# Open Access and beyond...

# Sci Post

DPG Verhandlungen Rostock
AGI 1: New concepts in scientific publishing

13 March 2019

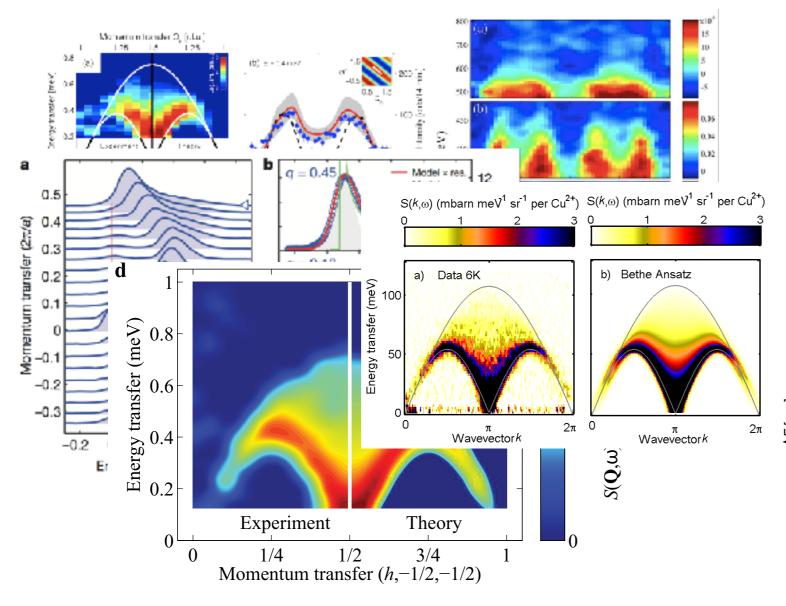
Jean-Sébastien Caux

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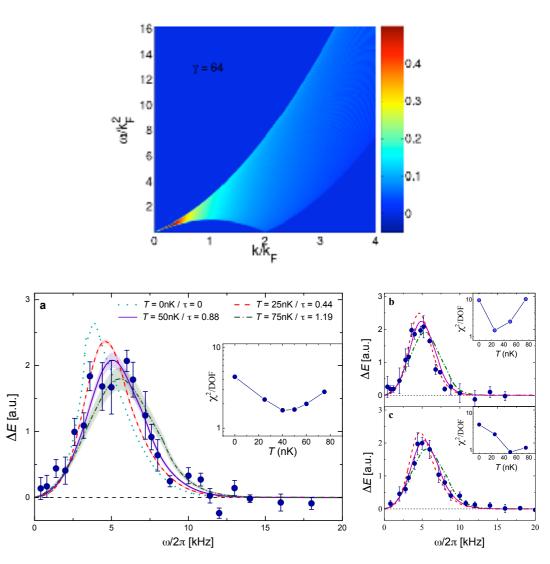


# Strongly-correlated systems

#### Quantum magnetism



#### **Ultracold atoms**

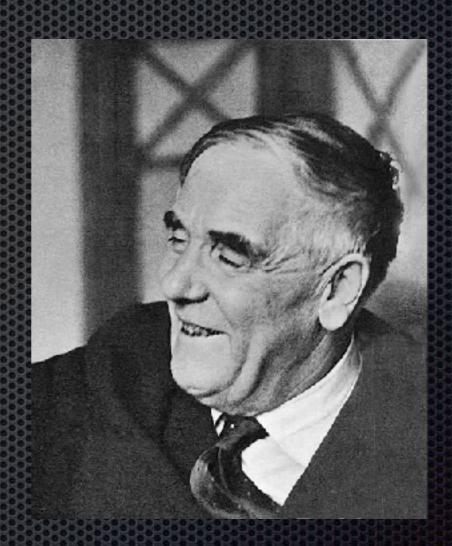


Out-of-Equilibrium Dynamics from Integrability

# The simple pendulum on its head



Kapitza pendulum, 1951



Pyotr L. Kapitza (8/7/1894-8/4/1984)

