



# The openCost project

Using repositories to achieve transparency in the transformation process to open access as part of the science economy

Open Repositories 2024, 5/June/2024,  
Bianca Schweighofer (University Library of Regensburg)



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## The project openCost

- **Project partners:** University Library of Regensburg, Bielefeld University Library, Deutsches Elektronen-Synchrotron DESY
- Funded by the German Research Foundation (DFG)
- **Goals:**
  - Creating a technical infrastructure that allows to comprehensively record all publication costs and subsequently make them freely accessible by means of standardized interfaces
  - Enabling cost transparency on an institutional, national, and international level

## Project focus

- Development of a **standardized metadata schema** for the collection/recording and transfer of data on publication costs
- Implementation of an open interface for **harvesting** and querying this data
- Extension of the **Electronic Journals Library (EZB)** with special functions for displaying information on open access publication costs and on the assumption of costs

## Metadata schema and open data exchange

- The metadata schema:
  - Development in collaboration with experts and stakeholders
  - Community feedback (public GitHub repository)
  - Coverage of fee-based journal articles, additional costs, processing fees, part of contract (with cost information), ...
- Open format for the exchange of cost data:
  - Exchange via über OAI-PMH-interface, XML as exchange format
  - Attribute-less XML for easy export in other formats (e.g. JSON)

```
publication
  --- primary_identifier
  | --- doi __OR__ bibliographic_information!*
  --- secondary_identifiers
  | --- id type=doi
  | --- id type=local
  | --- id type=oai
  --- institution
  | --- id type=ror
  | --- name type=short
  --- publication_type = COAR controlled vocabulary
  --- external_costssplitting = true_OR_1 / false_OR_0
  --- cost_data
  | --- part_of_contract
  | | --- primary_identifier
  | | | --- id type=ESAC
  | | --- group_id
  | --- invoice
  | | --- invoice_number
  | | --- creditor
  | | --- dates
  | | | --- invoice
  | | | --- paid
  | | --- amount_invoice
  | | | --- amount
  | | | --- currency
  | | --- amounts_paid
  | | | --- amount_paid
```



## Using repositories to achieve transparency in the transformation process to open access

## Repositories

- Repositories as designated location for sustainable publication of research results
- Metadata is automatically gathered from various sources: Crossref, DataCite, OpenAlex
- Enrichment with local requirements such as institutions, chairs, and local identifiers to obtain additional value
- Funding: funder and project number  provision of financial information, no exact figures

## Other publication data

Data, that has not been stored or is only available in other sources:

- Reason for the publication licence
- Payments
- Part of contract (transformative agreement, ...)
- Investment in infrastructure or personell

## Where to store data on publication costs?

- Metadata of a publication that is stored in a repository:
  - **Bibliographic metadata:** all data describing the publication
  - **Technical metadata:** technical information and data about the publication
  - **Legal metadata:** mainly rights that are assigned to the publication
  - **Administrative metadata:** all relationships between a publication to an organization
- Metadata in library or management systems:
  - Cost data, but no information about the publication
  - Difficult to expand
  - Transformative agreements: publications have to be assigned to single payments

## Cost data in repositories

Advantages:

- Free combination of metadata
- Enabling statistical analyses
- Budget planning for libraries: Publication costs
- Standardized interfaces for easy and automated data exchange



## Integrating cost data into repositories – Exemplary implementation by the project partners

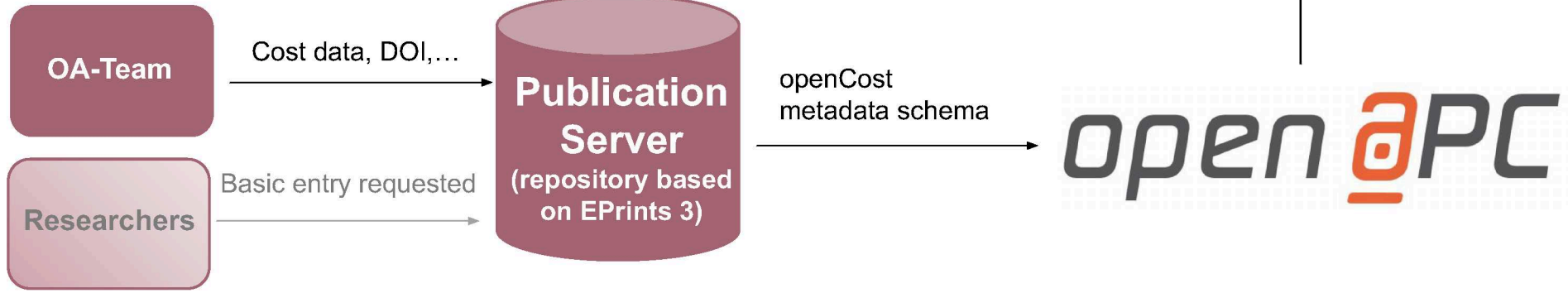
# University Regensburg: Cost data workflow

