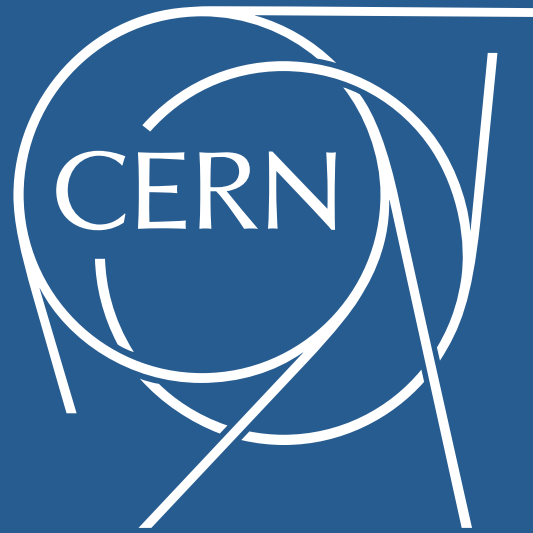


# Concepts of Open Access Transformation: The SCOAP3 experience



Salvatore MELE, CERN for the SCOAP3 Governance  
13th Berlin Open Access Conference  
Berlin, March 22<sup>nd</sup>, 2017

# SCOAP3.org

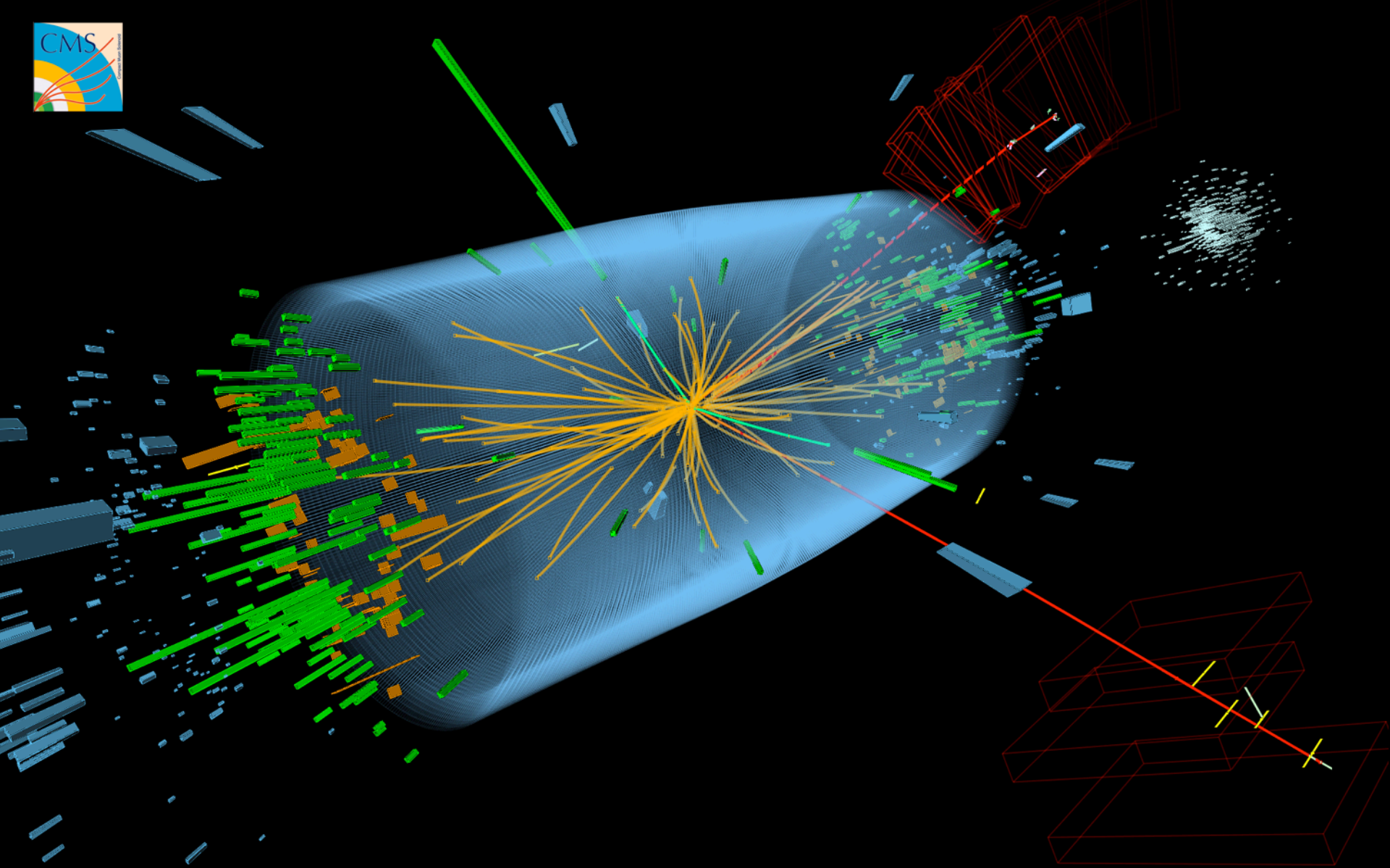
Sponsoring Consortium for Open Access Publishing in Particle Physics

