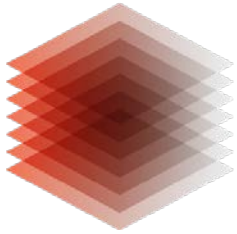
LEIBNIZ-INFORMATIONSZENTRUM
TECHNIK UND NATURWISSENSCHAFTEN
UNIVERSITÄTSBIBLIOTHEK



TIB

Digital Object Identifier (DOI): Enhancing Publication, Discovery and Reuse of Research Content

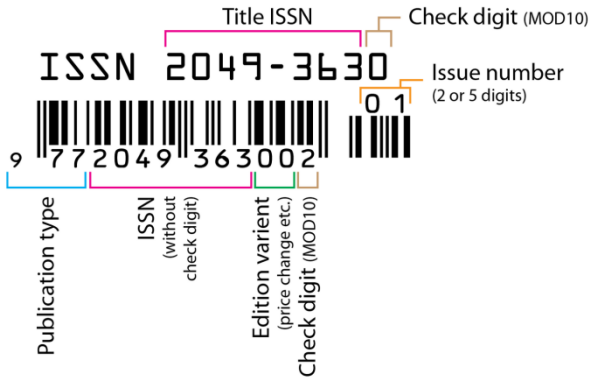
Arbicon Conference 2017
Санкт-Петербург, 26. - 27. June 2016
Britta Dreyer

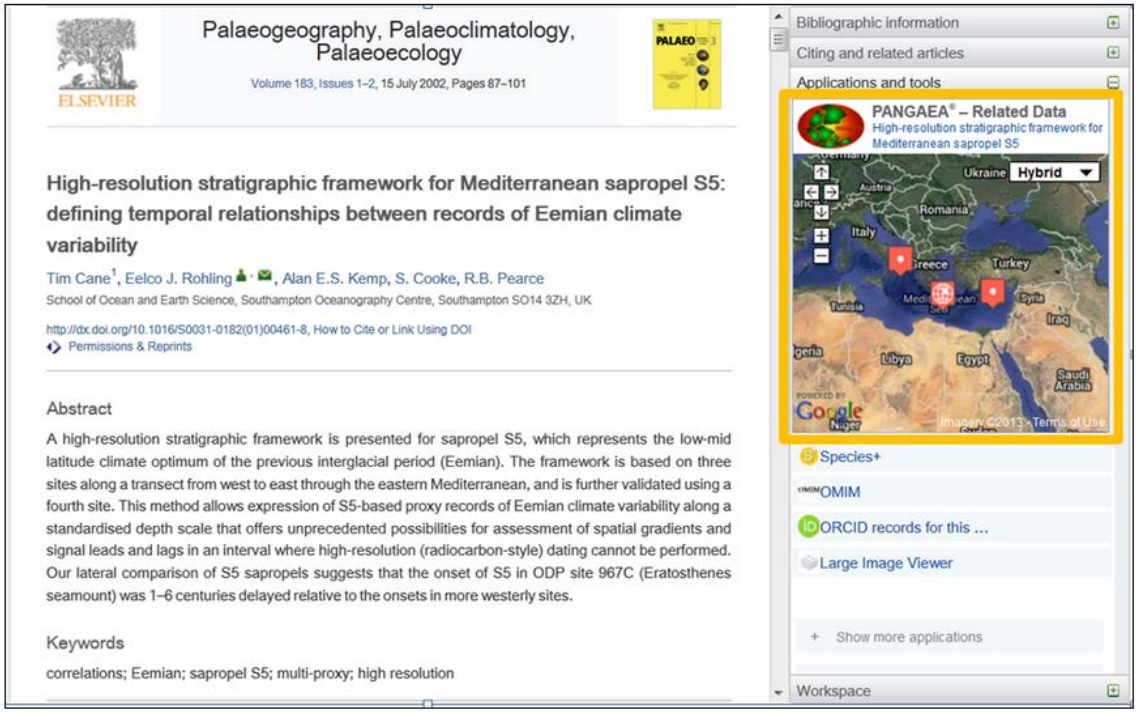
Agenda

1. Digital Persistent Identifier
2. DOI and DataCite
3. DataCite Services
4. Linking Scholarly Content

Digital Persistent Identifier

ISBN and ISSN are here since 1970s → **Hyperlinking** not possible→ Granularity options





https://www.elsevier.com/connect/bringing-data-to-life-with-data-linking

For a landing page of this dataset please follow http://dx.doi.org/10.1594/PANGAEA.849289

Quelle: images labeled for reuse http://images.google.de/

Digital Object Identifier (DOI)

- Persistent Identifier and hyperlink
- Typically expressed as a URL
- Specifies the resource – not the location
- Has metadata attached
- ANSI/NISO Z39.84-2000 (reconfirmed 2005, 2010)
- Standard DIN ISO 26324 (2012)
- Unique alphanumeric string assigned by a registration agency

DOI Name				
Directory indicator	.	Registrant code	/	Suffix
Example: 10	.	1234	/	data567

DataCite
FIND, ACCESS, AND REUSE DATA

FORCE11
The Future of Research Communications and e-Scholarship

NISO
How the information world CONNECTS

RDA
RESEARCH DATA ALLIANCE

Focus on the scholary

DOI Registration Agencies

Chinese library for digital resources	Airiti, Inc.	Crossref
Chinese knowledge database	China National Knowledge Infrastructure (CNKI)	DataCite
Universal unique identifier system for movie and television assets	EIDR (Entertainment Identifier Registry)	ISTIC (The Institute of Scientific and Technical Information of China)
DOI names for Japanese journal articles	JaLC (Japan Link Center)	Korea Institute of Science and Technology Information (KISTI)
mEDRA is the European DOI Registration Agency for some European countries.	mEDRA (Multilingual European DOI Registration Agency)	OP (Publications Office of the European Union)

Focus on the journal publisher community

DOI names for Chinese journals, data sets and dissertations

KISTI is a government-funded research institute

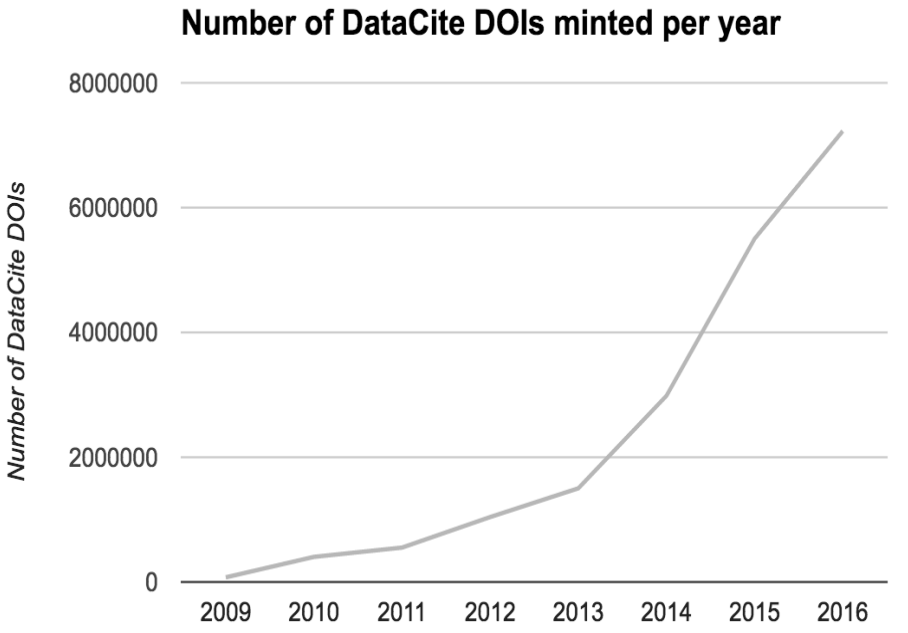
Publishing house of the EU institutions, responsible for publishing and distributing EU publications