University of Regensburg  
 Latest 20 Additions to University of Regensburg Publication Server

- Krickl, Patricia and Poschlod, Peter (2023) *Calcareous grassland restored by clearance and subsequent sheep grazing show fast recovery of plant functional traits – Results from a 25-year long experiment*. *Global Ecology and Conservation* 45, e02509.
- Hense, Katharina, Deuter, Daniel, Greenlee, Mark W., Wendl, Christina, Schmidt, Nils Ole, Stroszczyński, Christian, Doenitz, Christian, Ott, Christian and Rosengarth, Katharina (2023) *Analysis of Functional Neuroplastic Changes in the Cortical Language System in Relation to Different Growth Patterns of Glioblastoma*. *Brain Sciences* 13 (6), p. 887.
- Weber, Markus, Meyer, Matthias, Von Kunow, Frederik, Fichtmeier, Bernd, Hillmann, Axel and Wulbrand, Christian (2023) *How Relevant Is the Parallax Effect on Low Centered Pelvic Radiographs in Total Hip Arthroplasty*. *Journal of Personalized Medicine* 13 (6), p. 881.
- Ettl, Tobias, Gottsauner, Maximilian, Kühnel, Thomas, Maurer, Michael, Schuderer, Johannes G., Spörl, Steffen, Taxis, Jürgen, Reichert, Torsten E., Fiedler, Mathias and Meier, Johannes K. (2023) *The Folded Radial Forearm Flap in Lip and Nose Reconstruction—Still a Unique Choice*. *Journal of Clinical Medicine* 12 (11), p. 3636.

OPENAPC

Measure	Sum	Number of Articles	Mean Value	Standard Deviation	Percentage
Regensburg U of Journals (298 entries)					
■ PLOS ONE	€256.842	165	€1.388	€240	13.99%
■ Frontiers in Psychology	€118.433	68	€1.716	€191	6.04%
■ International Journal of Molecular Sciences	€97.292	60	€1.622	€302	4.90%
■ Scientific Reports	€93.751	50	€1.888	€173	4.79%
■ Nature Communications	€71.441	17	€4.202	€1.151	3.91%



# EPrints: Entering cost data (Regensburg)

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## Edit item: Article #2

Type → Upload → Details → Subjects → **OpenCost** → Deposit

< Previous Save and Return Cancel Next >

**Open Access Type** ?

Primary Publication  
"University Press"

- UNSPECIFIED
- APC (Gold)
- APC (Hybrid)
- VAT
- Page Charges
- Colour Charges
- BPC
- Other


**Payment Details** ?

Costs Paid:	Amount	Invoice	Type	Year	Month	Day
1.	2000	123456	UNSPECIFIED	2023	March	28
2.	380	123456	UNSPECIFIED	2023	April	24
3.			UNSPECIFIED		Unspecified	?