# The Kapitza pendulum



## Points of concern for scientists

- accessibility of published material
- quality of final product
- usefulness of refereeing process
- freedom to author science honestly (no smoke & mirrors)
- form of impact assessment (the impact of the impact factor)

# Annoyances

- paywalls; financial dealings
- refereeing not always constructive or useful
  - lack of editorial and referee expertise
  - use of non-scientific criteria
- journal title more important than paper's content when assessing quality and importance

# Het weekblad dat wetenschappelijke carrières kan breken

De power van Nature

ARTIKEL Wetenschappers begaan desnoods een moord om te kunnen publiceren in Nature. Hoe is dat eigenlijk het belangrijkste wetenschappelijke tijdschrift ter wereld geworden? De Volkskrant ging langs bij de redactie in Londen.

Door: Martijn van Calmthout 9 juli 2016, 02:00

'Nature is het surrogaat geworden voor serieuze kwaliteitsbeoordeling van onderzoekers. Wij betreuren dat, omdat voor ons de nieuwswaarde voor de wetenschap voorop staat. We brengen wat nieuw en opwindend is. Het moet wel goed zijn, maar het is niet per definitie ook de beste wetenschap.'

Philip Campbell, editor-in-chief Nature

# **Open Access policy**

Budapest Open Access Initiative (2002)
Bethesda Statement (2003)
Berlin Declaration (2003)

Amsterdam Call for Action (2016)

Amsterdam Call for Action (2016) Appel de Jussieu (2017) Plan S (2018)

My personal perspective:

extremely good but the details...

Missing:

- The implementation
- Scientist's view
- Incentives



What is it?

A complete scientific publishing portal

(it's a fully-featured publishing entity)

Who runs it?

**Professional scientists** 

(it is and will remain entirely grassroots)

What does it offer?

Journals

Commentaries

Theses links

**Two-word summary?** 

Openness

Quality



#### What does it aim to achieve?

- Implement Genuine Open Access
  - two-way: free for readers, free for authors
- Decouple scientific & financial issues
  - isolate scientists from the latter
  - remove publish-to-cash-in flaw of current APCs
- Modernize the refereeing procedure
  - Give more credit to referees
  - Streamline post-publication feedback
- Reform impact assessment



#### Genuine Open Access Principles

[CO]	Community Ownership	The Journal has a transparent community-anchored ownership structure, and is controlled by and responsive to the scholarly community.	
[OI]	Open Infrastructure	The infrastructure for operating the Journal belongs to, and is open sourced to the community. The entire technological stack and all operating protocols are documented and made easily transferable between community owners.	
[CA]	Copyright to authors	Authors of articles in the Journal retain copyright. The Journal assists authors in protecting their rights in case of infringement.	
[OA]	Open Access	All articles are published open access and an explicit open access licence is used which is preferably Approved for Free Cultural Works.	
[OC]	Open Citations	The Journal makes its citation metadata openly accessibly by actively participating in the Initiative for Open Citations.	
[FF]	Fee Free	Submission, peer evaluation and publication are not conditional in any way on the payment of a fee from authors or their employing institution, or on membership of an institution or society.	
[NP]	Non Profit	The Journal publisher's operations are entirely non profit.	
[OF]	Open Finances	The Journal's finances are openly published and available for public scrutiny.	
[AE]	Academic Editing	The editorial processes of the Journal are run by the community, and all editorial decisions are taken by active professional scientists, using exclusively academic scholarship-based criteria.	