A quick snapshot

DataCite
FIND, ACCESS, AND REUSE DATA

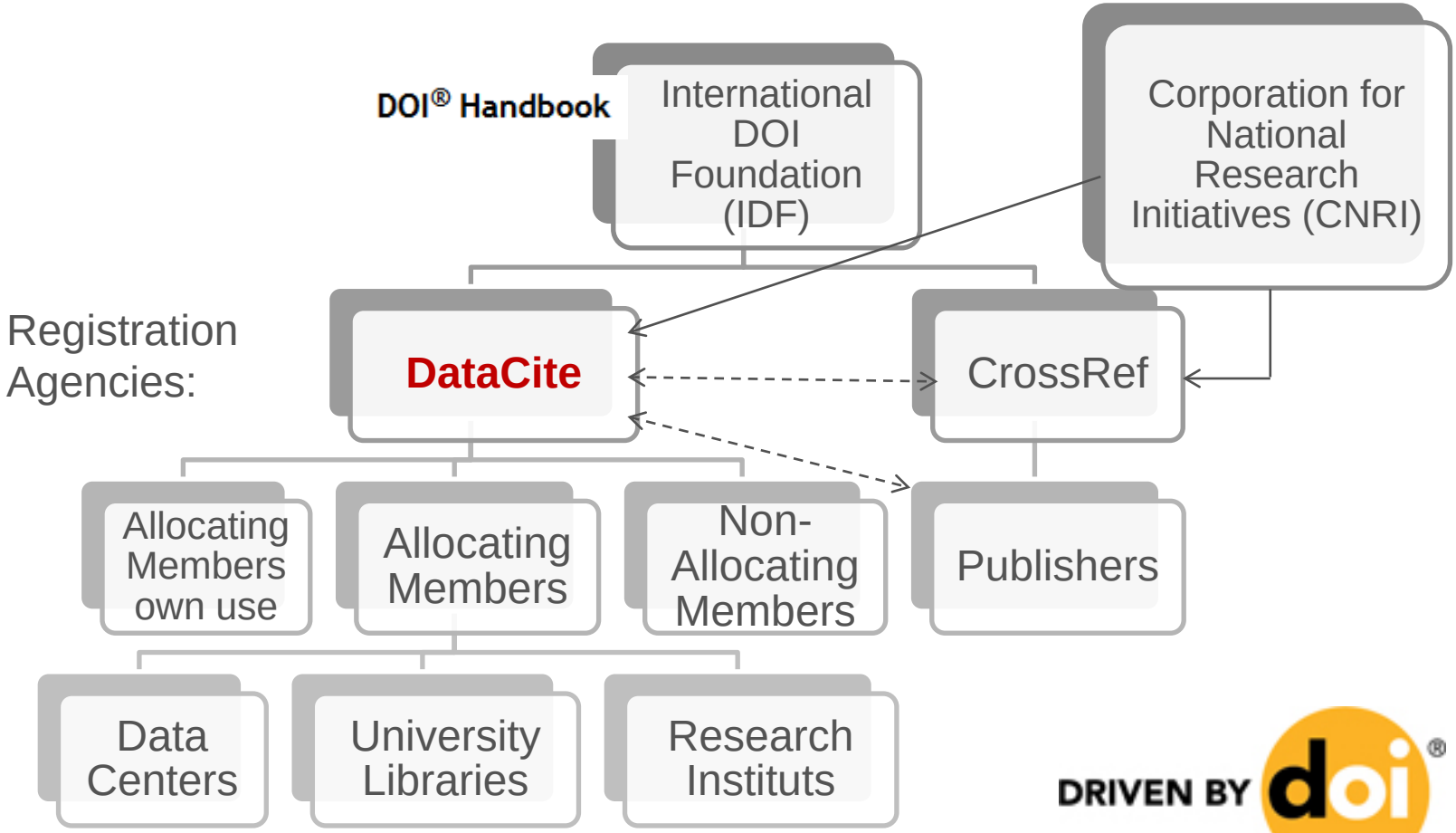
TIB

- Not-for-profit global initiative founded in 2009
- Business office at TIB
- > 50 members worldwide
- > 1200 data centres
- > 10 million DOIs created
- 2.15 million in 2016
- More than 8 million resolutions/month



"Our goal is to help the research community locate, identify, and cite research data with confidence."

DataCite Structure



DRIVEN BY doi®

DataCite
FIND, ACCESS, AND REUSE DATA

DataCite Members

DataCite
FIND, ACCESS, AND REUSE DATA

DataCite Staff

Trisha Cruse (Berkeley, USA)
Executive Director

Martin Fenner (Hannover)
Technical Director

Laura Rueda (Madrid, Spanien)
Communications Director

Kristian Garza (Berlin)
Application Developer

Britta Dreyer (Hannover)
Business Manager

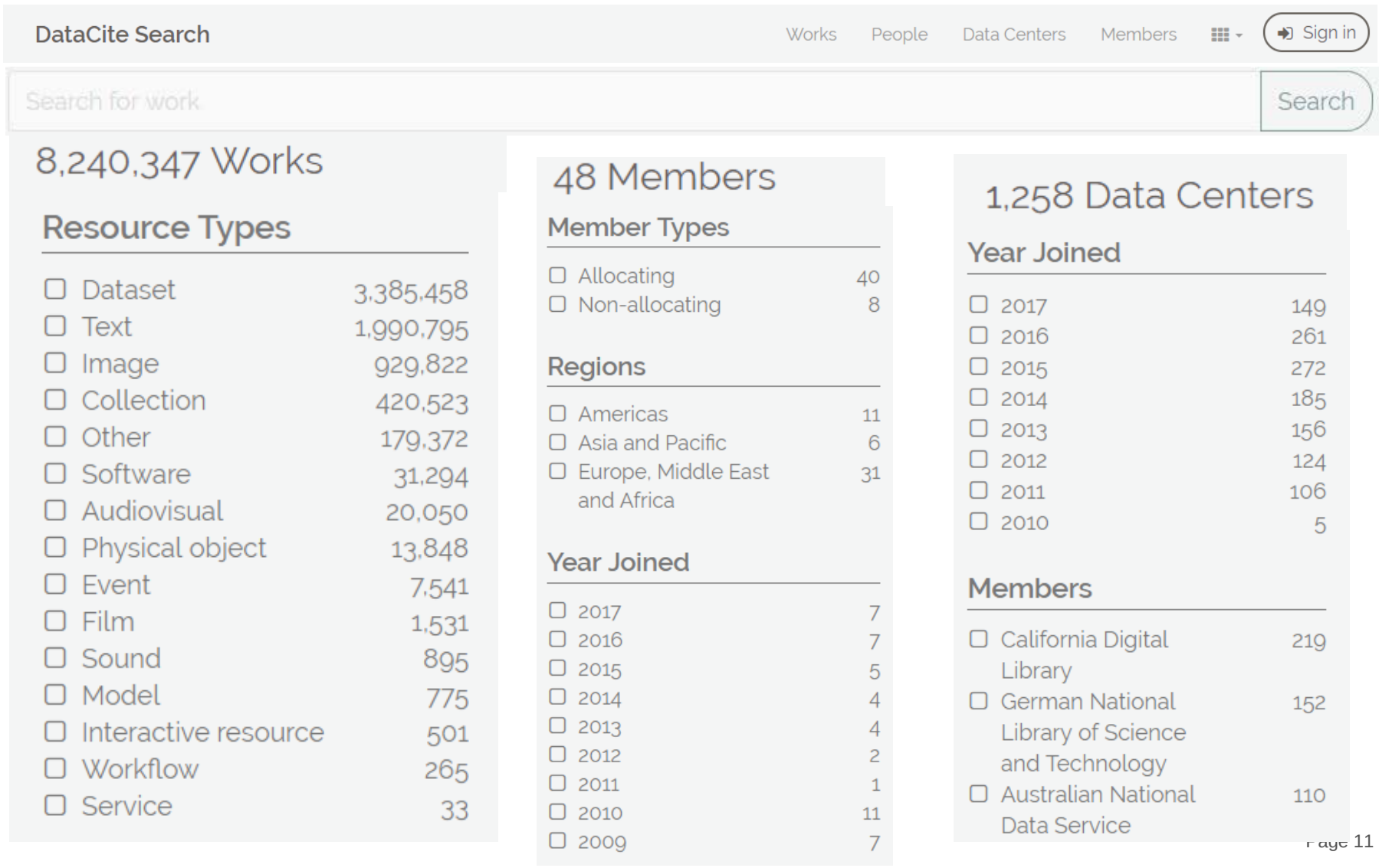
https://www.datacite.org/staff.html

DataCite Services

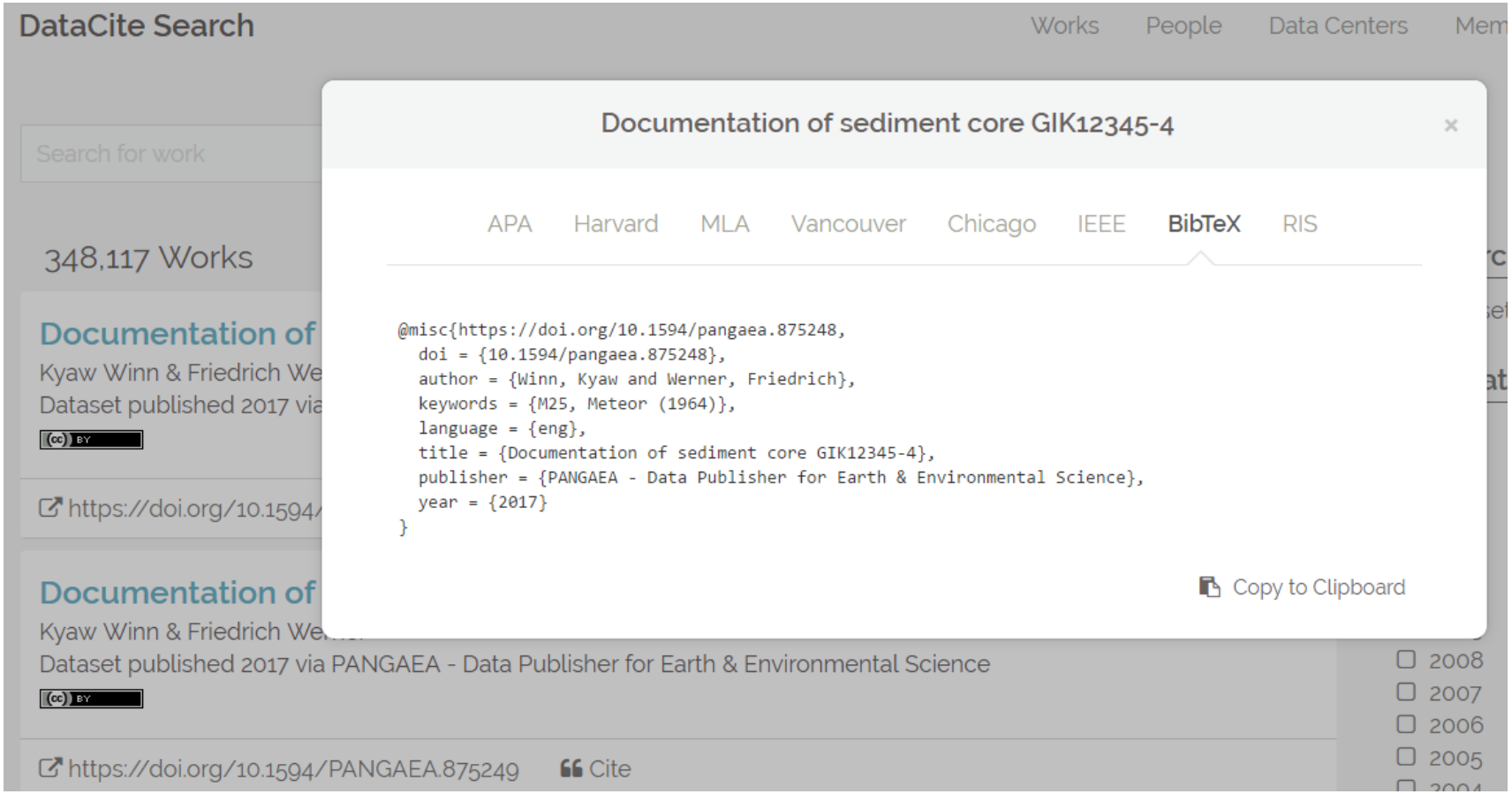
ASSIGN DOIS	https://mds.datacite.org https://api.labs.datacite.org
METADATA SEARCH	https://search.datacite.org/
EVENT DATA	https://dlm.datacite.org https://ls.datacite.org
DATA METRICS	https://makedatacount.org/
PROFILES	https://profiles.datacite.org
RE3DATA	http://re3data.org
CITATION FORMATTER	http://crosscite.org/citeproc/
STATISTICS	http://stats.datacite.org
SERVICE STATUS	http://stats.datacite.org http://twitter.com/datacitetech
OAI-PMH	http://oai.datacite.org
Content Resolver	http://data.datacite.org/
API	https://api.datacite.org/