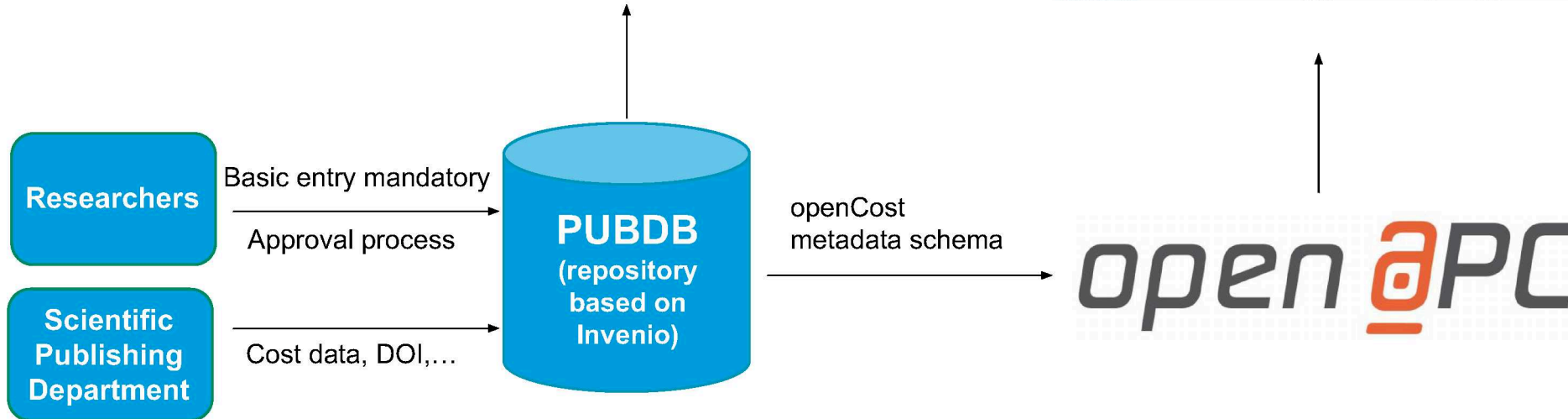
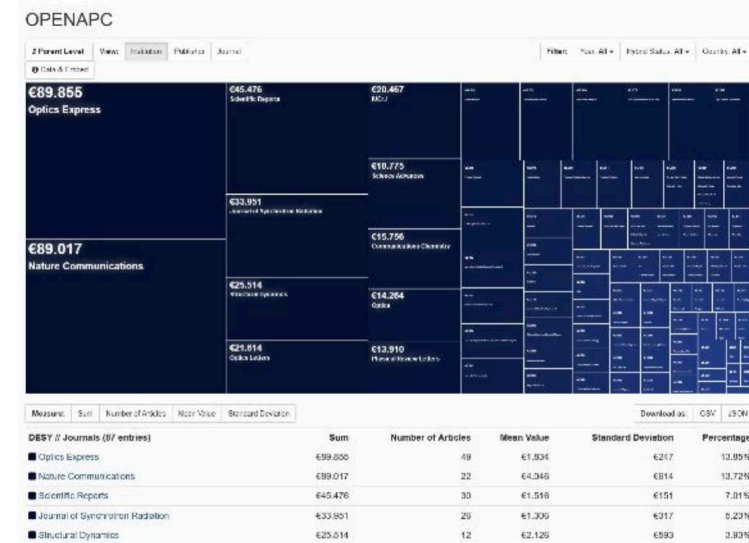
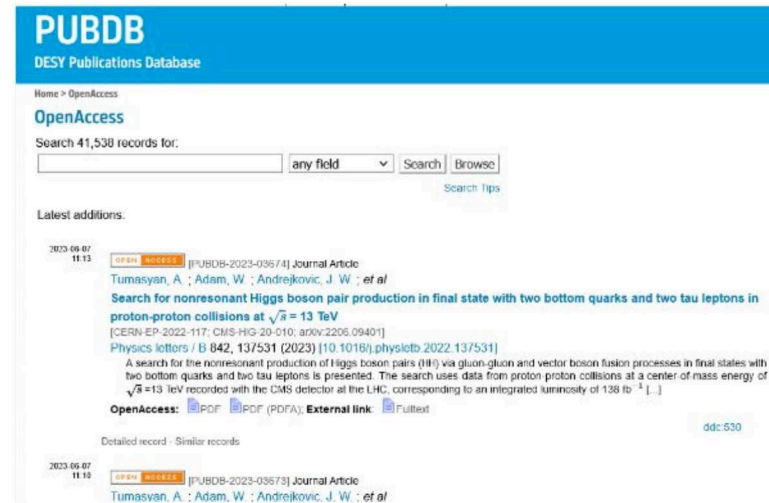
Costs Paid:	Amount	Invoice	Type	Year	Month	Day
1.	2000	123456	UNSPECIFIED	2023	March	28
2.	380	123456	UNSPECIFIED	2023	April	24
3.			UNSPECIFIED		Unspecified	?