#### Organisational structure:

#### **Stichting SciPost**

non-profit foundation, ANBI

#### **Advisory Board**

a dozen preeminent scientists

#### **Editorial College**

professionally active senior scientists (numbers scaled with operations, currently 65)

#### **Executive**

Admin + teams of officers running operations

- Development
- Production
- Support

#### **Sponsors**

Financial backbone



Editorial flowchart: *peer-witnessed refereeing* Inspirations: *F1000; ACP, PLOS...* 

#### Author(s):

manuscript preparation (templates available)

Submission

#### **Editorial College:**

a **Fellow** takes charge of the Submission

**Contributors** 

Contributed Reports, Comments

Manuscript **Submission** Page

**Editorial College** 

takes publication decision by vote



Fellow in charge

formulates editorial recommendation

**Invited Reports** 

**Invited Referee** 

**Invited Referee** 

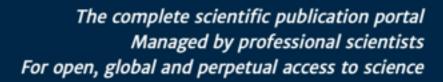
**Invited Referee** 



# What you should know:

- Fully professional publishing (not "overlay")
- ★ Indexed in Google Scholar, Web of Science ESCI
- **★ DOAJ Seal**
- No APCs
- Open refereeing == top quality required
- Authors preserve copyright
- Cited-by linking (Crossref)
- Full FundRef/Crossmark integration

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#### **Latest Publications**

Condensed Matter Physics – Theory

Time-dependent study of disordered models with infinite projected entangled pair states

Claudius Hubig, J. Ignacio Cirac

SciPost Phys. 6, 031 (2019) · published 11 March 2019

High-Energy Physics -Phenomenology

#### OCD or what?

Theo Heimel, Gregor Kasieczka, Tilman Plehn, Jennifer M Thompson

SciPost Phys. 6, 030 (2019) · published 8 March 2019

#### Latest Submissions

Condensed Matter Physics – Theory

Diffusion in generalized hydrodynamics and quasiparticle scattering

by Jacopo De Nardis, Denis Bernard, Benjamin Doyon

Submitted 2019-03-05 to SciPost Physics

High-Energy Physics - Theory

A Toy Model of the Information Paradox in Empty Space

by Suvrat Raju

Submitted 2019-03-05 to SciPost Physics

#### Our future: Plan SciPost

It is time for us to be bold and unleash the next steps in our implementation plans. Read more here.

#### Register

Professional scientists (PhD students and above) can become Contributors to SciPost by filling the registration form.

#### News

<u>س</u>

Latest news and announcements.

Shang-Chun Lin and Martin Oettel receive the Select label

26 February 2019

"A classical density functional from





scipost physics





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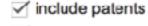
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Conformal field theory for inhomogeneous one-dimensional quantum systems: the example of non-interacting Fermi gases

JM Stéphan, J Dubail, P Calabrese, J Viti - SciPost Physics, 2017 - scipost.org

Abstract Conformal field theory (CFT) has been extremely successful in describing largescale universal effects in one-dimensional (1D) systems at quantum critical points. Unfortunately, its applicability in condensed matter **physics** has been limited to situations in

☆ 59 Cited by 21 Related articles All 4 versions Web of Science: 11

Ground-state energy and excitation spectrum of the Lieb-Liniger model: accurate analytical results and conjectures about the exact solution

G Lang, A Minguzzi, F Hekking - SciPost Physics, 2017 - scipost.org

Abstract We study the ground-state properties and excitation spectrum of the Lieb-Liniger model, le the one-dimensional Bose gas with repulsive contact interactions. We solve the Bethe-Ansatz equations in the thermodynamic limit by using an analytic method based on a

\[ \frac{1}{2} \]
 \[ \text{90} \]
 Cited by 4 Related articles All 2 versions Web of Science: 1

Emergent gravity and the dark universe

E Verlinde - SciPost Physics, 2017 - scipost.org

Abstract Recent theoretical progress indicates that spacetime and gravity emerge together from the entanglement structure of an underlying microscopic theory. These ideas are best understood in Anti-de Sitter space, where they rely on the area law for entanglement

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Energy diffusion and the butterfly effect in inhomogeneous Sachdev-Ye-Kitaev chains

