iron size-fraction indicate that colloidal iron was eliminated from surface mixed layer more easily than particulate and soluble fractions. Therefore, particle and soluble iron efficiently remain in the mixed layer, probably due to the presence of suspended particles and naturally dissolved organic ligands. Our data suggest that iron removal through colloidal aggregation during phytoplankton bloom should be considered in the oceanic iron cycle.
Keywords: Southern ocean; Iron enrichment experiment; Size-fractionated iron; Iron speciation

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This is the start of a conversation

We welcome your comments, questions, and ideas!

Contact:
adam.farquhar {@} bl.uk
jan.brase {@} tib.uni-hannover.de

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- Adjust author policies to require clear unambiguous citations for datasets
- Integrate links to datasets into delivery platforms
- Collaborate to understand evolving roles and responsibilities among publishers, data centres, and libraries
- **Help me to rewrite this list!**

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