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# DESY: Cost data workflow



# Invenio: Entering cost data (DESY)

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## PUBDB

DESY Publications Database

[Home](#) > [Publications database](#) > [Highly efficient narrowband terahertz generationdriven by a two-spectral-line laser in PPLN](#)

Information
Files
Holdings

Report Total costs: 3874.79

**PUBDB-2021-04978**

### Highly efficient narrowband terahertz generationdriven by a two-spectral-line laser in PPLN

Olgun, H. T. (First author)\*; Tian, W.; Cirmi, G.\*; Ravi, K.; Rentschler, C.\*; Cankaya, H.; Pergament, M.\*; Hemmer, M.; Matlis, N.\*; Kärtner, F. (Corresponding author)\*

2022  
 Soc. Washington, DC

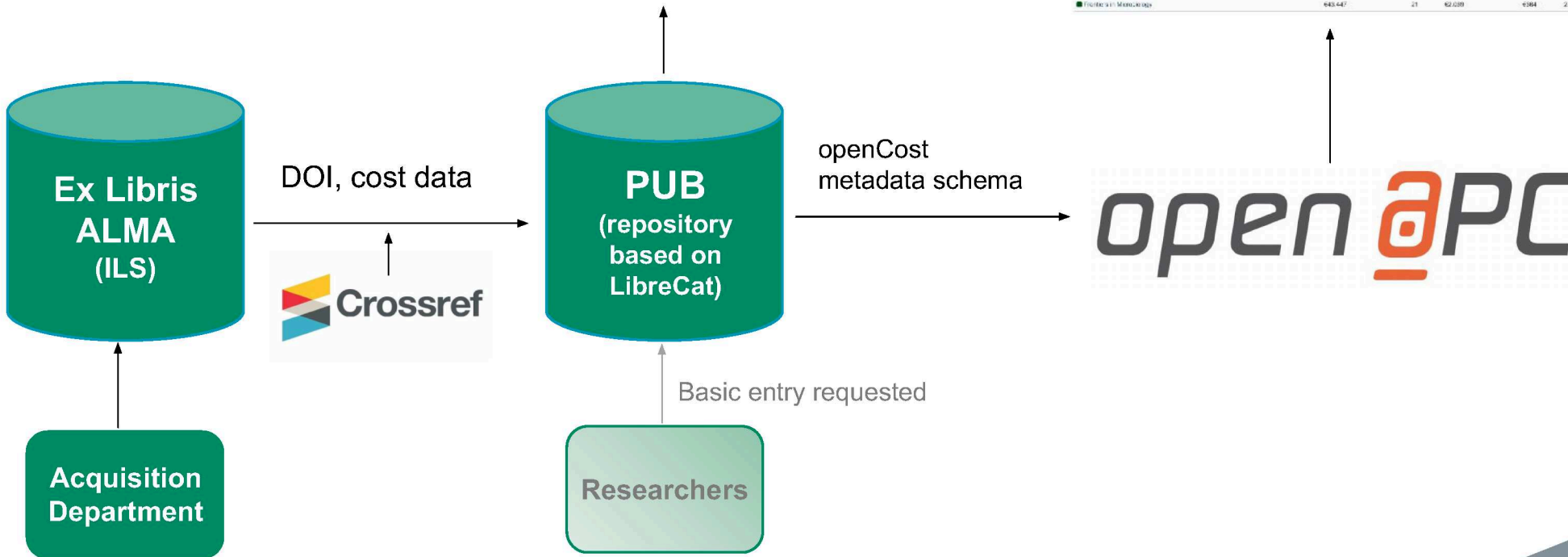
[Optics letters 47\(10\), 2374 - 2377 \(-\) \[10.1364/OL.448457\]](#)

Corresponding authors: **Olgun, Halil Tarik** *First author[\*]*; **Kärtner, Franz** *Corresponding author[\*]*  
 Editors: ██████████@desy.de; ██████████@desy.de; ██████████@desy.de; ██████████@desy.de  
 APC keys set  
  Local Funding  
  DFG OA Publikationskosten  
  TIB: Optica 01/01/2023

Status	Type	Price	VAT	Currency	Cost centre	Credit card/Deposit	Date of invoice	Invoice No.	Man-ID	Comment	Local Ref.	Date
Zahlung erfolgt	Hybrid-OA	2050.15	19.14 1%	EUR	██████████		2022-04-08	448457	4484	CCBY license	52789518	2022-04-22
Zahlung erfolgt	Colour charge	597.49	5.58 1%	EUR	██████████		2022-04-08	448457	4484	first figure	52789518	2022-04-22
Zahlung erfolgt	Colour charge	1194.99	11.16 1%	EUR	██████████		2022-04-08	448457	4484	additional figures	52789518	2022-04-22
Zahlung erfolgt	Other	32.16	0.30 1%	EUR	██████████		2022-04-08	448457	4484	payment processing fee	52789518	2022-04-22
		1.00	1.00	EUR	AB-12345, Dep.		yyyy-mm-dd	123456	by pu			yyyy-mm-dd
		1.00	1.00	EUR	AB-12345, Dep.		yyyy-mm-dd	123456	by pu			yyyy-mm-dd

