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### Datacite metadata creation tools

Paluch, Marcin

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<https://doi.org/10.4224/40002728>

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# **DataCite Metadata Creation Tools**

**DataCite Canada workshop  
CASRAI Reconnect Big Data 2013**

**Marcin Paluch  
National Research Council Canada  
16 October 2013**



# Agenda

Brief overview of the currently available tools for metadata generation.

- DataCite Metadata Input Form
- oaidc-datacite-web
- DataCite Metadata Creator Django
- DataCite Metadata Generator



DataCite  
International Data Citation

# DataCite Metadata Input Form

- Based on the MIIDI Metadata Editor, it is a web application which allows users to create metadata by populating text fields.
- Created by Tanya Gray & David Shotton from the University of Oxford.
- Uses XForms and Orbeon Forms and a Client-Server architecture.
- Supports DataCite Metadata Kernel version 2.2.
- Generated metadata can be saved to file & in other formats such as HTML, PDF, and RDF.
- Source Code & Instructions:

[www.miidi.org/wiki/index.php?title=MIIDI\\_Editor](http://www.miidi.org/wiki/index.php?title=MIIDI_Editor)

# DataCite Metadata Input Form

DataCite Mandatory Properties

[1] Identifier *A persistent identifier that identifies a resource. Currently, only DOI is allowed.*

[1.1] Identifier type

1. [2] Creator of Data Collection + *Name the creator(s) of the dataset being annotated, in priority order, or the corporate/institutional name or a personal name. Use + to add additional names if there are multiple authors.*

[2.1] Creator name *Format for personal names: FamilyName, GivenName.*

1. [2.2] Personal identifier + *(text string, e.g. 0137-1963-7688-2319)*

[2.2.1] Personal identifier scheme

1. [3] Title + *A name or title by which a resource is known.*

[3.1] Title type

[4] Publisher *(including archives as appropriate) or institution which submitted the work. Any others (citation, so cc of datasets, " of the role. Examples: World Data Center for Climate (WDCC); GeoForschungsZentrum to mean making the data available to the community of researchers.*

[5] Publication year *Year when the data is made publicly available. If an embargo period has been in effect, use the date*

# oaidc-datacite-web

- Light-weight web application for transforming an OAI DC record into DataCite Metadata Kernel version 2.2 XML.
- Created by Raffaele Messuti from the University of Bologna.
- Uses Ruby (version 1.9 required), Sinatra, and Redis-server.
- Harvests source records using OAI-PMH, then transforms them and mints DOIs.
- Source code & installation instructions:  
<https://github.com/atomotic/oaidc-datacite-web>

# DataCite Metadata Creator Django



- Prototype web application wizard for creating DataCite Metadata Kernel version 2.2 XML.
- Created by Christian Pietsch from the Bielefeld University Library
- Uses Python, Django 1.5, and SQLite 3.
- Client-Server architecture.
- Source code & installation instructions:  
<https://github.com/pietsch/DataCite-Metadata-Creator-Django>

# DataCite Metadata Generator

- Light-weight HTML form for creating DataCite Metadata Kernel **version 3** XML (all elements supported).
- Created by Marcin Paluch from the National Research Council.
- Uses HTML5, CSS3, JQuery 1.9.1
- Client side only, no application server required.
- Generates metadata from text box input and selected drop-downs.
- Download from:

<https://github.com/mpaluch/datacite-metadata-generator>



# DataCite Metadata Generator

## DataCite Metadata Generator - Kernel 3.0

Mandatory Elements	Metadata
<p>DOI: 10.5072/test.doi</p> <p>Title(s): Dataset title [titleType]</p> <p>Creator(s): Smith, J. 12345 pid [IDENTIFIER SCHEME URI]</p> <p>Publisher: Dataset Publisher</p> <p>Publication Year: 2012</p>	<pre>&lt;?xml version='1.0' encoding='UTF-8'?&gt; &lt;resource xmlns='http://datacite.org/schema/kernel-3' xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' xsi:schemaLocation='http://datacite.org/schema/kernel-3 http://schema.datacite.org/meta/kernel-3/metadata.xsd'&gt;   &lt;identifier identifierType='DOI'&gt;10.5072/test.doi&lt;/identifier&gt;   &lt;creators&gt;     &lt;creator&gt;       &lt;creatorName&gt;Smith, J.&lt;/creatorName&gt;       &lt;nameIdentifier nameIdentifierScheme='pid'&gt;12345&lt;/nameIdentifier&gt;     &lt;/creator&gt;   &lt;/creators&gt;   &lt;titles&gt;     &lt;title&gt;Dataset title&lt;/title&gt;   &lt;/titles&gt;   &lt;publisher&gt;Dataset Publisher&lt;/publisher&gt;   &lt;publicationYear&gt;2012&lt;/publicationYear&gt;   &lt;subjects&gt;     &lt;subject subjectScheme='LCCN'&gt;ice&lt;/subject&gt;     &lt;subject subjectScheme='LCCN'&gt;oceans&lt;/subject&gt;   &lt;/subjects&gt;   &lt;contributors&gt;     &lt;contributor contributorType='HostingInstitution'&gt;       &lt;contributorName&gt;DataCite Canada&lt;/contributorName&gt;     &lt;/contributor&gt;   &lt;/contributors&gt; &lt;/resource&gt;</pre>

Select All Reset Ready to Save



## Questions?





## DataCite Services

**DataCite Canada workshop  
CASRAI Reconnect Big Data 2013**

**Marcin Paluch  
National Research Council Canada  
16 October 2013**



# Agenda

Briefly describe current DataCite services and APIs available to data centres and the public.


- DataCite Metadata Store
- DataCite Metadata Search
- DataCite OAI-PMH Data Provider
- DataCite Content Resolver
- HTTP Content Negotiation
- Other DataCite Services
  - Statistics, Test Environment, Schema Repository

# DataCite Metadata Store



- Address: <https://mds.datacite.org>
- Used by data publishers/data centers to mint DOIs, register associated metadata.
- Requires DataCite account, not publicly accessible.
- DOI minting/metadata management can be done through either a web site or application programming interface (API).
- API allows for automation/integration into existing workflows.
- Web site currently available in English, French, and German.

# DataCite Metadata Store



## Metadata Store

DataCite

You are logged in as CISTI = CISTI.NRC | [My account](#) | [Logout](#)

**Dataset**

- Register new Dataset
- List all Datasets
- Find by DOI

**View**

- API documentation

▼ Welcome to DataCite Metadata Store

### What is this service?

The [DataCite Metadata Store](#) is a service for data publishers to mint DOIs and register associated metadata. The service requires organisations to first register for an account with a [DataCite member](#). For information on setting up an account, see our [Frequently asked questions](#).

### Who can use this service?

DataCite will work with data publishers - organisations that maintain and make available research data. In most cases this will be established and dedicated data centres, though institutional repositories and supplementary data archives are also considered data publishers. This service is aimed at scientific and research data publishers. Data generators, researchers for example, who wish to obtain DataCite DOIs will first establish the most appropriate data publisher for their data and deposit their datasets there. The publisher can then obtain DOIs from a DataCite member.




### I have datasets and want to mint DOIs! How can I use this service?

There are two steps. Firstly, you will need to register with our service. Please contact a DataCite member who will get in touch with you to discuss your eligibility, requirements and responsibilities. If you qualify, they will provide you a user name, password and other necessary information.


Secondly, you will need to use our [application programming interface \(API\)](#) to mint DOIs. It is recommended that you integrate minting and updating DOIs with your metadata management infrastructure. So if, for example, a URL changes, automatic notification will be pushed to our service and the updated URL will be used for resolving the DOI.

### How can I contact you?

For membership please contact [contact@datacite.org](mailto:contact@datacite.org). For technical information please email us at [tech@datacite.org](mailto:tech@datacite.org).