A Lucas, Y Gu, XL Qi - SciPost Physics, 2017 - scipost.org

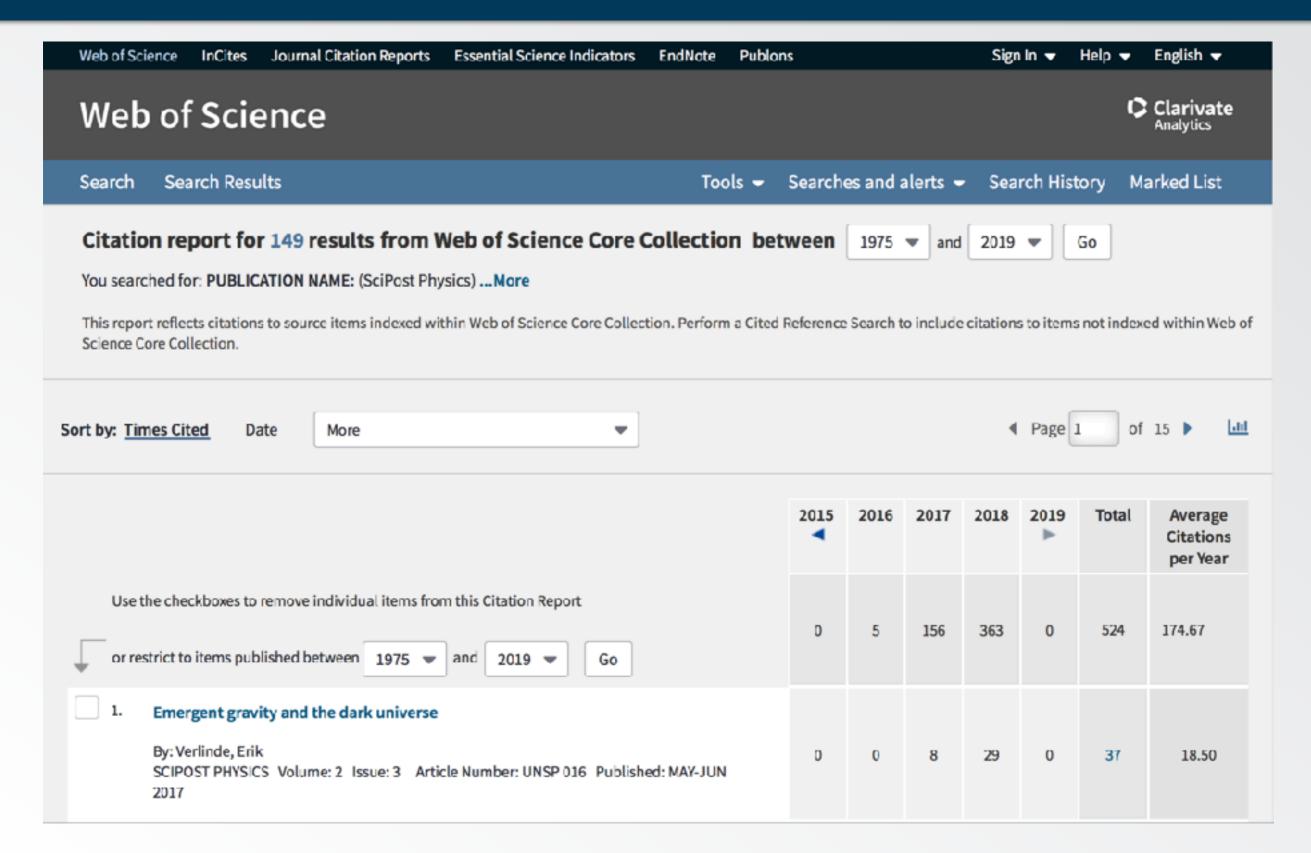
Abstract We compute the energy diffusion constant \$ D \$, Lyapunov time \$\tau\_ {\text {L}} \$ and butterfly velocity \$ v\_ {\text {B}} \$ in an inhomogeneous chain of coupled Majorana Sachdev-Ye-Kitaev (SYK) models in the large \$ N \$ and strong coupling limit. We find \$ D\text{le}

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SciPost Physics. 2018;5(3):029 DOI 10.21468/SciPostPhys.5.3.029

# Publishing markets and business models

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A Modest Proposal for Markets in Scientific Publishing

Posted on 2017-12-11 Publishing

To start with the simplest and most obvious point, I'd expect to be paid at least my professional hourly rate to perform refereeing duties.