Save

# Bielefeld University: Cost data workflow



1757 Publikationen

1 2 3 4 ... 175 176 »

2023 | Zeitschriftenaufsatz | Veröffentlicht | PUB-ID: 2967889  
**Keeping the Spirit in the Bottle: On Pathological Reduction of Information in Totalitarianism**  
 Postoutenko K (2023)  
*Information* 14(1): 24.  
 PUB | PDF | DOI | WoS

2023 | Zeitschriftenaufsatz | Veröffentlicht | PUB-ID: 2967891  
**Urbanicity: Perspectives from Neuroscience and Public Health: A Scoping Review**  
 Senkler B, Freymüller J, Lopez Lumbi S, Hornberg C, Schmid H-L, Hennig-Fast K, Horstmann G, McCall T (2023)  
*International Journal of Environmental Research and Public Health* 20(1): 688.  
 PUB | PDF | DOI | Download (ext.) | WoS | PubMed | Europe PMC

Filter und Suchbegriffe  
 ✕ Entferne Suchbegriff: funded=1

Suche

Publikationen filtern

- ▼ Publikationstyp
- ▼ Publikationsjahr
- ▶ 1692 OA Volltext(e)
- ▼ Indexiert in

Darstellung / Sortierung

OPENAPC

Journal	Sum	Number of Articles	Mean Value	Standard Deviation	Percentage
€169,117 PLOS ONE	€169,117	119	€1,421	€395	0.05%
€143,051 Frontiers in Psychology	€143,051	77	€1,858	€506	7.85%
€89,106 Scientific Reports	€89,106	53	€1,681	€231	4.77%
	€81,922	39	€2,098	€302	3.28%
	€58,922	27	€2,182	€390	3.03%
	€43,447	21	€2,069	€384	2.32%



# Display of OpenAPC information in repositories

**Quantification of gas-accessible microporosity in metal-organic framework glasses**  
 Frentzel-Beyme, L.; Koldzeiski, P.; Weiss, J.-B.; Schneemann, A.; Henke, S. (Corresponding author)

2022  
 Nature Publishing Group UK [London]

Nature Communications 13(1), 7750 (2022) [10.1038/s41467-022-35372-5]

This record in other databases: 14 33

Please use a persistent id in citations: doi:10.1038/s41467-022-35372-5 doi:10.3204/PUBDB-2022-07769

**Abstract:** Metal-organic framework (MOF) glasses are a new class of glass materials with immense potential for applications ranging from gas separation to optics and solid electrolytes. Due to the inherent difficulty to determine the atomistic structure of amorphous glasses, the intrinsic structural porosity of MOF glasses is only poorly understood. Here, we investigate the porosity features (pore size and pore limiting diameter) of a series of prototypical MOF glass formers from the family of zeolitic imidazolate frameworks (ZIFs) and their corresponding glasses. CO<sub>2</sub> sorption at 195 K allows quantifying the microporosity of these materials in their crystalline and glassy states, also providing excess to the micropore volume and the apparent density of the ZF glasses. Additional hydrocarbon sorption data together with X-ray total scattering experiments prove that the porosity features of the ZF glasses depend on the types of organic linkers. This allows formulating design principles for a targeted tuning of the intrinsic microporosity of MOF glasses. These principles are counterintuitive and contrary to those established for crystalline MOFs but show similarities to strategies previously developed for porous polymers.

**Classification:**

- ddc:500

**Contributing Institute(s):**

1. DOOR-User (DOOR ; HAS-User)

**Research Program(s):**

1. 6G3 - PETRA III (DESY) (POF4-6G3) (POF4-6G3)

Publication costs of 5579.37€ funded by Technische Universität Dortmund (Source: OpenAPC)

**Contributing Institute(s):**

1. DOOR-User (DOOR ; HAS-User)

**Research Program(s):**

1. 6G3 - PETRA III (DESY) (POF4-6G3) (POF4-6G3)

Publication costs of 5579.37€ funded by Technische Universität Dortmund (Source: OpenAPC)