[Home](#) | Language:    | [Logout](#)

# DataCite Metadata Store



## Metadata Store

DataCite

You are logged in as CISTI ⇒ CISTI.NRC | [My account](#) | [Logout](#)

**Dataset**

- Register new Dataset
- List all Datasets
- Find by DOI

**View**

- API documentation

▼ Register new Dataset

DOI latency: Be aware that it can take up to 24 hours until a DOI update is globally known. New DOIs should be resolvable after about 5 minutes.

For testing purposes please only use our dedicated test prefix 10.5072




DOI:

Url:

XML upload:   Enter XML upload

Please select an XML file. It must reference a schema located under the following base URL: <http://schema.datacite.org/meta/>


XML:

[Home](#) | Language:    | [Logout](#)

# DataCite Metadata Store



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 **Metadata Store**

You are logged in as CISTI = CISTI.NRC | [My account](#) | [Logout](#)

**Dataset**  
Register new Dataset  
List all Datasets  
Find by DOI  
**View**  
API documentation

**Show Dataset**  
DOI: [10.5072/TEST.DOI](http://nparc.cisti-icist.nrc-cnrc.gc.ca/10.5072/TEST.DOI) ([handle record](#))  
DOI latency: Be aware that it can take up to 24 hours until a DOI update is globally known. New DOIs should be resolvable after about 5 minutes.  
Minted: 2013-09-30 15:50 UTC  
Updated: 2013-09-30 15:50 UTC  
Is Active: true  
Is Ref Quality: false

**Show Current Metadata**  
Metadata Version: 0  
Created: 2013-09-30 15:50 UTC  
XML:

```
<?xml version="1.0" encoding="UTF-8"?>

<resource xmlns="http://datacite.org/schema/kernel-3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://datacite.org/schema/kernel-3 http://schema.datacite.org/meta/kernel-3/metadata.xsd">
  <identifier identifierType="DOI">10.5072/test.doi</identifier>
  <creators>
    <creator>
      <creatorName>Paluch, M.</creatorName>
      <nameIdentifier nameIdentifierScheme="NRC PID">26708</nameIdentifier>
    </creator>
    <creator>
      <creatorName>Simth, J.</creatorName>
      <nameIdentifier nameIdentifierScheme="NRC PID">1234</nameIdentifier>
    </creator>
  </creators>
  <titles>
    <title>Test Title</title>
    <title titleType="AlternativeTitle">Alternate Test Title</title>
  </titles>
</resource>
```





# DataCite Metadata Store



## Metadata Store

DataCite

### Dataset

[Register new Dataset](#)































[List all Datasets](#)






[Find by DOI](#)

[View](#)

[API documentation](#)

