

Open Science

DESY Libraries



open science

Martin Köhler

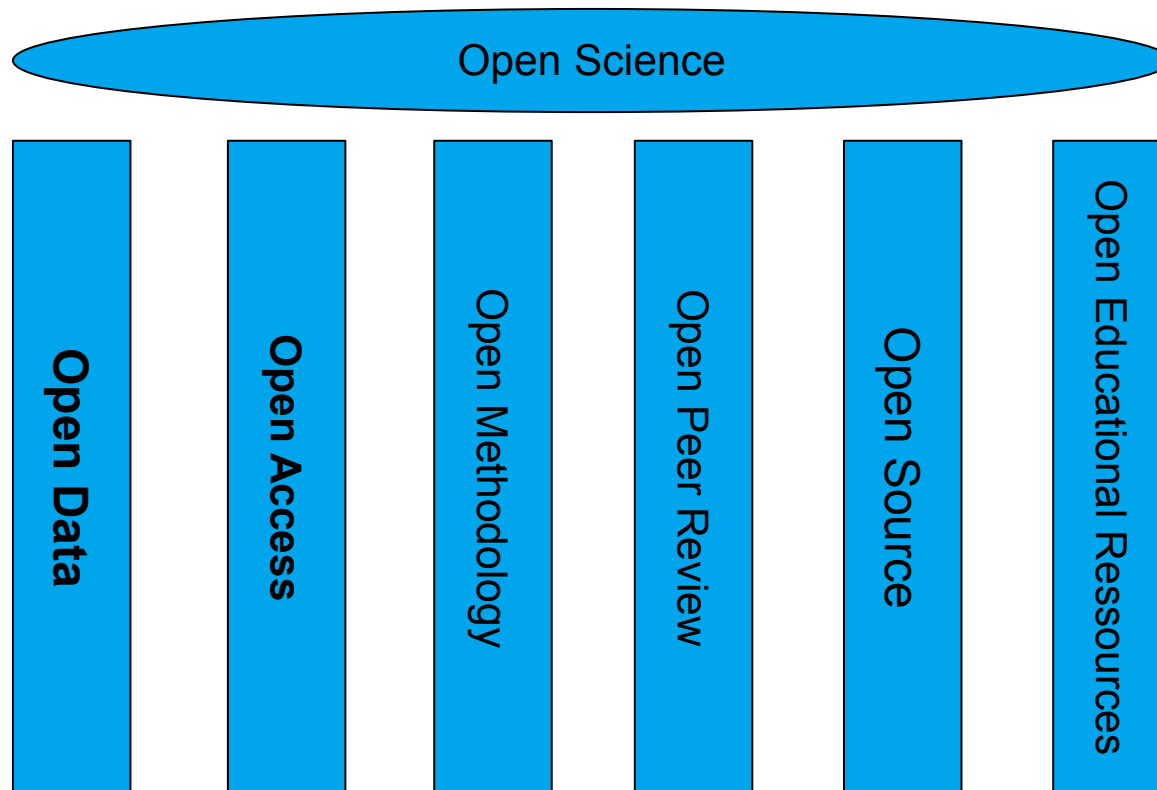
ORCID: [0000-0003-0617-3319](https://orcid.org/0000-0003-0617-3319)

DESY WA 13.6.2016

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Open science is the movement to make scientific research, data and dissemination accessible to all levels of an inquiring making it generally easier to publish and communicate scientific knowledge.

(Wikipedia https://en.wikipedia.org/wiki/Open_science)



50 years of DESY:

- > HEP research since 1964
 - International collaborations with long running experiments on Campus
 - Guest scientists closely related to institute
- > Experiments with Synchrotron-radiation since 1964
 - Not a core task of DESY at that time
- > HASYLAB & Research with photons since 1974 → User facility
 - Broad range of (relatively short running) experiments
 - International user community active on various facilities
- > Today additionally: Virtual Institutes, Campus Bahrenfeld, XFEL.EU

→ **Open Science**



> May 2016: G7 meeting in Tsukuba: G7 Science ministers

- "... recognized a growing need to share common international principles for open science and to put these principles into practice through open access to scholarly publications and open data.