**Tumour stage distribution and survival of malignant melanoma in Germany 2002–2011**

URN zum Zitieren dieses Dokuments:  
 URN-NBN:DE:BVB:355-EPUB-427213

DOI zum Zitieren dieses Dokuments:  
 10.5283/EPUB.42721

Schoffer, Olaf ; Schülein, Stefanie ; Arand, Gerlinde ; Arnholdt, Hans ; Baaske, Dieter ; Bargou, Ralf C. ; Becker, Nikolaus ; Beckmann, Matthias W. ; Bodack, Yves ; Böhme, Beatrix ; Bozkurt, Tayfun ; Breitsprecher, Regine ; Buchali, Andre ; Burger, Elke ; Burger, Ulrike ; Dommisch, Klaus ; Elsner, Gudrun ; Fernschild, Karin ; Flintzer, Ulrike ; Funke, Uwe ; Gerken, Michael ; Göbel, Hubert ; Grobe, Norbert ; Gump, Vera ; Heinzerling, Lucie ; Kempfer, Lana Raffaella ; Kiani, Alexander ; Klinkhammer-Schalke, Monika ; Klöcking, Sabine ; Kreibich, Ute ; Knabner, Katrin ; Kuhn, Peter ; Lutze, Stine ; Mäder, Uwe ; Maisel, Tanja ; Maschke, Jan ; Middeke, Martin ; Neubauer, Andreas ; Niedostatek, Antje ; Opazo-Saez, Anabelle ; Peters, Christoph ; Schell, Beatrice ; Schenkirsch, Gerhard ; Schmalenberg, Harald ; Schmidt, Peter ; Schneider, Constanze ; Schubotz, Birgit ; Seide, Anika ; Strecker, Paul ; Taubenheim, Sabine ; Wackes, Matthias ; Weiß, Steffen ; Welke, Claudia ; Werner, Carmen ; Wittekind, Christian ; Wulff, Jörg ; Zettl, Heike ; Klug, Stefanie J.

Lizenz: [Creative Commons Namensnennung 4.0 International](#)  
 PDF – Veröffentlichte Version  
 (976kB)

**Veröffentlichungsdatum dieses Volltextes:** 17 Mrz 2020 11:47

**Alternative Links zum Volltext:**

**Details**

<b>Dokumentenart:</b>	Artikel
<b>Höhe Gebühr (aus OpenAPC):</b>	1661.24
<b>Institution der Zahlung:</b>	TU Muenchen
<b>Titel eines Journals oder einer Zeitschrift:</b>	BMC Cancer
<b>Verlag:</b>	BMC

PUB - Publikationen an der Universität Bielefeld

**Expertise-dependent perceptual performance in chess tasks with varying complexity**

Küchelmann T, Velentzas K, Essig K, Koester D, Schack T (2022)  
 Frontiers in Psychology 13: 1-13.

Zeitschriftenaufsatz | Veröffentlicht | Englisch

Download fpsyg-13-986787.pdf 933.51 KB  
 DOI <https://doi.org/10.3389/fpsyg.2022.986787>  
 URN <urn:nbn:de:hbz:5:1-65888-p0070-pub-29668840>

**Details** **Dateien** English

**Autor\*in** [Küchelmann, Thomas](#) ; [Velentzas, Konstantinos](#) ; [Essig, Kai](#) ; [Koester, Dirk](#) ; [Schack, Thomas](#)

**Einrichtung** [Center of Excellence - Cognitive Interaction Technology CITEC](#)  
[Fakultät für Psychologie und Sportwissenschaft > Abteilung Sportwissenschaft > Arbeitsbereich II - Neurokognition und Bewegung - Biomechanik](#)

**Abstract / Bemerkung** Perceptual performance, anticipating opponents' strategies, and judging chess positions especially in subliminal processing is related to expertise level and dependent on chunking processes. It becomes obvious that chess expertise is a multidimensional phenomenon related predominantly to

**Export**

- Markieren/ Markierung löschen
- Markierte Publikationen
- Open Data PUB

**Finanzierung**

Quelle: [OPEN@PC](#)  
 Publikationskosten von 3401€  
 finanziert durch [Bielefeld University](#).

**Finanzierung**

Quelle: [OPEN@PC](#)

**Publikationskosten von 3401€**

finanziert durch [Bielefeld University](#).