DataCite
FIND, ACCESS, AND REUSE DATA

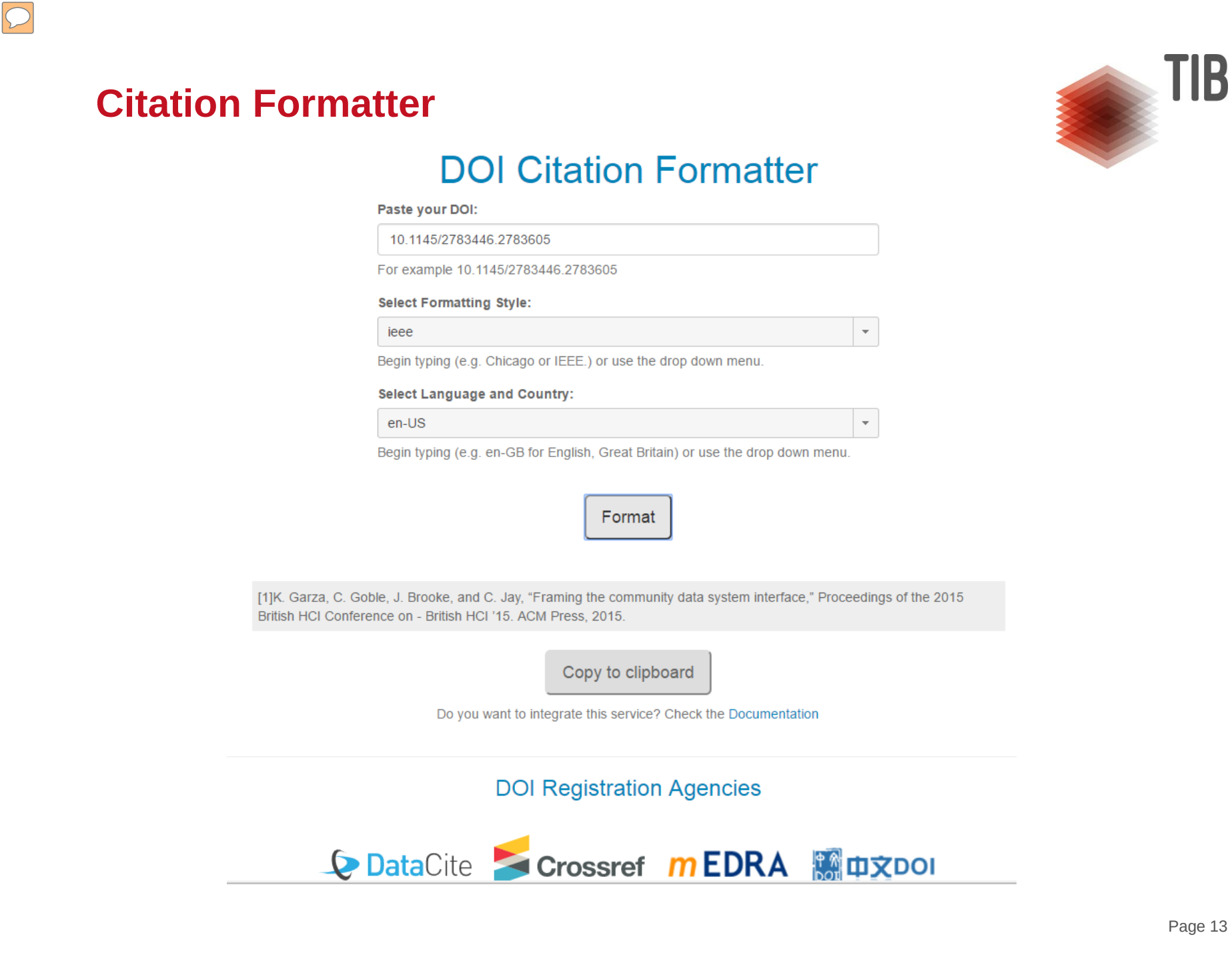
DataCite Search



Citation Support in DataCite Search



Citation Formatter



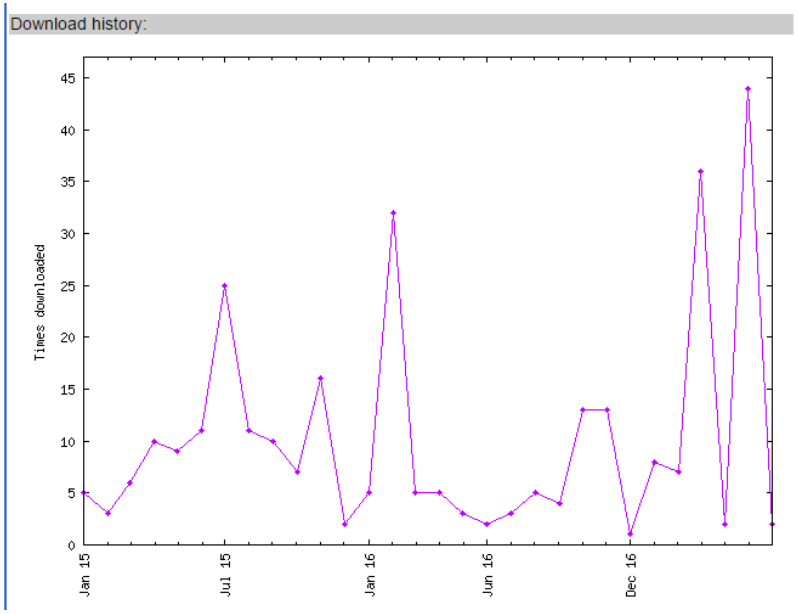
Citation Recommendation

Creator (PublicationYear): Title. Version.
Publisher. ResourceType. Identifier

Example:

Lux, T. (2005): Studies for a Time Projection Chamber for the International Linear Collider and Measurement of Beauty Cross Sections in Deep Inelastic Scattering at HERA.University of Hamburg.Dissertation. 10.3204/DESY-THESIS-2005-019

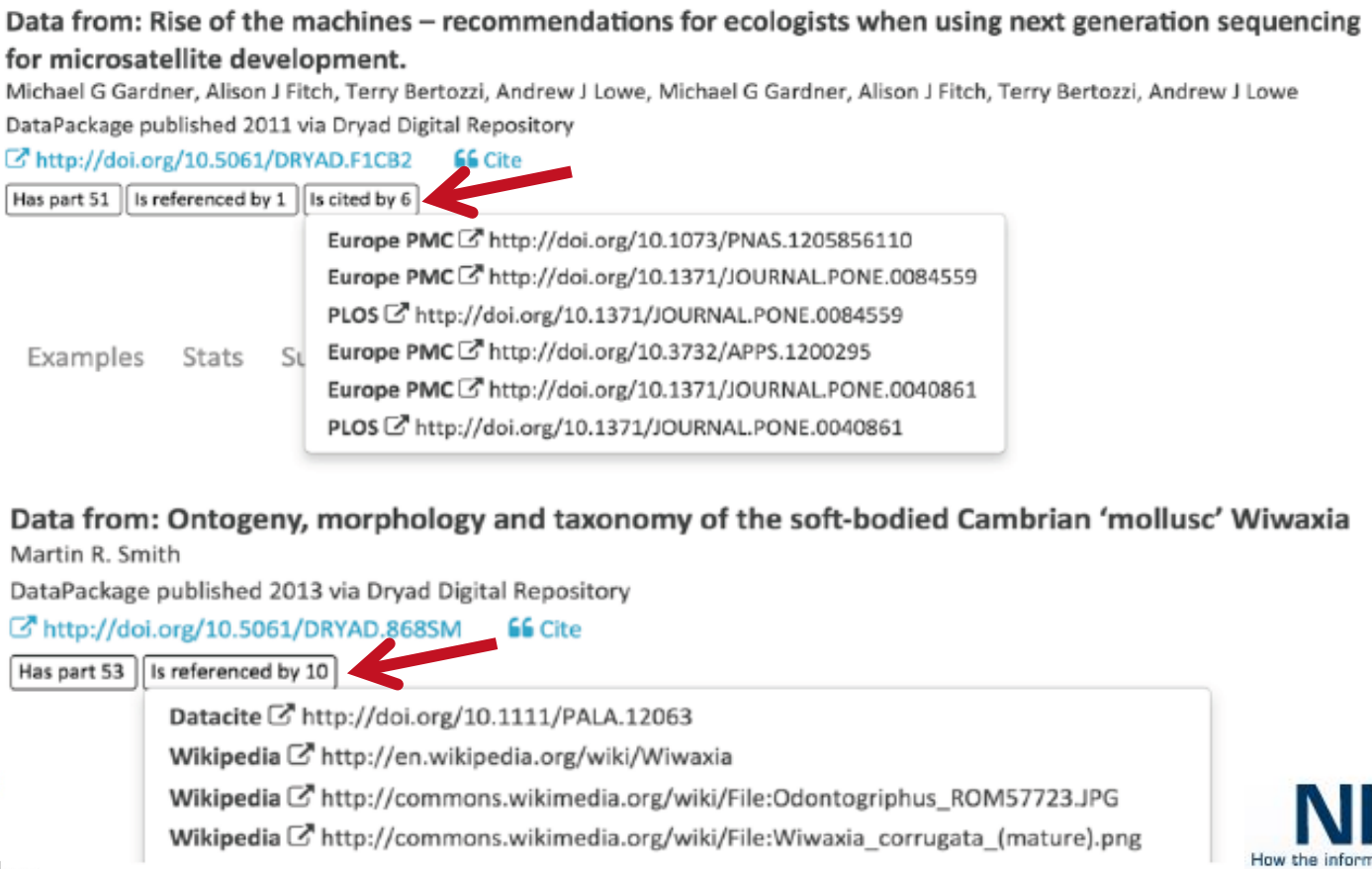
Usage statistics:



DataCite
FIND, ACCESS, AND REUSE DATA

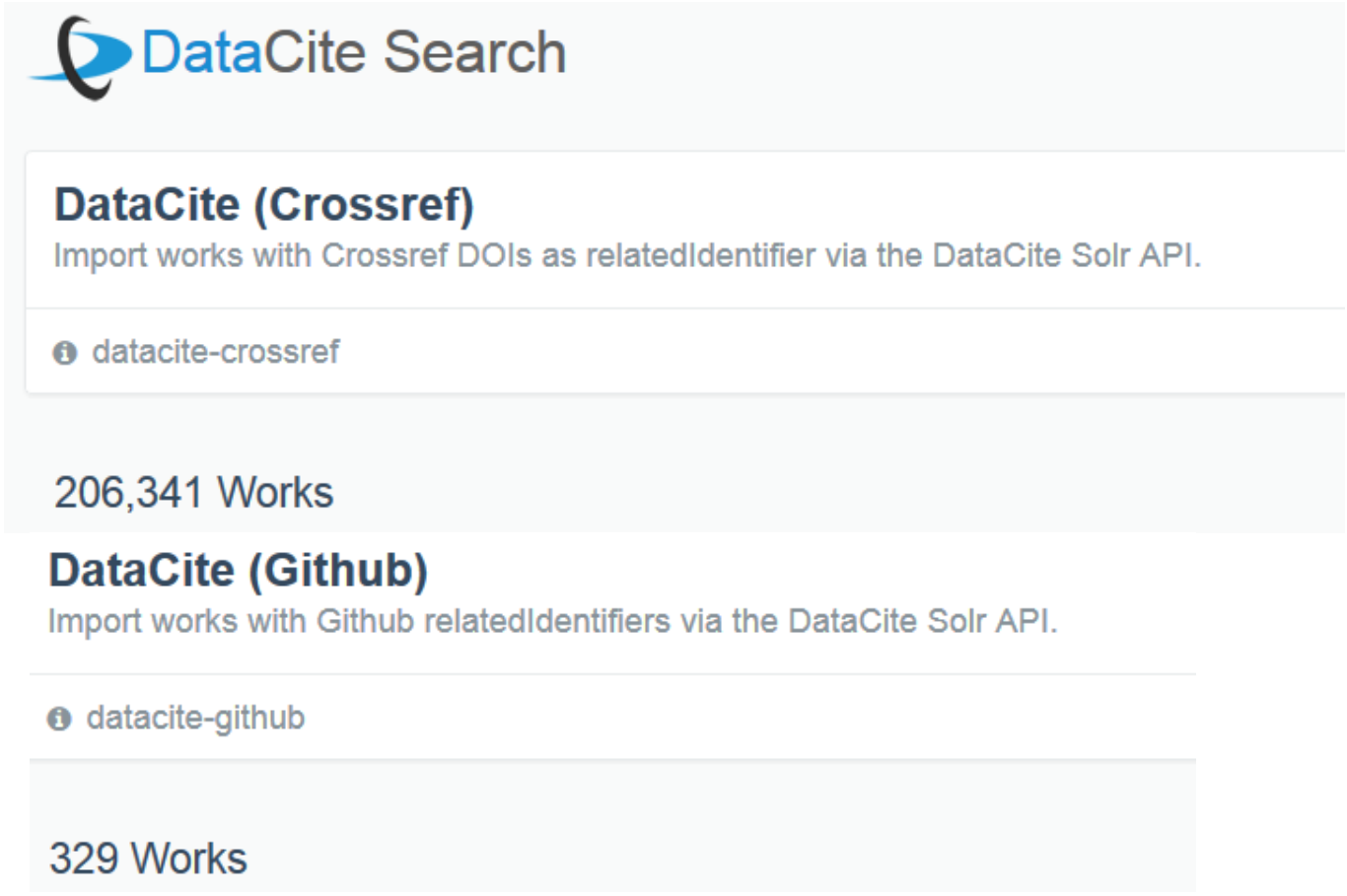
Data Level Metrics

- Collects events found via the relatedIdentifier and nameIdentifier attributes of DataCite Metadata



Event Data

- Collect events around scholarly content (DOI Event Tracker)



Making Data Count: Promoting a New Normal

Project: **Making Data Count: Promoting a New Normal**

ALFRED P. SLOAN FOUNDATION

Funding: **750 K for 2 years** (June 2017 – June 2019)

Partners: **CDL, DataCite and DataONE**

- Collaborate with other data metrics initiatives: Crossref Event Data, JISC IRUS UK, NISO Altmetrics working group, RDA/WDS Scholix, etc.
- Start: RDA BoF with relevant stakeholders

Making Data Count: Promoting a New Normal

….will develop and deploy the social and technical infrastructure necessary to elevate data to a first-class research output.

1. Develop and publish a **COUNTER code** of practice recommendations for how data usage is measured

2. **Deploy central online hub** for acquiring, managing and presenting DLMs

3. **Integrate new sources and clients of aggregated metrics**

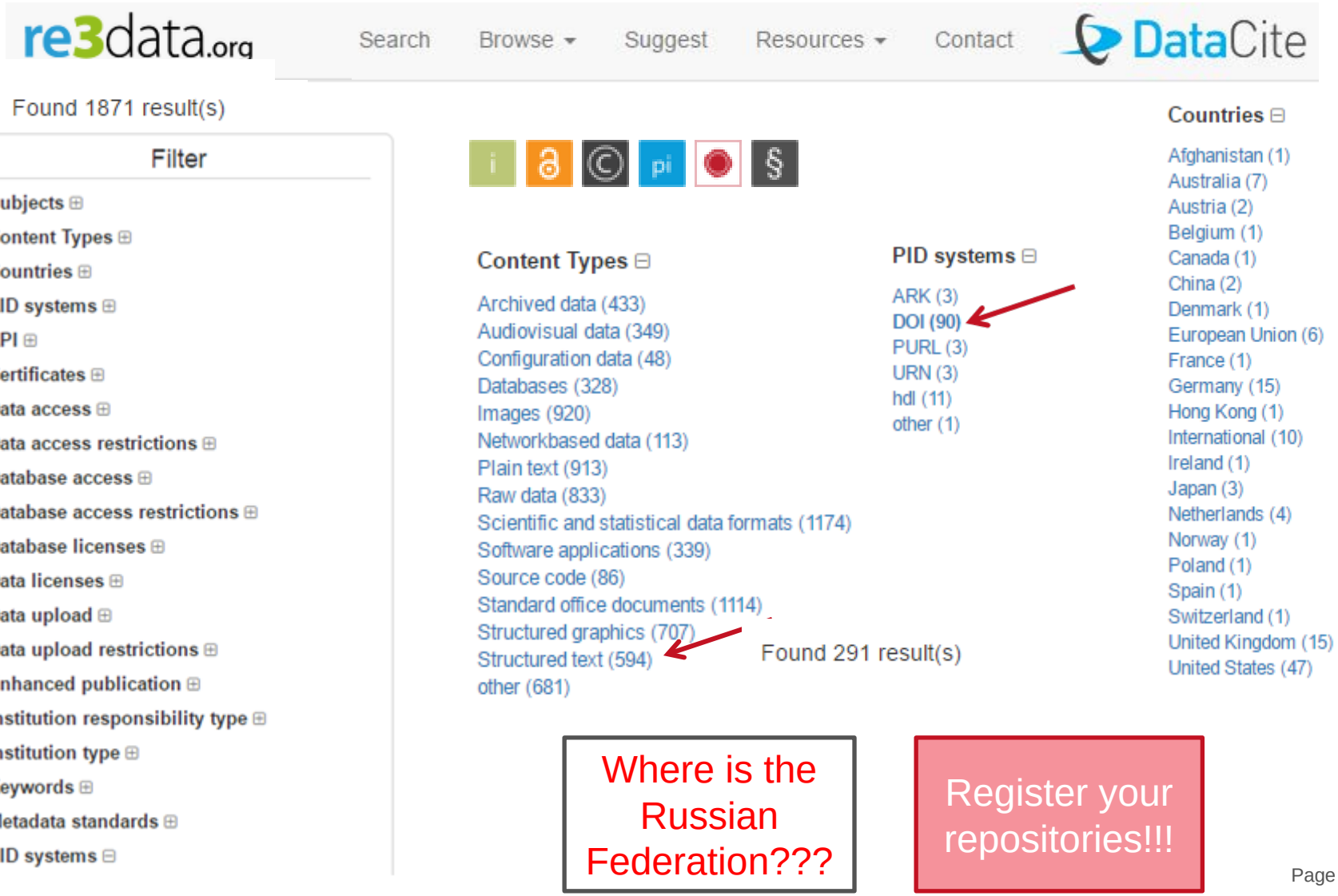
Data Usage Stats	Data Citations
DataONE Federation	PubMed Central
DOI resolver logs via DataCite	Crossref
Institutional repository (Re3data)	Europe PMC