[https://www.bmbf.de/files/01 Tsukuba%20communiqué \(SET\).pdf](https://www.bmbf.de/files/01_Tsukuba%20communiqué%20(SET).pdf)

> May 2016: The Council of the European union

- "... acknowledges that open science has the potential to increase the quality, impact and benefits of science ..." (Point 2)
- "... agrees to further promote the mainstreaming of open access to scientific publications by continuing to support a **transition to immediate open access as the default by 2020** taking into account that no researcher should be prevented from publishing " (Point 12)
- "... underlines that research data originating from publicly funded research projects could be considered as a public good and encourages to set **optimal reuse of research data as the point of departure**; the underlying principle for the optimal reuse of research data should be: '**as open as possible, as closed as necessary**'. " (Point 14)



<http://data.consilium.europa.eu/doc/document/ST-8791-2016-INIT/en/pdf>

Requirements for Publications



(<https://www.openaire.eu/reporting-horizon-2020-project-outputs-with-openaire>)

1. Deposit the final peer reviewed manuscript or publisher's PDF in an institutional [...] repository [...] interacting with OpenAIRE, ***as soon as possible and at the latest upon publication.***
2. ***Acknowledge project funding*** (Grant Information)
3. ***Ensure open access to the deposited publication.*** An embargo of six months [...] is acceptable. (Fulltexts!)

Open Data

(http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf)

1. Pilot action on open access to research data
2. Data Management Plan (DMP) required
3. Other projects are invited to submit a DMP



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Reco DESY Publication Database (PUBDB <http://pubdb.desy.de>)

(<https://pubdb.desy.de>)

1. OpenAire Validated
Indexed in Base
ORCID for authors
HGF Reporting
2. Plug-In for web pages



3. OpenAire Validated

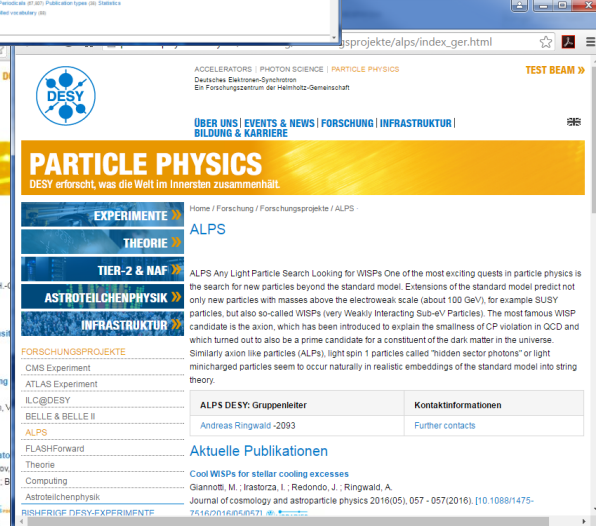
OpenAire Validated

(<http://eprints.desy.de>)

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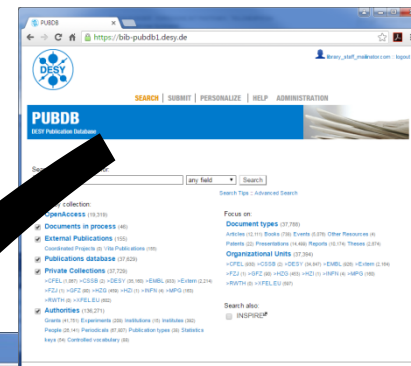
- Part of JOIN², a collaboration of DESY, DKFZ, FZJ, GSI, MLZ, RWTH (<http://join2.de>)