# Display of OpenAPC information in the Electronic Journals Library

▼ Publish in this journal

**Secondary publication of your own articles from this journal in Open Access**

**Publisher's Open Access Policy**

Publisher / Provider: Public Library of Science (PLoS); PubMed Central

Sherpa Romeo: [Find the publisher's Open Access policy in Sherpa Romeo](#)

---

**Contribution to publication costs by your own institution**

Person to Contact: Cornelia Lang (electronic publishing, publishing fund, electronic dissertations, research data), [oa@ur.de](mailto:oa@ur.de)

Funding\*: For journal articles with an invoice date of 2023/2024, a contribution of €2000 will be provided if the journal is listed in <https://doaj.org/>, the article originated at UR, the corresponding author is a member of UR, and as a result, lists UR as their first affiliation in the article. All information and publishing agreements regarding free or discounted publishing are available at <https://epub.uni-regensburg.de/oa-publizieren.html>.

\*This information is provided by your institution for guidance purposes. For binding information, please contact the appropriate contact person at your institution.

Website: <https://epub.uni-regensburg.de/oa-publizieren.html>

**Information about Publishing**

The Directory of Open Access Journals

Instructions for authors: [Link to the instructions](#)

Languages the journal accepts: English

APCs: Yes

APC amount: 2290 USD

Journal license: CC BY

Quality seal: DOAJ Seal

Review process: Anonymous

Plagiarism screening policy: Publisher's policy

Duration of publishing process: 24 Weeks

## Cost Information from OpenAPC

Institutions report the publication costs (APC) paid for this journal to OpenAPC:

Year	2021	2022	2023	2024
Average APC per article worldwide	1,557 EUR (777 record(s))	1,792 EUR (665 record(s))	1,756 EUR (258 record(s))	1,721 EUR (7 record(s))
Average APC per article in your institution	1,705 EUR (13 record(s))	2,003 EUR (8 record(s))	1,980 EUR (2 record(s))	- (no records)

## Cost Information from OpenAPC

Institutions report the publication costs (APC) paid for this journal to OpenAPC:

Year	2021	2022	2023	2024
Average APC per article worldwide	1,557 EUR (777 record(s))	1,792 EUR (665 record(s))	1,756 EUR (258 record(s))	1,721 EUR (7 record(s))
Average APC per article in your institution	1,705 EUR (13 record(s))	2,003 EUR (8 record(s))	1,980 EUR (2 record(s))	- (no records)



Are libraries/repository providers willing to openly share their publication cost data?

## Goal: Transparency

Fairness and cost transparency in scientific publishing can only be achieved if this data is shared!

openCost:

- Automated standard reduces workload
- OAI interface: harvesting of cost metadata
- Cost transparency for publishing and reading
- Comparisons on institutional, national and international level

## OpenAPC

- Releases data sets on fees paid for OA journal articles by universities and research institutions under an Open Database License
- Willingness to share cost data:

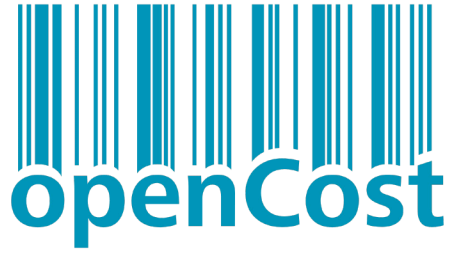
428 institutions worldwide have contributed to the OpenAPC project

- Sweden: 27 institutions
- Germany: 122 institutions
- France: 105 institutions

- OpenAPC metadata schema has been extended to the openCost metadata schema

## Further information

- Website: <https://opencost.de/en>
- openCost publications: <https://www.opencost.de/en/publications/>
- openCost mailing list: [opencost.info@mailman.uni-regensburg.de](mailto:opencost.info@mailman.uni-regensburg.de)
  
- Github repository: <https://github.com/opencost-de/opencost>
  - Contains the schema and its documentation (including FAQs, tabular description, XSD file for formal verification, and folder with valid sample files)
  - Tracks the evolution of the schema in a transparent way
  
- **Invitation:** Final openCost workshop (1<sup>st</sup> phase)
  - Oct. 7 – 9 in Regensburg (Germany)



# Thank you for the attention!

**Bianca Schweighofer**

**University Library of Regensburg**

**[bianca.schweighofer@ur.de](mailto:bianca.schweighofer@ur.de)**

Project team: Julia Bartlewski, Christoph Broschinski, Gernot Deinzer,  
Dirk Pieper, Colin Sippl, Lisa-Marie Stein, Alexander Wagner, Silke  
Weisheit