*A global consortium to convert  
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# High-Energy Physics articles





Meet the Higgs Boson







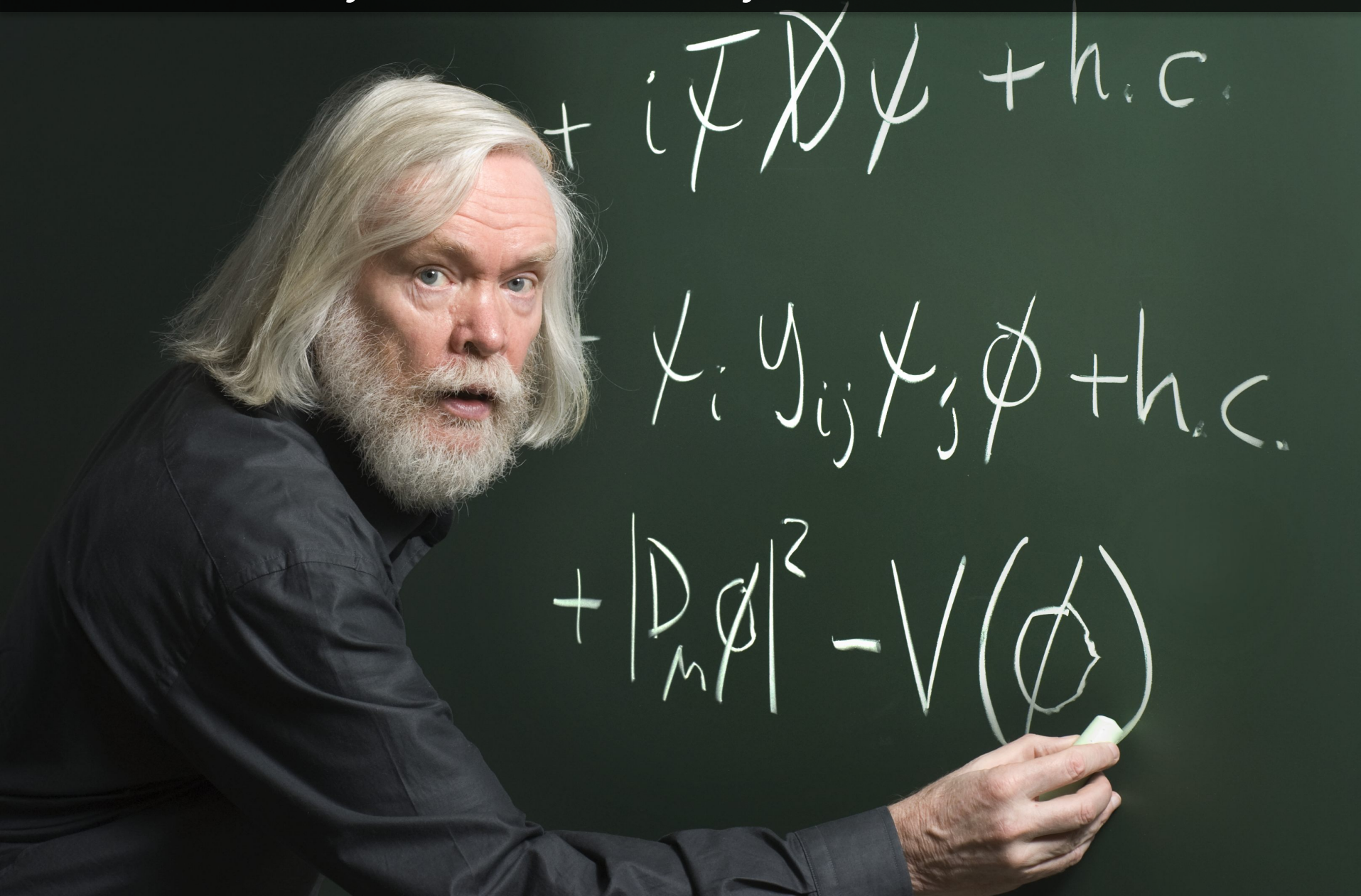
Article

5154 Authors

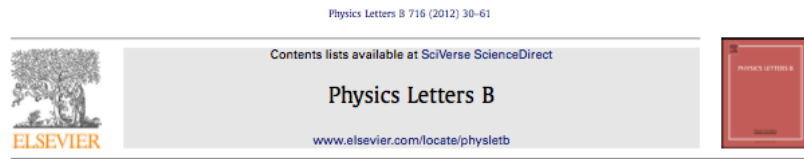
344 Institutions



90% High-Energy Physics articles: <5 authors (theorists)  
Only 2% of articles by CERN authors



# 5 largest HEP journals: 97%/year on arXiv 60% of all articles through 2016



## Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC<sup>\*</sup>

CMS Collaboration<sup>\*</sup>

CERN, Switzerland

This paper is dedicated to the memory of our colleagues who worked on CMS but have since passed away. In recognition of their many contributions to the achievement of this observation.

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$m_H$  should be smaller than  $\sim 1 \text{ TeV}$ , while precision electroweak measurements imply that  $m_H < 152 \text{ GeV}$  at 95% confidence level (CL) [14]. Over the past twenty years, direct searches for the Higgs boson have been carried out at the LEP collider, leading to a lower bound of  $m_H > 114.4 \text{ GeV}$  at 95% CL [15], and at the Tevatron proton-antiproton collider, excluding the mass range 162–166 GeV at 95% CL [16] and detecting an excess of events, recently reported in [17–19], in the range 120–135 GeV.

The discovery or exclusion of the SM Higgs boson is one of the primary scientific goals of the Large Hadron Collider (LHC) [20]. Previous direct searches at the LHC were based on data from proton-proton collisions corresponding to an integrated luminosity of  $5 \text{ fb}^{-1}$  collected at a centre-of-mass energy  $\sqrt{s} = 7 \text{ TeV}$ . The CMS experiment excluded at 95% CL a range of masses from 