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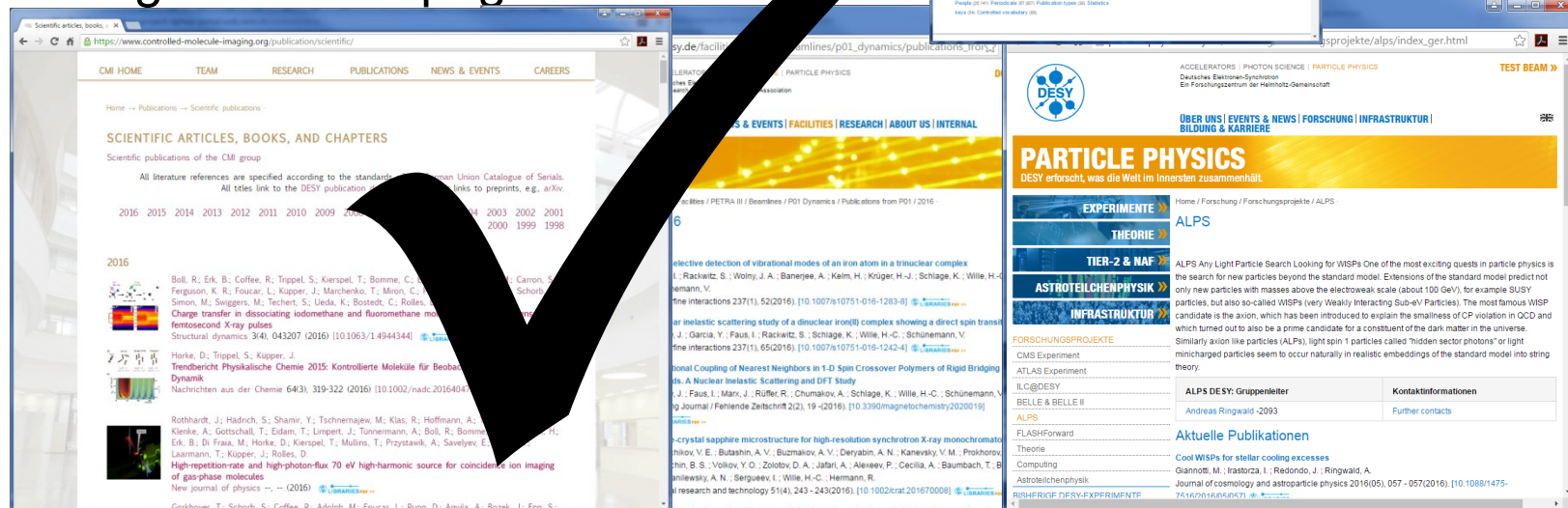
Open

(<http://e>)

1. ➤

2. ➤

3. ➤



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April 2016:

Assembly of Members of the Helmholtz Association

- > The Helmholtz Centres are asking their employees to make those publications accessible and open for sharing that they have authored alone or collectively with others as a result of their work for the Helmholtz Association.
- > In addition, employees must aim to make the research data underlying the publication accessible and open for sharing.
- > **The directors of the Helmholtz Centres ensure that there are appropriate incentives, monitoring, and controlling.**



Hermann von Helmholtz
(1821 – 1894)

<http://oa.helmholtz.de/open-science-in-der-helmholtz-gemeinschaft/open-access-richtlinien/open-access-richtlinie-der-helmholtz-gemeinschaft-2016/open-access-policy-of-the-helmholtz-association-2016.html>

April 2016
Assembly

Directors of the Helmholtz Association

> The directors are asking their employees to make their research results accessible and open for sharing, either individually or collectively, for the benefit of the Helmholtz Association.

> In addition, employees are encouraged to make research data underlying the publication available for sharing.

> The directors of the Helmholtz Association are to provide appropriate incentives, monitoring, and support.



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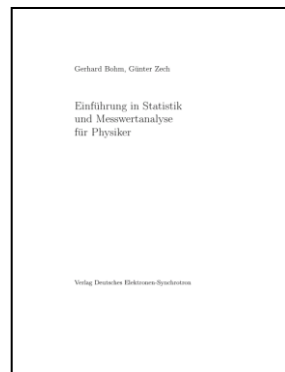
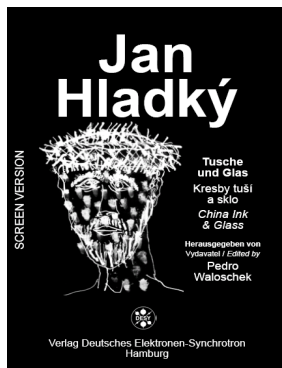
100% OA Publications from the year 2025 onwards

- > „Green Road“: Storage of quality ensured publications (Postprints) and other digital objects in institutional or other repositories with free access
 - **Publication Database & e.g. arXiv, INSPIRE**
- > „Golden Road“: Publication in Open Access journals
 - **Currently: Article processing charge paid by DESY Library**
 - **DESY Publications**
 - **Use [CC-BY](#) license for best re-usability (NOT CC-BY-NC!)**
- > „Hybrid Open Access“: Publications in classical subscriptions based journals are made Open Access through additional payments
 - **Not recommended**



DESY is an (Open Access) publisher since 2001 and has the right to assign ISB-Numbers (ISBN).