4. Encourage growth and uptake of DLMs through an engaged stakeholder community

ORCID Profile

- Automatic ORCID profile update when DOI is minted (ORCID push)

- DataCite – CrossRef – ORCID collaboration


re3data.org
Search
Browse
Suggest
Resources
Contact
DataCite
Found 1871 result(s)
Filter
Subjects
Content Types
Countries
AID systems
API
Certificates
Data access
Data access restrictions
Database access
Database access restrictions
Database licenses
Data licenses
Data upload
Data upload restrictions
Enhanced publication
Institution responsibility type
Institution type
Keywords
Metadata standards
PID systems
Content Types
Archived data (433)
Audiovisual data (349)
Configuration data (48)
Databases (328)
Images (920)
Networkbased data (113)
Plain text (913)
Raw data (833)
Scientific and statistical data formats (1174)
Software applications (339)
Source code (86)
Standard office documents (1114)
Structured graphics (707)
Structured text (594)
other (681)
PID systems
ARK (3)
DOI (90)
PURL (3)
URN (3)
hdl (11)
other (1)
Found 291 result(s)
Countries
Afghanistan (1)
Australia (7)
Austria (2)
Belgium (1)
Canada (1)
China (2)
Denmark (1)
European Union (6)
France (1)
Germany (15)
Hong Kong (1)
International (10)
Ireland (1)
Japan (3)
Netherlands (4)
Norway (1)
Poland (1)
Spain (1)
Switzerland (1)
United Kingdom (15)
United States (47)
Where is the Russian Federation???
Register your repositories!!!

Metadata

Recommended "**super set**" of properties and sub-properties:

Mandatory	Recommended	Optional
Identifier	Subject	FundingReference
Creator mit ORCID	Contributor	Alternate ID
Title	Date	Size
Publisher	Related identifier	Format
Publication year	Description	Version
Resource Type	GeoLocation	Rights

https://schema.datacite.org

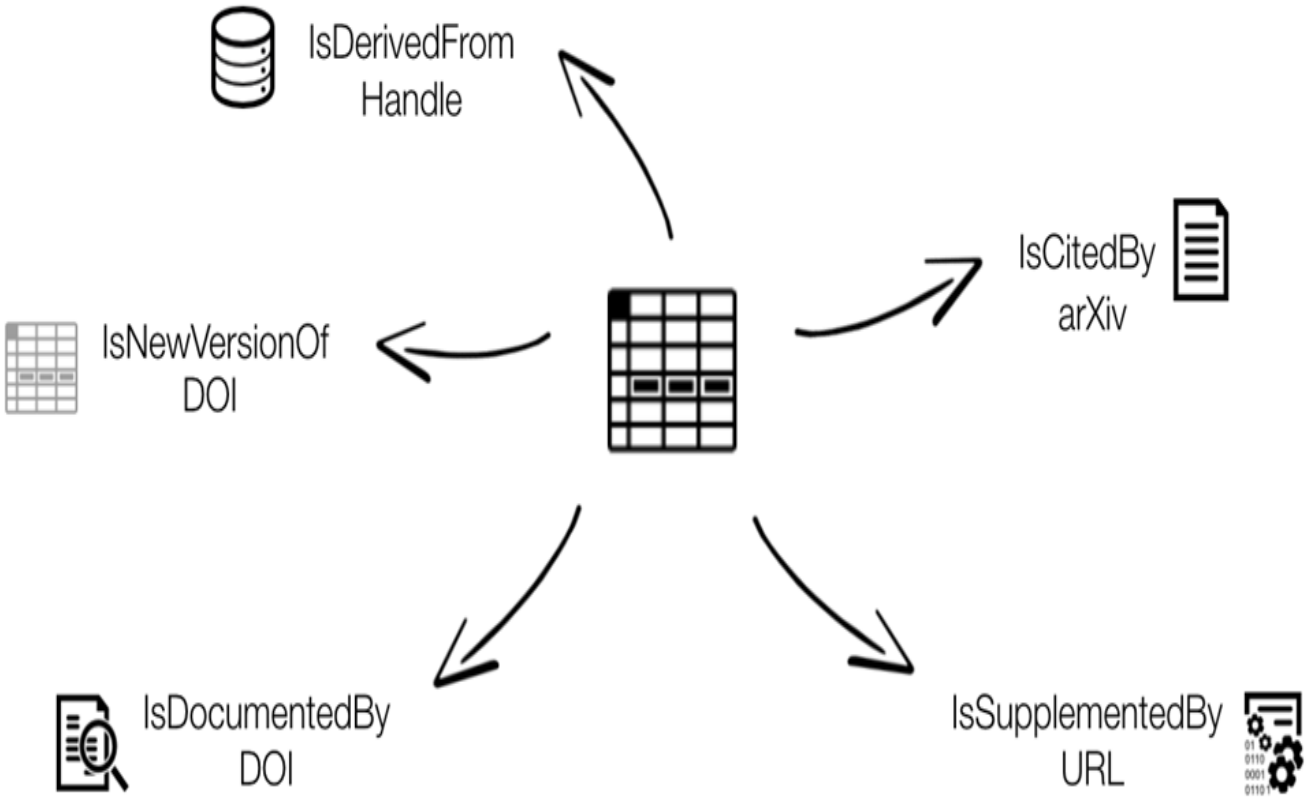
Current version 4.0
XML examples available

Disciplinary Metadata: http://www.dcc.ac.uk/resources/metadata-standards

Findable, Accessible, Interoperable, and Re-usable = FAIR

http://schema.datacite.org/ https://www.force11.org/group/fairgroup/fairprinciples

Relation types



https://project-thor.readme.io/docs/presentations

Strong Collaborations

TIB

ORCID
Connecting Research and Researchers

People and Organizations

connect

Research content

Journal article

DataCite
FIND, ACCESS, AND REUSE DATA

create

DataCite DOIs

connect & track

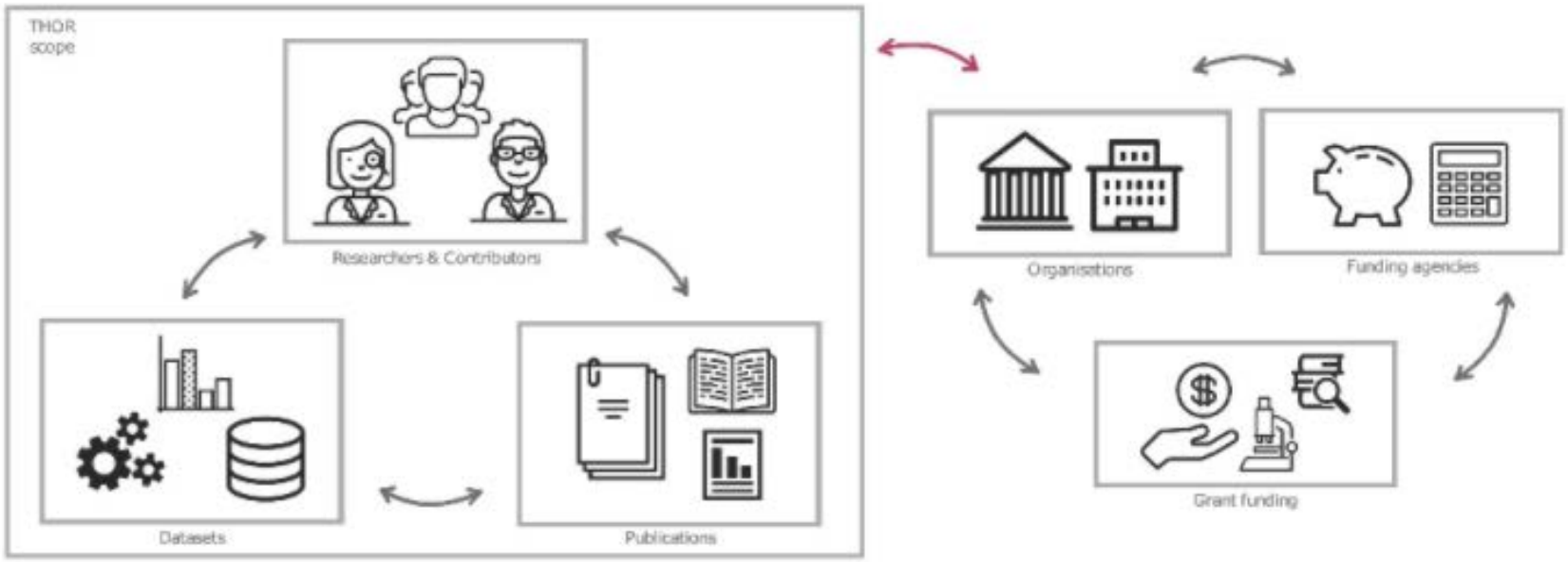
Crossref

Services:
Citation Formatter
Content Negotiation
Event Data

ODIN

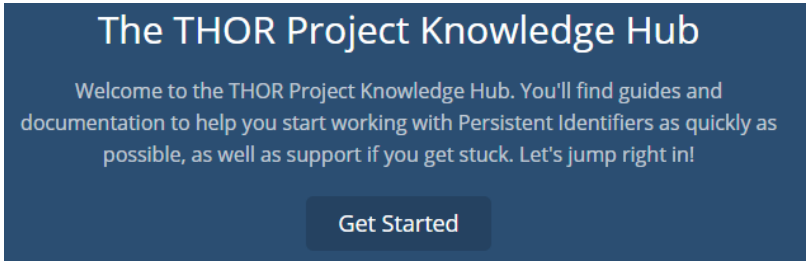
THOR

THOR



Goals:

- Establishing interoperability
- Integrating services
- Building capacity
- Achieving sustainability



https://project-thor.readme.io/

Linking scholarly output

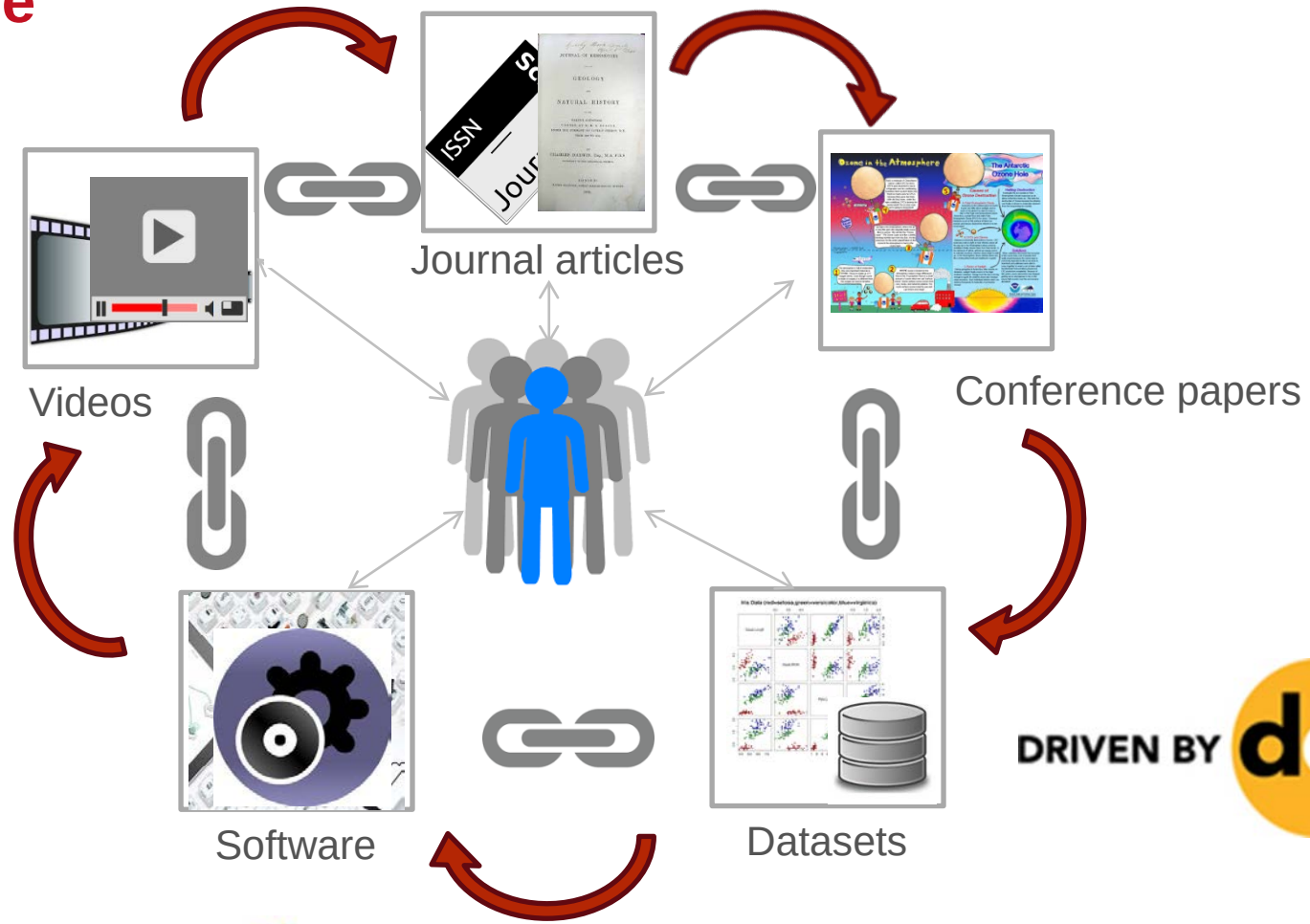
Connect resources, which have a DataCite DOI, to other resources - for example:

- ✓New versions of the same dataset,
- ✓Collections of related datasets,
- ✓or articles citing the dataset. …….AND

→linking these resources to the people and organizations who have contributed to their generation.

DataCite
FIND, ACCESS, AND REUSE DATA

Seamless Integration across the research life cycle



DRIVEN BY doi

DataCite
FIND, ACCESS, AND REUSE DATA

Crossref

GitHub

ORCID
Connecting Research and Researchers

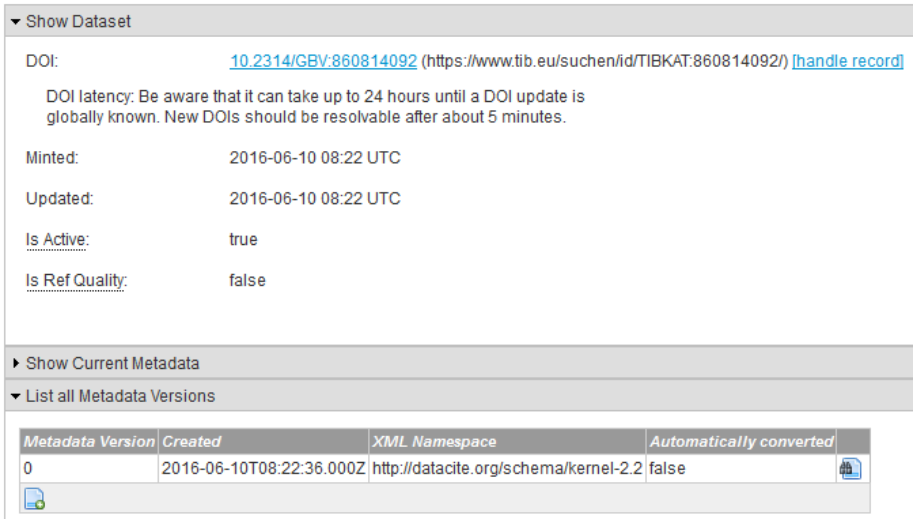
DOI - New Versions, Changes, Removal

Case: **New version of registered resource**
Solution: New DOI for each version – use metadata attribute „relatedIdentifier“ to link them conveniently

Case: **Change to metadata** i.e. typo fix, transliteration of a name
Solution: Upload the updated xml file via UI or API

Case: **Resource is removed**
Solution: DOI, metadata and landing page remain – worst case DOI inactive

Tombstone page:

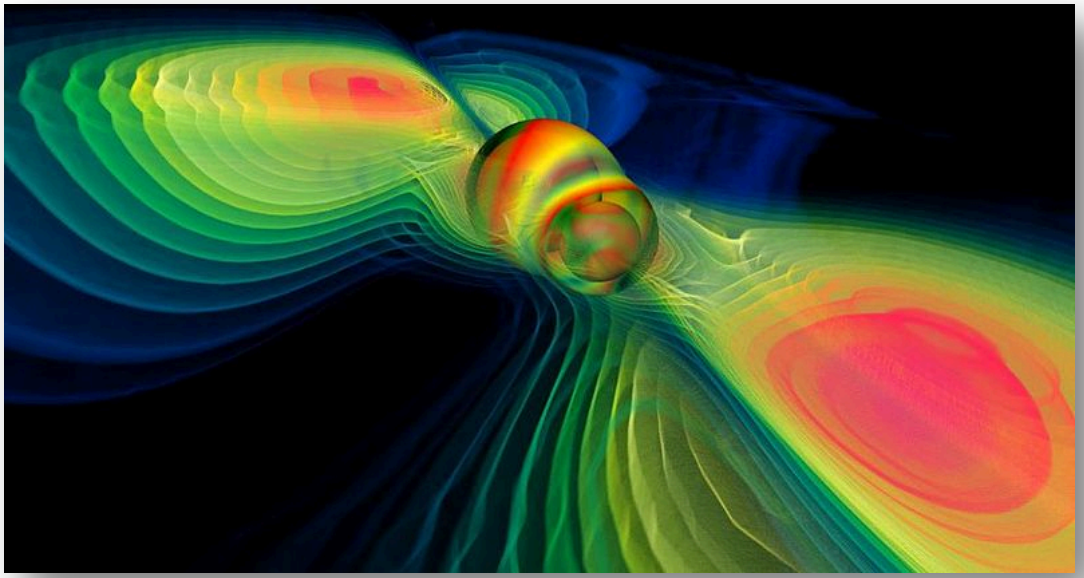


Published Research Data with DataCite DOIs

- On 14 September 2015 first observation of gravitational waves was made - 100 years after publication of the theory of general relativity by Albert Einstein
- Made available by the LIGO and Virgo Collaborations on 11 February 2016 through our member the California Digital Library with DataCite DOIs

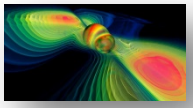
Albert Einstein himself doubted that they could ever be detected...

DataCite
FIND, ACCESS, AND REUSE DATA



Source:
Benger, W: When black holes collide
https://commons.wikimedia.org/wiki/File:When_Black_Holes_Collide.jpg
CC-BY 2.0

State of the Art Data Publication!