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#### A Modest Proposal for Markets in Scientific Publishing

Posted on 2017-12-11 Publishing

Pushing marketization further, if I actually feel that the quality of my refereeing work is above that of the "competition" from my colleagues, I would feel entirely justified to do what every other business person would do with a better, more desirable product, namely: charge more.

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#### A Modest Proposal for Markets in Scientific Publishing

Posted on 2017-12-11 Publishing

As a science author, I'd expect to be approached by top journals and offered realistic payments in order for me to consider sending my work to their venue (not the rather ironic "discounts" on APCs). When selling my publication preprint, I could consider competing offers and perhaps systematically go for the highest bidder.

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#### A Modest Proposal for Markets in Scientific Publishing

Posted on 2017-12-11 Publishing

Coming to think of it, I would never actually agree to "sell" my work to a publisher. Thinking of my own interest and of proper marketization of my qualities as a scientist, I'd implement a leasing system where a publisher would pay me yearly fees for me to agree that my publication be (temporarily, I'm no fool) hosted on their platform.

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#### A Modest Proposal for Markets in Scientific Publishing

Posted on 2017-12-11 Publishing

At the end of each term, this agreement could be revised; for a particularly well-cited paper, I would unashamedly and without any moral qualms inflate the rental price up to that set (in an unquestionably correct way, at least according to some thinkers) by the "rental" market.

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#### A Modest Proposal for Markets in Scientific Publishing

Posted on 2017-12-11 Publishing

For my very best publications, I'd unhesitantly place all rights to them in a numbered company registered in a tax haven, so that my inheritors can continue reaping the well-deserved benefit of my hard-earned rewards as a researcher even when I'm gone. Then, and only then, could I feel I have my well-deserved place among my corporate publishing buddies.

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A Modest Proposal for Markets in Scientific Publishing

Posted on 2017-12-11 Publishing

# Sure, markets work well... except when they don't.

# Classifying publishing business models

Noble metals for a noble cause

Posted on 2017-09-20 Publishing

Gold [Au]	APC-based financing
Platinum [Pt]	publisher does not apply any charges to authors (APCs, submission charges or any other), and is funded through a consortial scheme or equivalent
Palladium [Pd]	publisher runs a purely not-for-profit public enterprise: none of its activities generate any profit, and all financial statements are publicly disclosed

 Iron [Fe]
 subscription-based financing, or pay-to-read

 Lead [Pb]
 editorial and financial aspects are not hermetically decoupled

# Gradations of openness

Grade	Principle	Characteristics
10-karat	generosity to readers: open access	<ul> <li>make full text of publications freely available to readers (Creative Commons license)</li> </ul>
14-karat	generosity to authors: copyright, embargo	<ul> <li>copyright is given to the authors without restrictions</li> <li>publishing occurs without any embargo period</li> </ul>
18-karat	generosity to users: reuse, remix, crawl, citations	<ul> <li>publication license allows reuse and remixing of content (CC BY, BY-SA or BY-NC licenses)</li> <li>publisher allows text mining (software/spiders can automatically crawl journal content)</li> <li>publisher makes its citation data publicly available (ideally via participation in I4OC)</li> </ul>
22-karat	generosity to reviewers: open reports	refereeing reports are openly visible and citable
24-karat	generosity to community: academic control	the entire responsibility for publication decisions is in the hands of active professional scientists



# Financial matters

#### **Doubts on APCs**

- Publish-to-cash-in incentive
  - editorial & financial get entangled
- Multiple authors: who pays?
- 'Publication' is not a useful unit measure
  - page is better, but still...
  - incompatible with future forms of publishing

## The risk with just 'opening up the market'

- Top publications are 'luxury goods'
  - people will pay insane amounts for luxury watches, diamonds and sports cars, or publications if their jobs, grants (and thus livelihoods) depend on it

Funders: you have been warned...