### ▼ List all Datasets

DOI	Is Active	Is Ref Quality	Updated	Minted	Latest Metadata Version	
10.5072/TEST.DOI	true	false	2013-09-30 15:50 UTC	2013-09-30 15:50 UTC	0 (2013-09-30 15:50:31.0)	
10.4224/21268323	true	false	2013-08-13 13:35 UTC	2013-08-13 13:35 UTC	0 (2013-08-13 13:35:55.0)	
10.4224/21268328	true	false	2013-08-13 13:35 UTC	2013-08-13 13:35 UTC	0 (2013-08-13 13:35:54.0)	
10.4224/21268327	true	false	2013-08-13 13:35 UTC	2013-08-13 13:35 UTC	0 (2013-08-13 13:35:52.0)	
10.4224/21268324	true	false	2013-08-13 13:35 UTC	2013-08-13 13:35 UTC	0 (2013-08-13 13:35:51.0)	
10.4224/21268187	true	false	2013-06-18 12:23 UTC	2013-06-18 12:23 UTC	0 (2013-06-18 12:23:53.0)	
10.4224/21268191	true	false	2013-06-18 12:23 UTC	2013-06-18 12:23 UTC	0 (2013-06-18 12:23:52.0)	
10.4224/21268190	true	false	2013-06-18 12:23 UTC	2013-06-18 12:23 UTC	0 (2013-06-18 12:23:50.0)	
10.4224/21268052	true	false	2013-04-09 13:35 UTC	2013-04-09 13:35 UTC	0 (2013-04-09 13:35:26.0)	
10.4224/21268047	true	false	2013-04-09 13:35 UTC	2013-04-09 13:35 UTC	0 (2013-04-09 13:35:23.0)	
10.4224/21268045	true	false	2013-04-09 13:35 UTC	2013-04-09 13:35 UTC	0 (2013-04-09 13:35:22.0)	
10.4224/21263767	true	false	2013-04-09 13:35 UTC	2013-04-09 13:35 UTC	0 (2013-04-09 13:35:16.0)	
10.4224/21257783	true	false	2013-04-09 13:35 UTC	2013-04-09 13:35 UTC	0 (2013-04-09 13:35:13.0)	
10.4224/21263089	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:33.0)	
10.4224/21263086	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:32.0)	
10.4224/21263085	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:31.0)	
10.4224/21263084	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:29.0)	
10.4224/21263083	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:27.0)	
10.4224/21263082	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:26.0)	
10.4224/21263090	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:24.0)	
10.4224/21263081	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:23.0)	
10.4224/21262967	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:21.0)	
10.4224/21263766	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:20.0)	
10.4224/21262966	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:18.0)	
10.4224/21263091	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:17.0)	
10.4224/21257782	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:15.0)	
10.4224/21257780	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:14.0)	
10.4224/21256713	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:12.0)	
10.4224/21256712	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:11.0)	
10.4224/21243245	true	false	2013-03-26 13:39 UTC	2013-03-26 13:39 UTC	0 (2013-03-26 13:39:09.0)	

 List results per page: 30 50 100 | Page 1 of 62    



# DataCite Metadata Store API

- Address: <https://mds.datacite.org>
- RESTful web service implementation.
- Consists of three different resources:
  - /doi
  - /metadata
  - /media
- Accepts HTTPS calls only and uses HTTP Basic authentication.
- Accepts the same credentials as the web site.

# DataCite Metadata Store API

- /doi resource address: <https://mds.datacite.org/doi>
- Accepts GET and POST service requests.
- GET:
  - Returns the URL associated with a given DOI.
  - Make GET call to: <https://mds.datacite.org/doi/{doi}>
- POST:
  - Will mint new DOI if specified DOI doesn't exist. Will attempt to update URL if it does exist.
  - Make POST call to: <https://mds.datacite.org/doi>
  - Request body is UTF-8 encoded and must contain:  
doi={doi}  
url={url}

# DataCite Metadata Store API

- /metadata resource address:  
<https://mds.datacite.org/metadata>
- Accepts GET, POST, and DELETE requests.
- GET:
  - Returns most recent version of the metadata for the DOI.
  - Make GET call to: <https://mds.datacite.org/metadata/{doi}>
- POST:
  - Stores new version of metadata for the DOI.
  - Make POST call to: <https://mds.datacite.org/metadata>
  - Request body is UTF-8 encoded and must contain valid XML.
- DELETE
  - Marks a dataset as “inactive”.
  - Make DELETE call to: <https://mds.datacite.org/metadata/{doi}>
  - POST new metadata to “activate” again.



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# DataCite Metadata Store API

- /media resource address: `https://mds.datacite.org/media`
- Accepts GET and POST requests.
- GET:
  - Returns a list of pairs of media type and URL for the DOI.
  - Make GET call to: `https://mds.datacite.org/media/{doi}`
  - Example response body:  
`application/pdf=http://my.landingpage.org/document.pdf`
- POST:
  - Will add/update media type/URL pairs for the DOI.
  - Make POST call to: `https://mds.datacite.org/media/{doi}`
  - Request body is UTF-8 encoded and contains one or more lines of:  
`{mime-type}={url}`
  - Example request body:  
`application/pdf=http://my.landingpage.org/document.pdf`  
`application/xml=http://my.landingpage.org/document.xml`