127 to 600 GeV [21]. The ATLAS experiment excluded at 95% CL the ranges 111.4–116.6, 119.4–122.1 and 129.2–541 GeV [22]. Within the remaining allowed mass region, an excess of events near 125 GeV was reported by both experiments. In 2012 the proton-proton centre-of-mass energy was increased to 8 TeV and by the end of June an additional integrated luminosity of more than  $5 \text{ fb}^{-1}$  had been recorded by each of these experiments, thereby enhancing significantly the sensitivity of the search for the Higgs boson.

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arXiv.org > hep-ex > arXiv:1207.7235

High Energy Physics – Experiment

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The CMS Collaboration  
(Submitted on 31 Jul 2012 (v1), last revised 28 Jan 2013 (this version, v2))

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Comments: Submitted to Phys. Lett. B  
Subjects: High Energy Physics – Experiment (hep-ex)  
Journal reference: Phys. Lett. B 716 (2012) 30  
DOI: 10.1016/j.physletb.2012.08.021  
Report number: CMS-HIG-12-028; CERN-PH-EP-2012-220  
Cite as: arXiv:1207.7235 [hep-ex]  
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<sup>\*</sup> © CERN for the benefit of the CMS Collaboration.

<sup>\*</sup> E-mail address: cms-publication-committee-chair@cern.ch.

# SCOAP<sup>3</sup> model

# SCOAP<sup>3</sup> (Sponsoring Consortium Open Access Publishing in Particle Physics)

Journals chosen & APC set  
through open procurement  
based quality/price ratio

Researcher



- No change in behavior
- No direct costs/burden
- Retains copyright



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Contracts



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for the benefit of  
SCOAP<sup>3</sup>