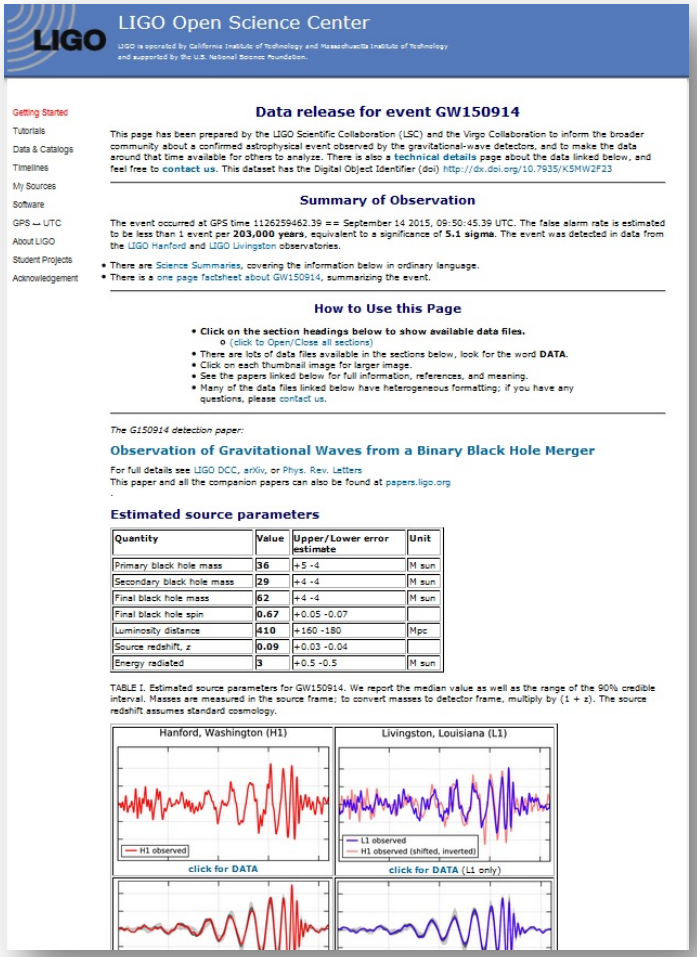
Explore: **GW150914**

View: http://**doi.org/10.7935/K5MW2F23**

The data behind the collision of two black holes

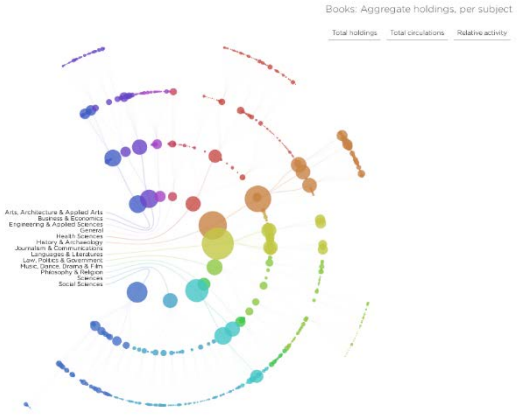
- collected by LIGO's twin detectors,
- citable via a DataCite DOI, and
- **open for everyone!**

Made available by LIGO Open Science Center at the California Institute of Technology and Massachusetts Institute of Technology –
including technical reports, graphs, calibration data & even audio files!



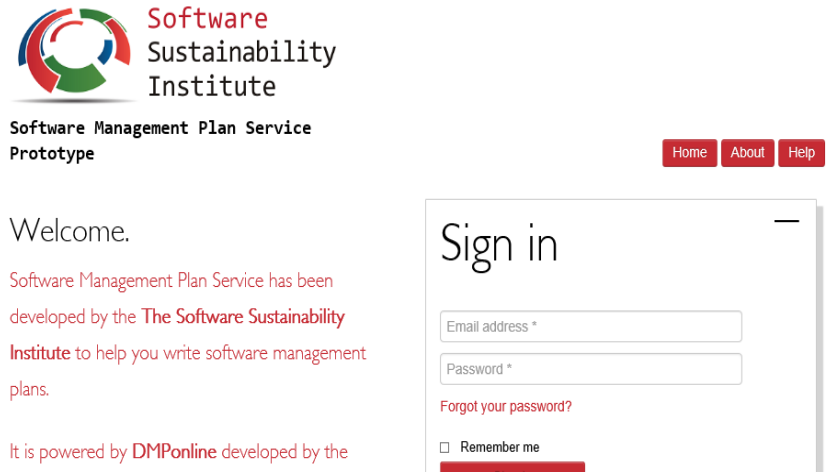
Source: Screenshot GW150914 Landing Page: http://doi.org/10.7935/K5MW2F23

Remember to consider physical data, software and models



http://spatialinformationdesignlab.org/project_sites/library/catalog.html

https://www.bundesregierung.de/Webs/Breg/DE/Themen/Forschung/ressort/RKI/_node.html



https://ssi-dev.epcc.ed.ac.uk/

Software Repositories

Matdcal

Kirk Bevan

Simulation Tool published 2015 via nanoHUB

Non-equilibrium Green's Function Density Functional Theory Simulator

https://doi.org/10.4231/D3JH3D36M Cite

By Kirk Bevan

McGill University

Non-equilibrium Green's Function Density Functional Theory Simulator

Launch Tool

Version 3.0 - published on 09 Jan 2015

doi:10.4231/D3JH3D36M cite this

Advanced-Expert

380 users, detailed usage

18 users in 2 classes

1 Citation(s)

1 question (Ask a question)

0 review(s) (Review this)

0 wish(es) (New Wish)

Share: ...

Citations Non-affiliated (1) | Affiliated (0)

Non-affiliated authors

Yap Siong (2011), "Molecular Electronics As A Future Electronic Device": pg. -.

BibTex EndNote

User Details

World usage

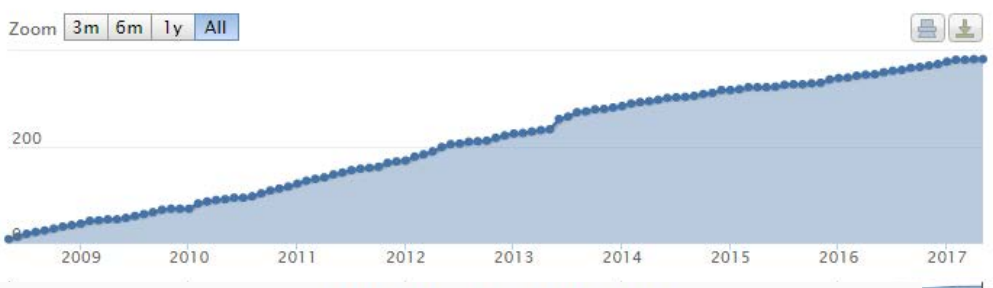
Location of all "Matdcal"
Users Since Its Posting

Monthly | Yearly | Cumulative

Simulation Users

380

Apr 2017



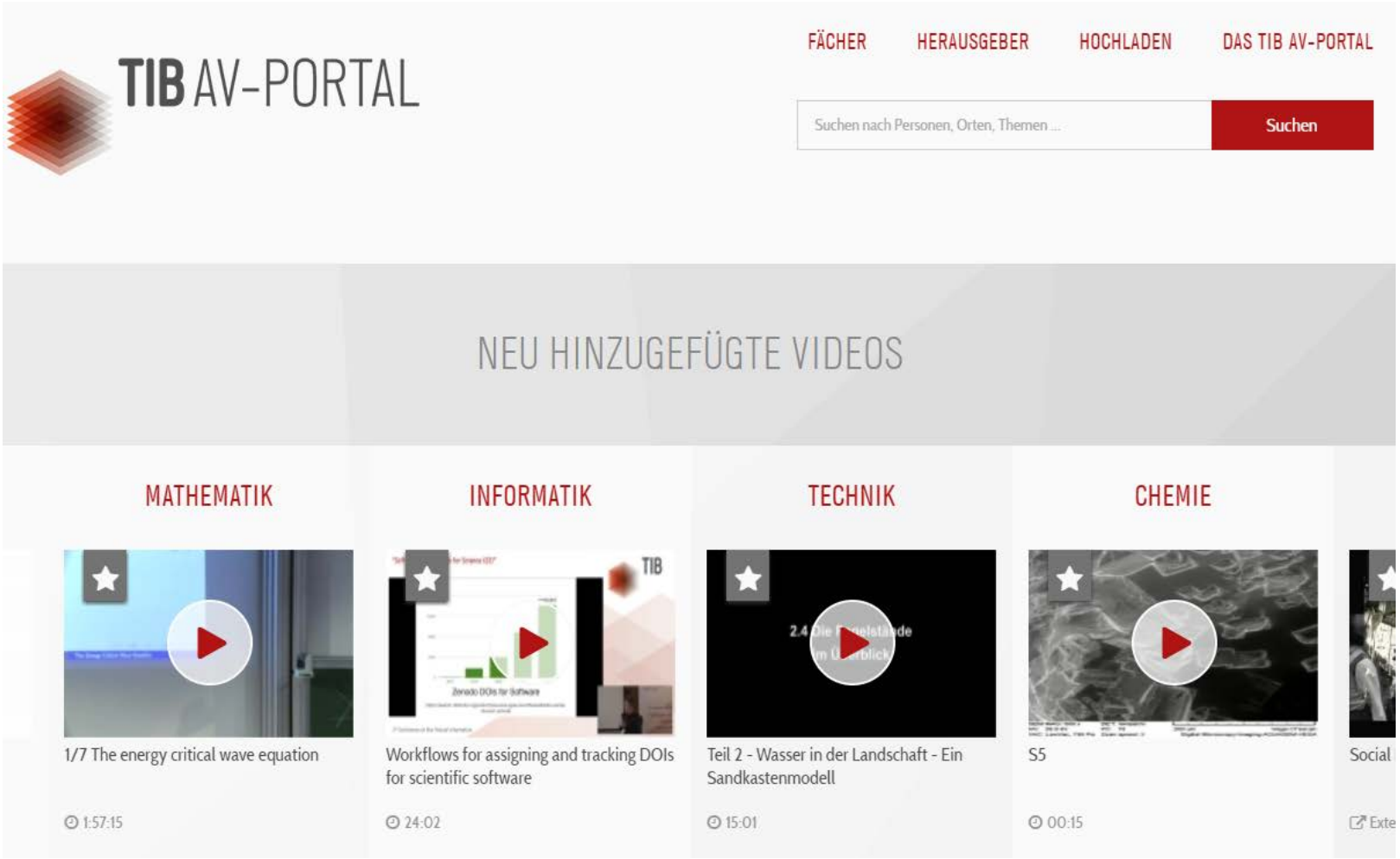
Users By Organization Type

Type	Users
Educational - University	270 (71.05%)
Unidentified	81 (21.32%)
Industry	13 (3.42%)

Users by Country of Residence

Country	Users
UNITED STATES	68 (34%)
INDIA	50 (25%)
CHINA	22 (11%)
GERMANY	12 (6%)

Video Portal



Blogs – Integral Part of Scientific Communication

- Blogs host much of the scientific discussion that occurs on the web today
- Many blogs have thousands of followers
- Post publication peer review
- Referred to in major scientific journals and news outlets

They deserve to “count,” to be elevated to a level that is not viewed as something extra but as **something integral to scientific communication** (Nicholson 2014, Nicholson 2015).