# Sponsorship model

Inspirations:



000 ( ) [

Cornell University

1 Jan 2016: New members join arXiv Scientific Advisory Board

Astrophysics (astro-ph new, recent, find)

Astrophysics
Condensed Matter (cond-mat new, recent, find)

Open access to 1,114,394 e-prints in Physics, Mathematics, Computer Science, Quantitative Biology, Quantitative

25 Jan 2016: A project update, including a brief summary of activities in 2015, has been posted

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# **Sponsors Board**

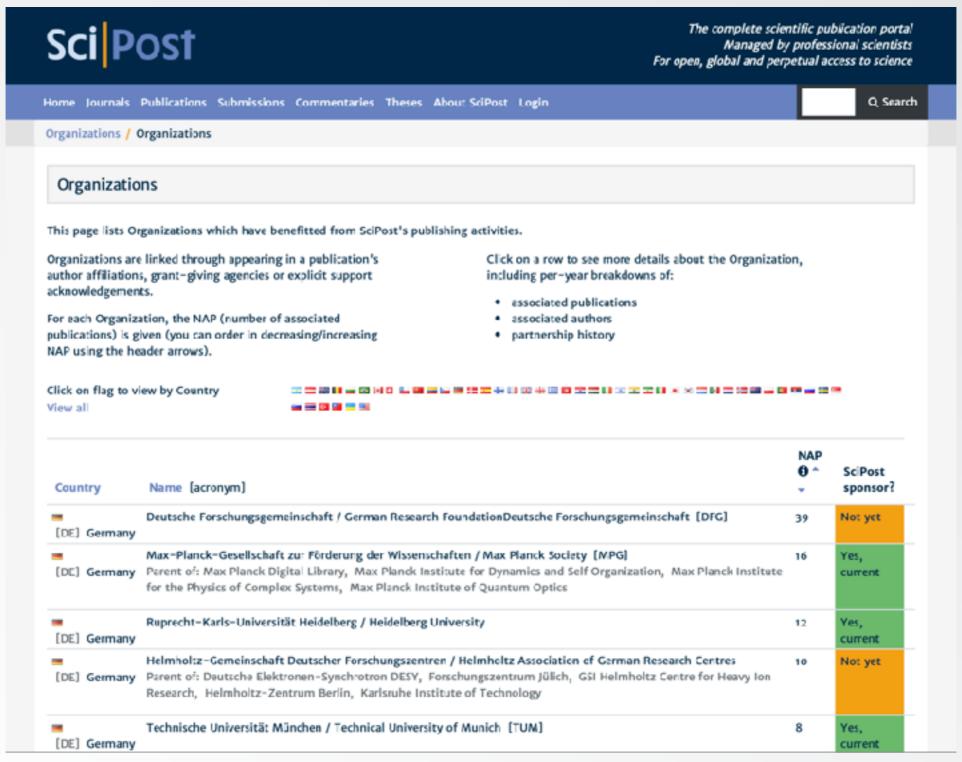
- (Inter)national funding agencies
- Universities & libraries
- Government
- Foundations
- Benefactors

#### Our needs:

- Running costs depend on success level.
- Partnership: ~ €1K per univ per year/domain
- Current estimate: €400/paper average