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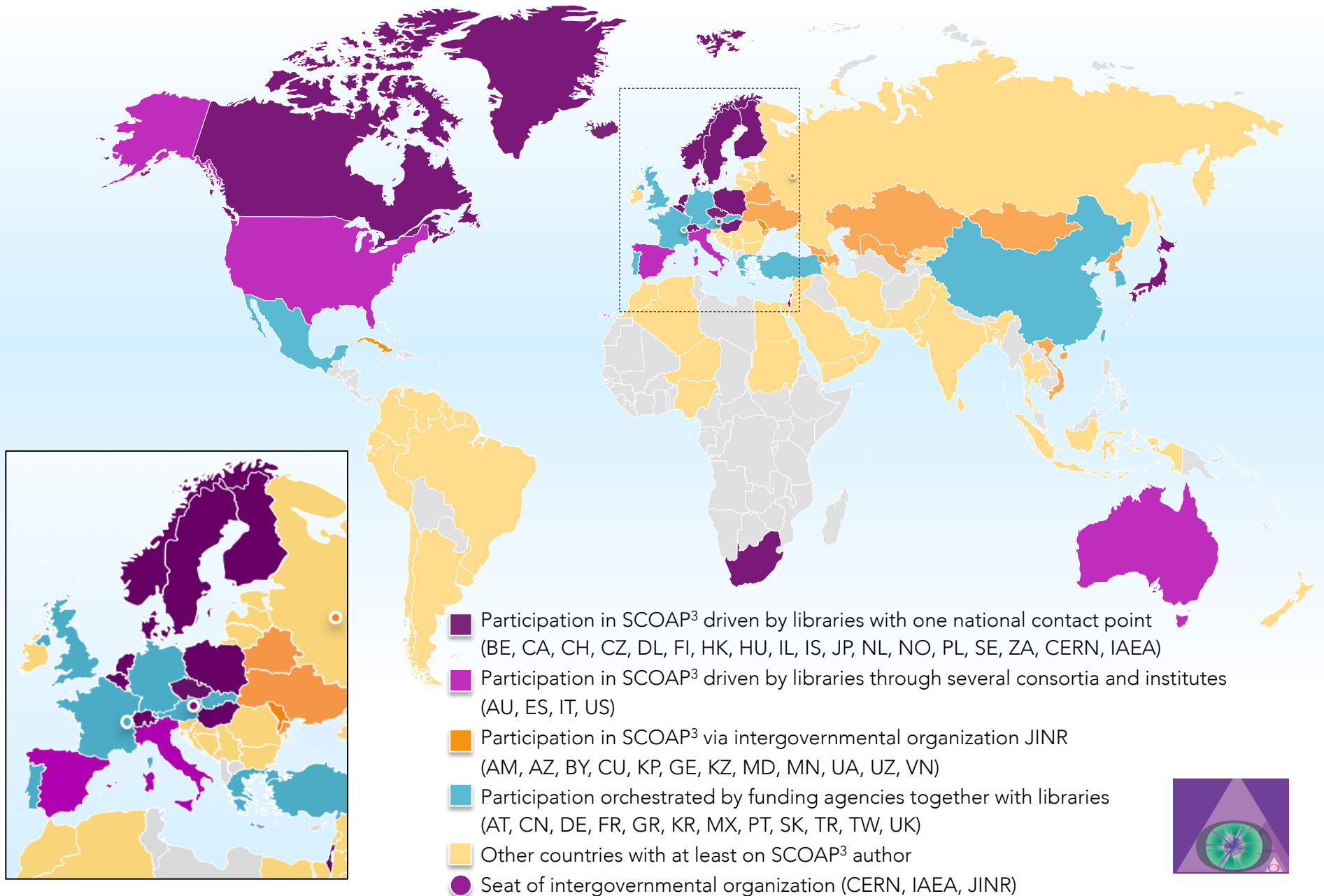