# DataCite Metadata Store API

Response Code	Description
200 OK	Operation successful
201 Created	Operation successful (POST requests)
204 No Content	DOI exists but cannot be resolved
401 Unauthorized	No credentials provided, account doesn't exist
403 Forbidden	Login problem, dataset belongs to another party, quota exceeded
404 Not Found	DOI does not exist in database
410 Gone	Requested dataset is inactive
412 Precondition Failed	Metadata must be uploaded before DOI minting
500 Internal Server Error	A system error occurred

# DataCite Metadata Store API

- Code examples are available for Python, Perl, and Java

- Python/Perl:

- <https://github.com/datacite/mds/tree/master/client>

- Java:

- <https://github.com/datacite/integration-test>

- <https://github.com/mpaluch/datacite-demo>

- Full API documentation is available at:

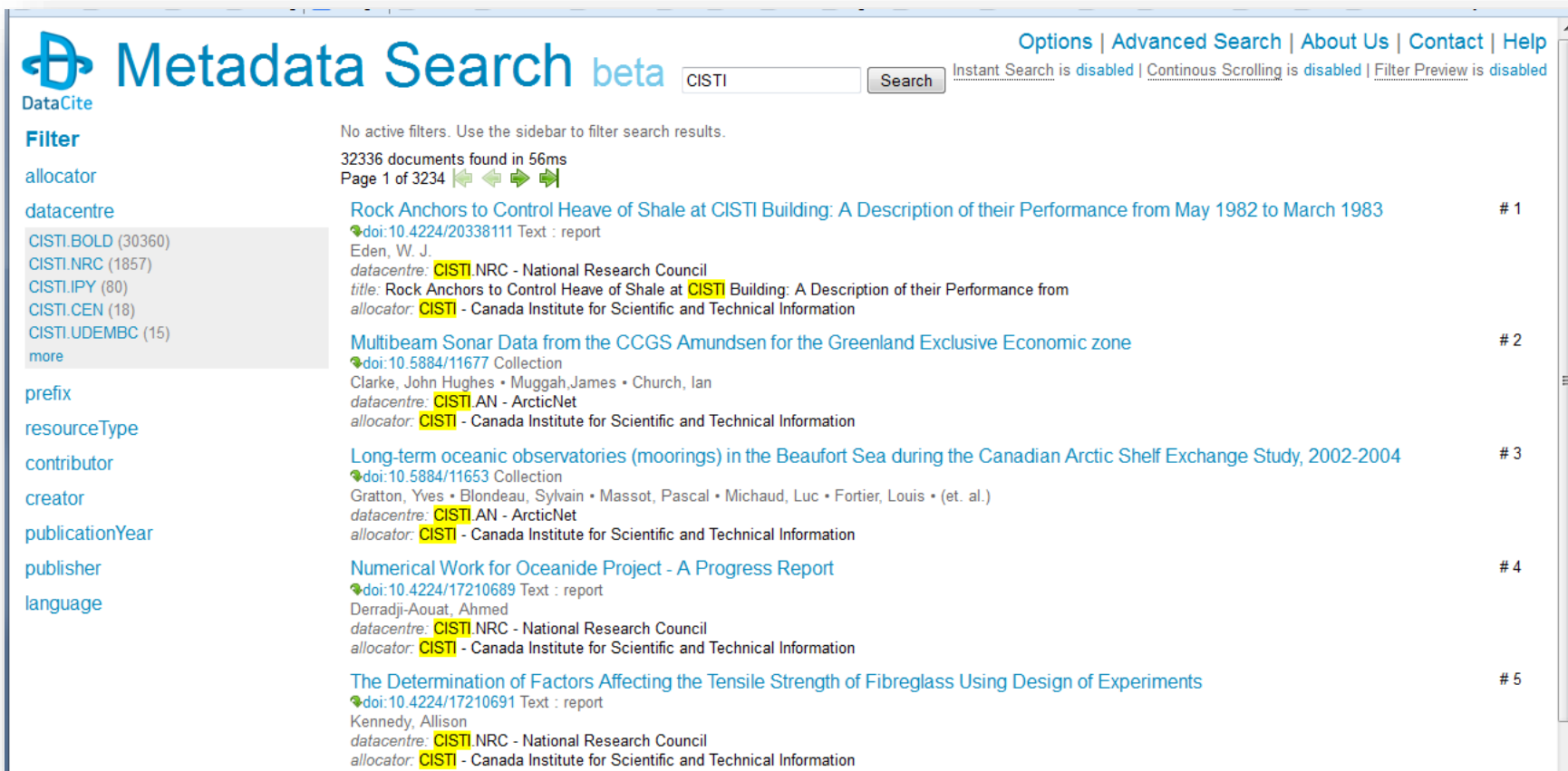
- <https://mds.datacite.org/static/apidoc>