- DESY Reports (~250 in 2015)
- DESY Thesis (~ 50 in 2015)
- Annual Reports (DESY)
- Inst. repositiorium (~3200 in 2015)
- Proceedings (~4/year) incl. DOI's
- Books (1-2/year)



“Open data and content can be freely used, modified, and shared by anyone for any purpose”

<http://opendefinition.org/>

Guidelines: H2020 Data Management Plan (DMP)
DMP must cover:

- > the handling of research data during & after the project
- > what data will be collected, processed or generated
- > what methodology & standards will be applied
- > whether data will be shared /made open access & how
- > how data will be curated & preserved



„As open as possible, as closed as necessary“

http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf

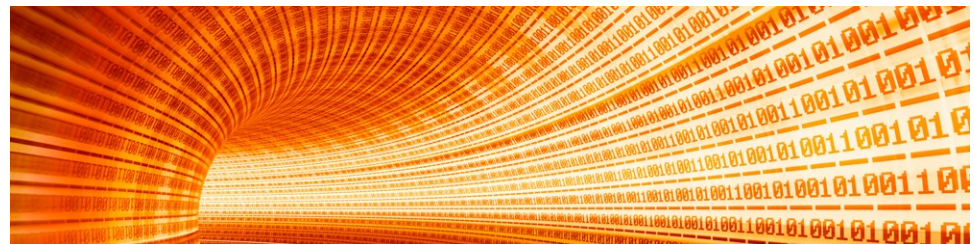
Funding, Ressources & (International) Collaboration needed

- DPHEP. International study group (since 2012)
 - Review and document the physics objectives
 - Exchange information concerning the analysis model: abstraction, software, documentation etc. and identify coherence points.
 - Address the hardware and software persistency status.
 - Review possible fundings schemes and other related international initiatives.
 - Converge to a common set of specifications in a document that will constitute the basis for future collaborations.