Lightweight operations: 1.3 FTE & 1 intern

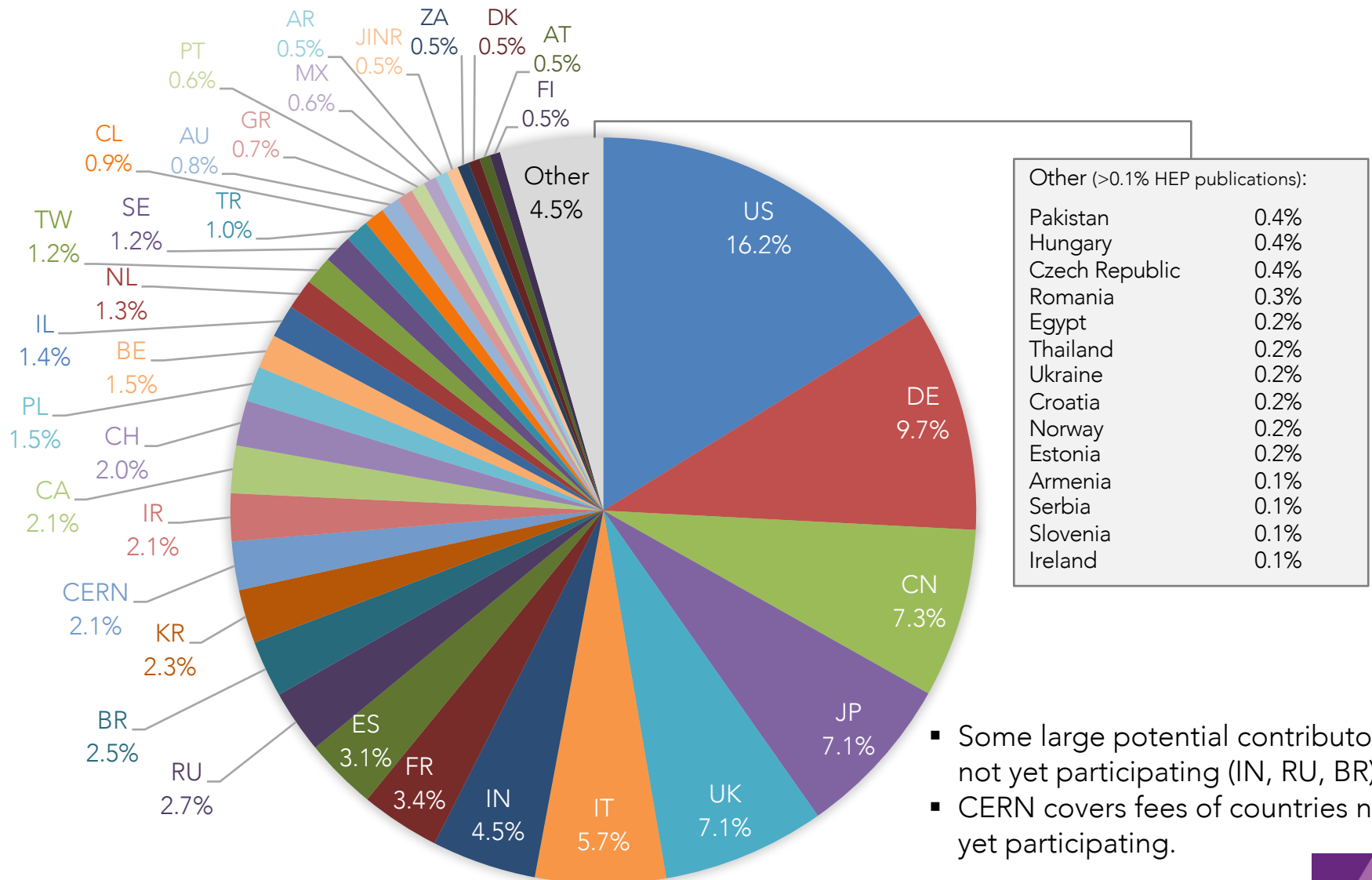


# SCOAP<sup>3</sup> 3'000+ libraries, 52 partners, 44 countries

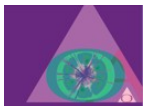


# Country contributions scale with publications

Share of HEP publications 2014-2015 (as used for SCOAP<sup>3</sup> Phase 2)



Note: The first phase of SCOAP<sup>3</sup> (2014-2016) was based on the share of HEP publications 2005-2006.



2005

A digital flip clock with four columns. The first column shows '2' on top and '2' on bottom. The second column shows '0' on top and '0' on bottom. The third column shows '0' on top and '0' on bottom. The fourth column shows '5' on top and '5' on bottom. The top row of digits is white on a dark gray background, and the bottom row is white on a black background. Each digit is connected to a horizontal bar by two small silver pins.