# DataCite Metadata Search

- Search engine for all metadata registered/stored in the DataCite Metadata Store.
- Address: <http://search.datacite.org>
- Also consists of a web site and an API.
- Web site allows basic & advanced searching, and results filtering.



# DataCite Metadata Search



The screenshot shows the DataCite Metadata Search beta interface. At the top, there is a navigation bar with links for Options, Advanced Search, About Us, Contact, and Help. Below this, the search bar contains the text 'CISTI' and a 'Search' button. To the left of the search bar, there is a sidebar with a 'Filter' section containing various filters like allocator, datacentre, prefix, resourceType, contributor, creator, publicationYear, publisher, and language. The main content area displays search results for 'CISTI'. It shows a total of 32336 documents found in 56ms, with the current page being 1 of 3234. The results are listed in a table with columns for the document title, DOI, and a numeric identifier. The first five results are:

Document Title	DOI	Identifier
Rock Anchors to Control Heave of Shale at CISTI Building: A Description of their Performance from May 1982 to March 1983	doi:10.4224/20338111 Text : report Eden, W. J. datacentre: CISTI.NRC - National Research Council title: Rock Anchors to Control Heave of Shale at CISTI Building: A Description of their Performance from allocator: CISTI - Canada Institute for Scientific and Technical Information	# 1
Multibeam Sonar Data from the CCGS Amundsen for the Greenland Exclusive Economic zone	doi:10.5884/11677 Collection Clarke, John Hughes • Muggah, James • Church, Ian datacentre: CISTI.AN - ArcticNet allocator: CISTI - Canada Institute for Scientific and Technical Information	# 2
Long-term oceanic observatories (moorings) in the Beaufort Sea during the Canadian Arctic Shelf Exchange Study, 2002-2004	doi:10.5884/11653 Collection Gratton, Yves • Blondeau, Sylvain • Massot, Pascal • Michaud, Luc • Fortier, Louis • (et. al.) datacentre: CISTI.AN - ArcticNet allocator: CISTI - Canada Institute for Scientific and Technical Information	# 3
Numerical Work for Oceanide Project - A Progress Report	doi:10.4224/17210689 Text : report Derradji-Aouat, Ahmed datacentre: CISTI.NRC - National Research Council allocator: CISTI - Canada Institute for Scientific and Technical Information	# 4
The Determination of Factors Affecting the Tensile Strength of Fibreglass Using Design of Experiments	doi:10.4224/17210691 Text : report Kennedy, Allison datacentre: CISTI.NRC - National Research Council allocator: CISTI - Canada Institute for Scientific and Technical Information	# 5

# DataCite Metadata Search API

- Directly perform the same searches as through the website.
- Address: <http://search.datacite.org/api>
- Return results in XML, CSV, and JSON.
- Supports Solr common query parameters such as:
  - Search terms: `q={search term(s)}`
  - Fields to return: `fl={field1,field2,field3}`
  - Return format: `wt={csv or xml or json}`
  - Number of rows to return: `rows={#}`
  - Example:  
<http://search.datacite.org/api?q=ocean+ice&fl=doi,datacentre,title&rows=5&wt=json>