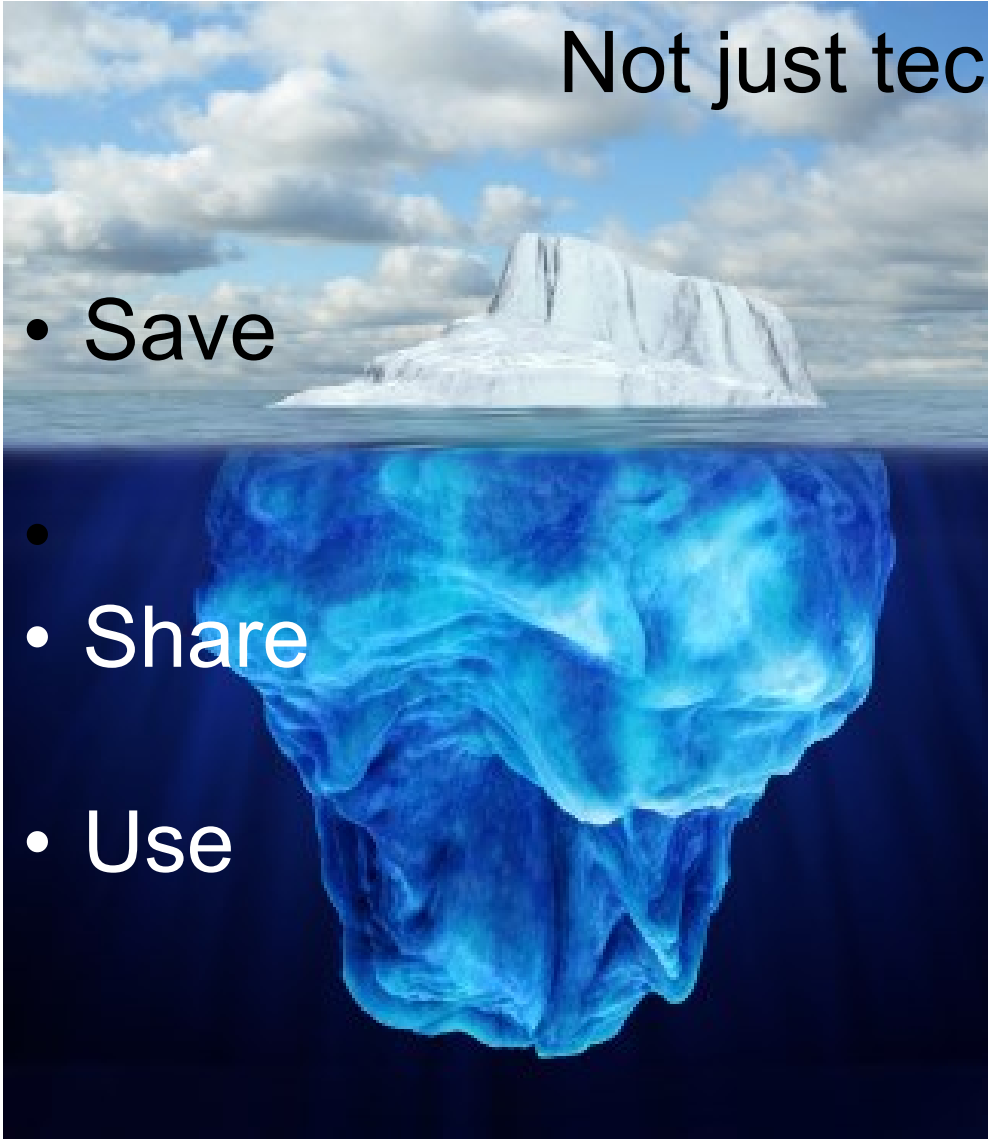
<https://www.dphep.org/>

- Photon Science
- Accelerator R&D

What about Data Re-use?



Not just technical

- 
- An iceberg floating in the ocean. The tip of the iceberg, which is visible above the water, is relatively small and flat. The much larger part of the iceberg is submerged underwater, showing a complex, jagged shape. This visual metaphor represents the idea that data re-use is not just about technical aspects (the visible tip) but also about a much larger set of non-technical factors (the submerged part).
- Save
 - Share
 - Use

> Technology

- **Storage**
- **Access**
- **Citability**

> Process & Organisation

- **Funding**
- **Support**

> People

- **Skill**
- **Incentives**
- **Mindset**

Not just technical

- Save

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> Technology

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(✓)

> Process & Organisation

- Funding
- Support

?

> People

- Skill
- Incentives
- Mindset

?

> OA Publication Strategy

- **Encourage scientists to use their rights as authors**
- **Green OA via PUBDB and repositories (e.g. ArXiv, INSPIRE)**
- **Gold OA via DESY Publication fund**
(see „Open-Access Publikationsfonds“ Arbeitsgruppe Open Access der Schwerpunktinitiative Digitale Information der Allianz der deutschen Wissenschaftsorganisationen <http://doi.org/10.2312/allianzao.006>)
- **OA Publications via Publisher DESY**

> Support Data Publication

- **Tackle the „non technical“ issues**
- **Will/should DESY become a major player as a Data Publisher ? (in Photon Science?)**



DESY-Computercentre
Heiner Müller-Elsner/DESY

Not gratis !

Funding, Ressources & skills and midset

Thank You



- > Publish Gold (e.g. DESY Publication) or Green OA
 - Always put fulltexts into PUBDB (too)
 - ArXiv or Websites is NOT sufficient (... but use [ZMS-plugin for Websites](#))
 - When applying for grants include OA funding
- > Retain your rights
 - Publisher needs only „non-exclusive rights to publish“
 - CC-BY for best re-usability
- > Consider publishing Software via Zenodo (<https://zenodo.org/>) (and make a record in PUBDB)
- > Data publication:
 - Small Data Sets (e.g. ~MB) via PUBDB
 - Media Data Sets (e.g. ~GB) via e.g. Zenodo (and Metadata in PUBDB)
 - Large Data Sets (e.g. ~TB - ~PB): Contact IT & Library