Nicholson, J. M. 2014. "Making Scientific Blogging "Count"." The Winnower. doi: 10.15200/winn.140286.62987.

Nicholson, J.M. 2015. "Science: The Pursuit of The Truth Complicated by The Pursuit of Mortgages." *The Winnower*. doi: 10.15200/winn.142099.95350.

DataCite
FIND, ACCESS, AND REUSE DATA

WordPress.org

What is an ORCID ID?

- ORCID ID are permanent identifier for researchers
- Protects the researchers unique scholarly identity
- Creation takes 30 seconds – full privacy control
- Lasts longer than your email address – keep contact information up-to-date
- Supports 37 types of „works“
- Push information automatically from Web of Science, Impactstory etc.
- Over 1000 journals are using ORCID to ease their manuscript submission system

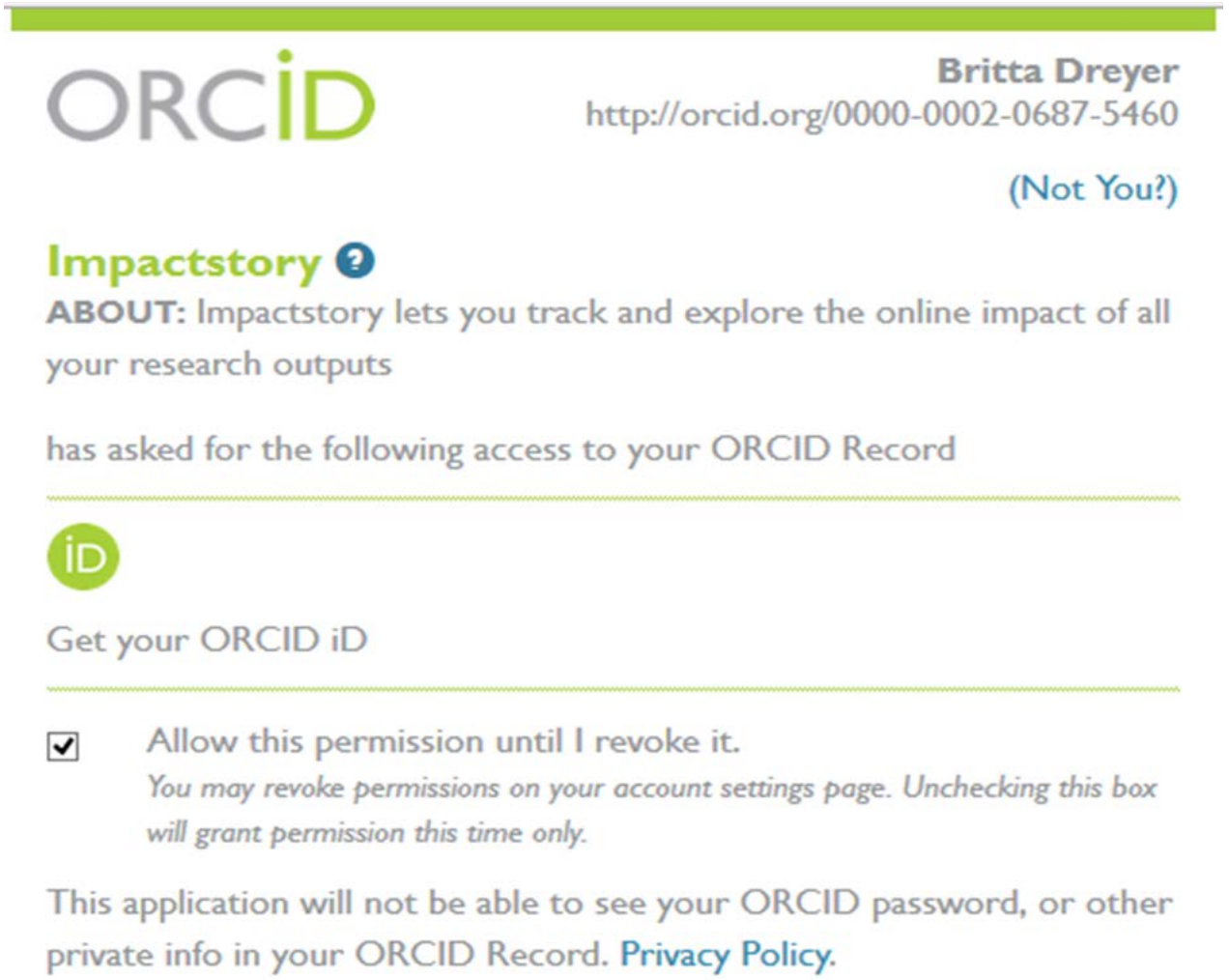
ORCID
Connecting Research and Researchers

Impactstory is a non-profit that helps scientists learn where their research is being cited, shared, saved and more. Discover your impact today.

http://blog.impactstory.org/ten-things-you-need-to-know-about-orcid-right-now/

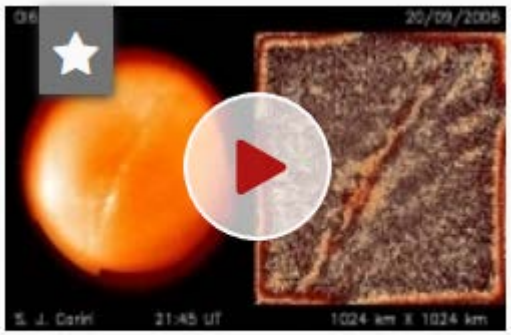
ORCID Profile

- ✓ Connect funding dollars with tangible outputs
- ✓ Track citations beyond journal articles



Internal Customers

- Retro-digitisation
- Audio visual media
- Research reports
- Handbuch.io
- University document server



Periodic gravity waves in the lower thermosphere

TIB AV-PORTAL

Open Access and Licensing

Open Access is the main goal!

- But it is possible to restrict access to data if necessary → Landing page should inform of access rights.

- Metadata and landing page should always be available.

Russian versions of CC Licenses:
Wikimedia Wikisource.
Professional 2011 3.0 translations by IIS:
Russian translation of CC BY 3.0 (Unported)
Russian translation of CC BY-SA 3.0 (Unported)
Russian translation of CC BY-ND 3.0 (Unported)
Russian translation of CC BY-NC-SA 3.0 (Unported)
Russian translation of CC BY-NC 3.0 (Unported)
Russian translation of CC BY-NC-ND 3.0 (Unported)

DataCite Roadmap

Resources:

- User Stories: https://www.datacite.org/user-stories.html
- Roadmap: https://www.datacite.org/roadmap.html
- GitHub issues: https://github.com/datacite/datacite/issues
- GitHub milestones: https://github.com/datacite/datacite/milestones
- Waffle: https://waffle.io/datacite/datacite
- and… support@datacite.org !

Resources

Citations recommendations
http://jats4r.org/citations-recommendations/

How to develop RDM services
http://www.dcc.ac.uk/resources/how-guides/how-develop-rdm-services

DOI Handbook
https://www.doi.org/hb.html

Workshops for researcher
http://anulib.anu.edu.au/research-learn/research-data-management-0
http://www.data-archive.ac.uk/media/2894/managingsharing.pdf
http://datalib.edina.ac.uk/mantra/
http://opus.bath.ac.uk/412/

Metadata Generator: https://github.com/mpaluch/datacite-metadata-generator

DataCite
FIND, ACCESS, AND REUSE DATA

DataCite Plugins

Dataverse software will be able to mint DOIs directly through the DataCite Metadata Store API.
Https://github.com/IQSS/dataverse/releases/tag/v4.3

OJS DataCite Plugin
https://github.com/pkp/ojs/tree/master/plugins/importexport/datacite

Dspace
https://wiki.duraspace.org/display/DSDOC/All+Documentation

Eprints
https://github.com/eprints/datacite

DataCite
FIND, ACCESS, AND REUSE DATA

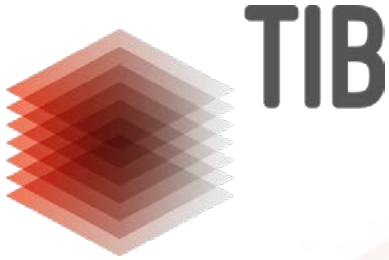
DataCite - Upcoming event

January 23rd and 24th 2018 in Girona, Catalonia, Spain

http://pidapalooza.org/

DataCite
FIND, ACCESS, AND REUSE DATA

LEIBNIZ-INFORMATIONSZENTRUM
TECHNIK UND NATURWISSENSCHAFTEN
UNIVERSITÄTSBIBLIOTHEK



TIB

Спасибо and thank you!

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