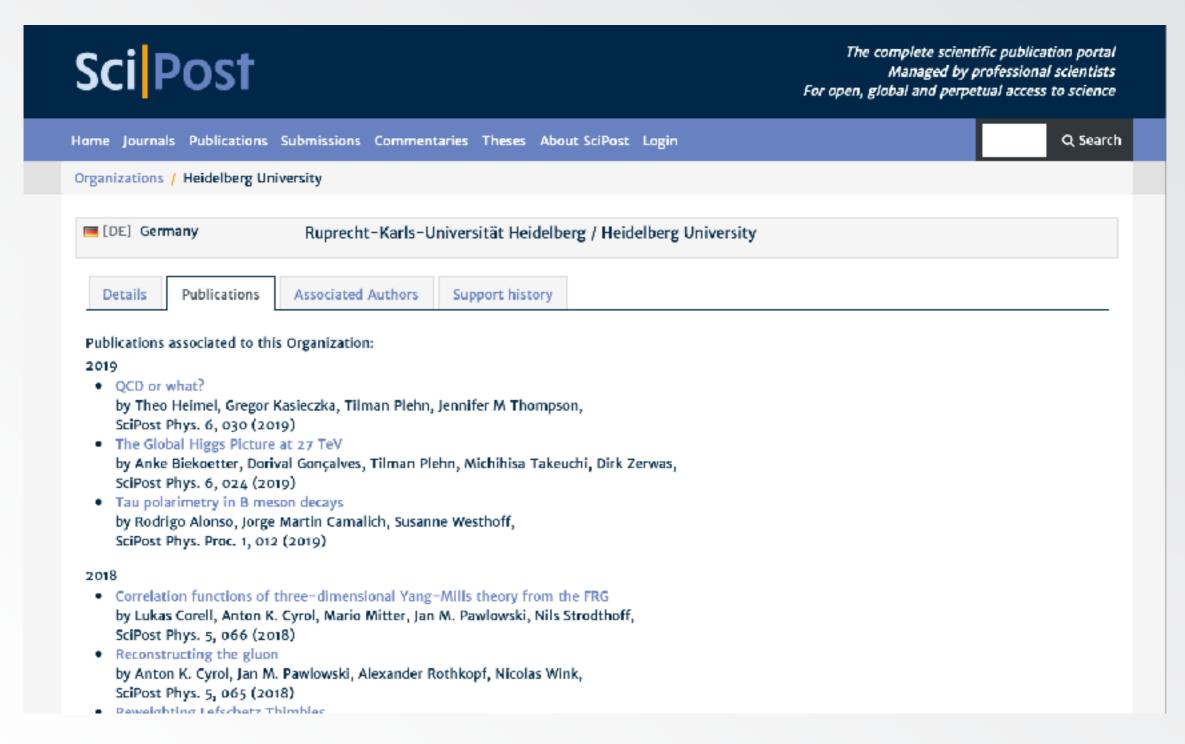


### Organizations benefitting from our activities:





#### Organizations benefitting from our activities:



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## **Sponsors:**

















**Technical** University of Munich

























# Sci Post

## **Austrian consortium**



Der Wissenschaftsfonds.























## Our immediate challenges:

- increase awareness/acceptance from scientists
  - this is going well: colleagues (seniors/juniors) thirsty for change
  - immobility of existing metrics is a limiting factor (self-IF: 5.25 !!)
  - lack of & incorrect awareness from scientists is a big problem
- gather concrete support from stakeholders to ensure viability (Sponsors)
  - cooperative model == cheapest integrated solution
  - disruptive market player; useful negotiation trump card
  - slow commitment from libraries/funders is the limiting factor
- open Journals in other fields
- Follow-up battle (actually, it's just one big battle):
  - metrics and evaluation systems/methods I40C



#### Notable development from 2018:

# EC Call for Tenders for Open Research Publishing Platform

- EC asks for ~what SciPost already does
- Barred from applying (turnover < 1M€, 1 area)</p>

In a sense, a missed opportunity for the EC, but a real opportunity for SciPost:

- vindication/endorsement of publishing model like ours
- chance to profile ourselves as the better platform by capitalizing on the "faults" of the call