# DataCite OAI-PMH Data Provider



- Allows bulk harvesting of records stored in the DataCite Metadata Store.
- Address: <http://oai.datacite.org/>
- Meant to be used by OAI-PMH compliant harvesters but can be used by any application that issues OAI-PMH requests.
- Each data centre and allocator are represented by a set in the repository.
- Supports standard selective harvesting by dates, sets, and metadata formats.
- Current formats: oai\_dc, oai\_datacite, datacite

# DataCite OAI-PMH Data Provider

- Additionally supports harvesting by arbitrary Solr queries.
  - Take a Solr query (q and fq parameters supported)
  - Encode it using Base64 for URL,
  - Append encoded string to the set spec preceded by a tilde (~).
- Example:
  - Query: q=ocean+ice
  - Base64 for URL encoded: cT1vY2VhbitpY2U
  - Add to set spec preceded by a tilde(~):

[http://oai.datacite.org/oai?verb=ListRecords&metadataPrefix=oai\\_dc&set=~cT1vY2VhbitpY2U](http://oai.datacite.org/oai?verb=ListRecords&metadataPrefix=oai_dc&set=~cT1vY2VhbitpY2U)



DataCite  
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# DataCite Content Resolver

- Provides direct access to underlying datasets or other custom metadata formats created using the Media API.
- Address: <http://data.datacite.org>
- Can be used with regular web browser or other clients, no need to set an HTTP Accept Header.
- Must construct a specific link:  
`http://data.datacite.org/{MIME_TYPE}/{DOI}`
- The media from the URL associated with the requested MIME type is returned.
- Only available for DataCite DOIs currently.
- Example:  
<http://doi.org/10.4224/21268323>  
<http://data.datacite.org/application/pdf/10.4224/21268323>

# HTTP Content Negotiation

- Collaborative effort between CrossRef and DataCite. Endorsed by the International DOI Foundation.
- Requires a client which can specify an HTTP Accept Header. Usually not your typical web browser.
- Accessed by resolving the DOI and specifying the data format you want to receive back in the accept header.
- Instead of being forwarded to the target link, DOI metadata is returned in your requested format.
- Works for any registered DOI.

```
curl -LH "Accept: application/rdf+xml"  
http://doi.org/10.1126/science.169.3946.635
```

# HTTP Content Negotiation

Format	Content Type	CrossRef DOI	DataCite DOI
RDF XML	application/rdf+xml	✓	✓
RDF Turtle	text/turtle	✓	✓
Citeproc JSON	application/vnd.citationstyles.csl+json	✓	✓
Formatted text citation	text/x-bibliography	✓	✓
RIS	application/x-research-info-systems	✓	✓
BibTeX	application/x-bibtex	✓	✓
CrossRef Unixref XML	application/vnd.crossref.unixref+xml	✓	✗
DataCite XML	application/vnd.datacite.datacite+xml	✗	✓



# HTTP Content Negotiation

- Citation Formatter
  - Returns a citation for a DOI in various selected formats.
  - Uses specific accept header with additional parameters (style & locale):

```
curl -LH "Accept: text/x-bibliography; style=apa"  
http://doi.org/10.1126/science.169.3946.635
```
  - Works for both CrossRef and DataCite DOIs.
  - Can be done from a web site:  
<http://crosscite.org/citeproc/>
- Full HTTP Content Negotiation documentation:  
<http://www.crosscite.org/cn/>



# Other DataCite Services

- DataCite Schema Repository
  - Provides access to all DataCite XML schemas:  
<http://schema.datacite.org>
- DataCite Statistics
  - Provides statistics on DOI registrations and resolutions:  
<http://stats.datacite.org>
- DataCite Test Environment
  - Test versions of all services: <http://test.datacite.org>
- DataCite on GitHub
  - Application source code: <http://github.com/datacite/>
- Technical information contact:
  - DataCiteTech.CISTI@nrc-cnrc.gc.ca



## Questions?