See: jscaux.org/blog

Thoughts on the Call for Tenders for the EC's Open Research Publishing Platform

#### Europhysics News 48/5-6, 2017, p. 25-28, doi:10.1051/epn/2017503



#### REDRESSING THE INVERTED PYRAMID OF SCIENTIFIC PUBLISHING

■ Jean-Sébastien Caux – Institute of Physics, University of Amsterdam – DOI: https://doi.org/10.1051/epn/2017503

Scientific publishing is currently undergoing a progressively rapid transformation away from the traditional subscription model. With the Open Access movement in full swing, existing business practices and future plans are coming under increasing scrutiny, while new "big deals" are being made at breakneck speed. Scientists can rightfully ask themselves if all these changes are going the right way, and if not, what can be done about it.

ortunately, in this day and age, some spheres of human activity remain anchored in rational thinking, evidence-based debate and error-corrected progress. Scientific research undoubtedly fits in this category: few scientists doubt that reason should prevail over nonsense. Yet, when it comes to publishing, the scientific world seems to be bathed in a maelstrom of irrational hogwash. What is going on? What can we do about it?

#### A business unlike any other

Scientific publishing, as a business, has become a truly unique inverted pyramid construction in which the "customers" pay dearly for accessing the product after actually performing themselves all the irreplaceable, not-doable-by-others steps in the manufacturing process. Historically, this tour-de-force of business abracadabra has been achieved in no small part by exploiting the other dubiously-implemented aspect of publishing,

▲ © iStockPhoto

EPN 48/5&6 25

#### From the conclusion:

#### The driver for change

Although we are far from done (we haven't even begun discussing impact assessment!), let us end here by performing a simple thought experiment. From next January, for a period of 3 years, imagine that all scientists agreed to exclusively submit their manuscripts to new emerging not-for-profit publishers fulfilling Platinum/Palladium 18-karat and above open access criteria (simultaneously, they would exclusively perform refereeing and editorial work for such publishers). What would happen then? By simply voting with their feet, scientists could exert overwhelming influence and drive the necessary transition to open access through all currently existing or perceived obstacles. Ultimately, the power to enforce change resides in the hands of us scientists: it is up to us to decide the future we want to see in publishing, and to make it happen in the way we want; namely, in the interests of what we love the most and is only too often forgotten in Open Access discussions: science itself.

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#### Conclusions: what should one do?

- Scientists:
  - don't just stand actively shift to peducate yourselved doing, and who
  - are you working stop, offer your :



Following

I stepped down as editor-in-chief of Elsevier's "Physics of the Dark Universe" and planning to support open-access not-for-profit publishers like @scipost\_dot\_org. See e.g. this article recently published by SciPost founder @jscaux europhysicsnews.org/articles/epn/p...





#### Conclusions: what should one do?

- Institutions & Funders:
  - update your mandates and evaluation criteria; the old measures and metrics are suffocating the transition to Open Science
  - harden your negotiating stance, you are being outsmarted by publishers (business still good!);
     superior alternatives to for-profit publishers
     exist (leverage them!) and 2) need your support
- Politicians/Governments: protect Open Science, don't pass laws that could jeopardize openness; (like the Directive on Copyright in the Digital Single Market)

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#### How can you help?

- \*\*\*Submit your work\*\*\*
- Read (and cite!) SciPost publications
- Participate in peer-witnessed refereeing
- Suggest names of Editorial Fellows
- Encourage your (and other) institutions to become Sponsors
- Make your colleagues aware of SciPost!



#### What about Plan S?

Personally: I'm very much in favour

What is the link between Plan S and SciPost?

SciPost is (over)compliant

... but has not yet received concrete support from cOAlitionS (from some members: yes it did)

c.f. point 3 of Plan S

We are hopeful!

# Sci Post



Robert-Jan Smits, Plan S meeting @KNAW, Nov. 2018



#### What about scientists' reaction to Plan S?

Personally: here, I'm partly *critical* 

Genuine concerns exist, but...

lots of incorrect info is being propagated

I'd prefer to think scientists as being immune to fake news, but...

My hope remains that scientists will embrace the needed reform rather than undermine it

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# Thanks!