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# SCOAP<sup>3</sup> Timeline

2005-2006: options for Open Access in HEP  
2007-2008: design & business model  
2009-2011: consensus building  
2012-2013: procurement & start-up  
2014-2016: operations & partnership growth  
2017-2019: extension of operations  
2020+ : invisible, sustainable infrastructure










# SCOAP<sup>3</sup> impact



# SCOAP<sup>3</sup> 2014-2016 book-closing

~4,500/year theoretical and experimental articles, from all over the world

7/10 journals and 69% of articles published  
or co-published by learned societies

Publisher	Journal		Phase 1 2014 – 2016	Total payments
	Nuclear Physics B	Flip	1,008	6,621,200 \$
	Physics Letters B	Flip	2,654	
 Hindawi	Advances in HEP	OA	512	133,000 \$
 	Chinese Physics C	% Flip	91	76,000 £
	JCAP	% Flip	654	677,600 £
	New J of Phys.	OA	25	30,000 £
	Acta Phys. Pol B	% Flip	56	27,500 €
 	PTEP	OA	255	204,500 £
 	Eur.Phys.Journ. C	Flip	1,830	6,764,500 €
	JHEP	Flip	6,283	

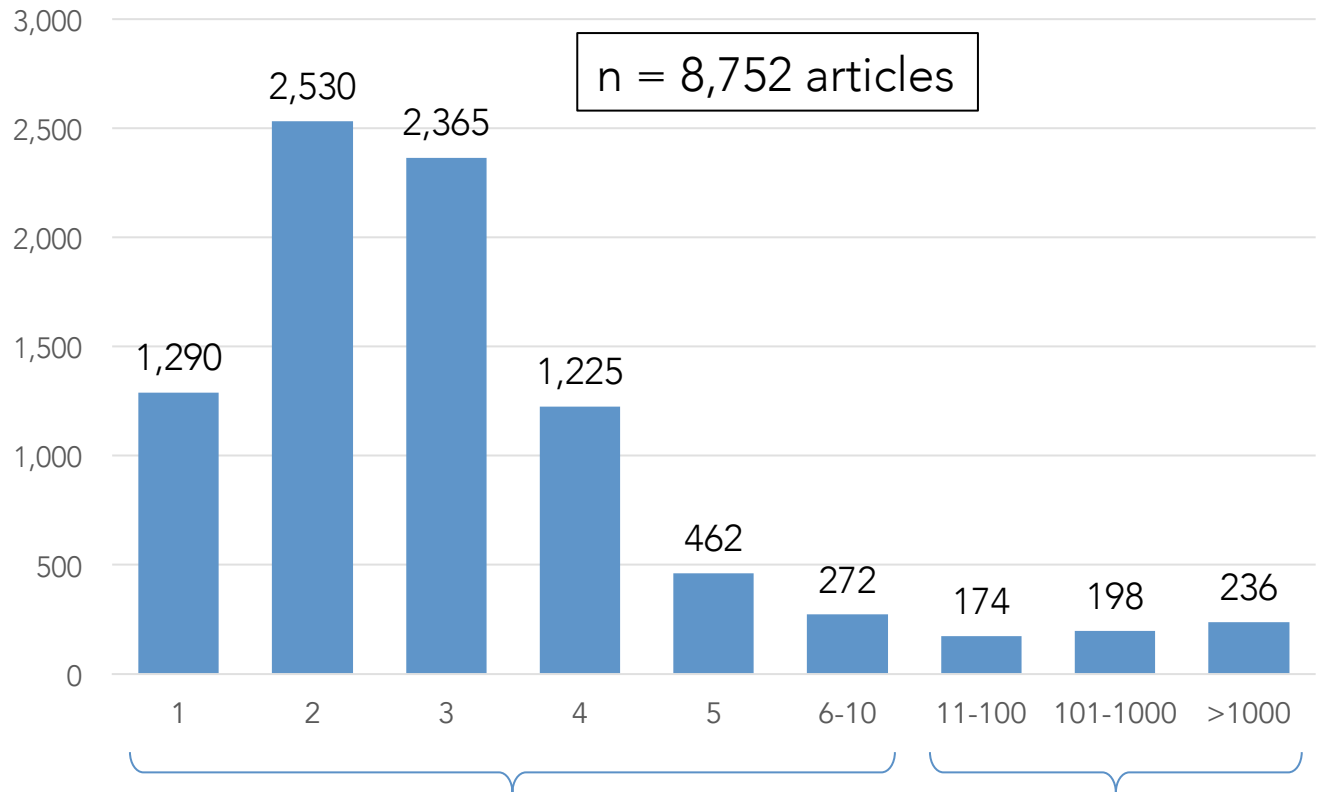
Total: 13,368 13,905,300 €

Average investment per article 1,040 €

Library subscriptions: 76% | Funding agencies: 16 % | CERN 8%

# 93% of SCOAP<sup>3</sup> articles have 1-10 authors

Articles published in SCOAP<sup>3</sup> journals 2014-2015 by number of authors

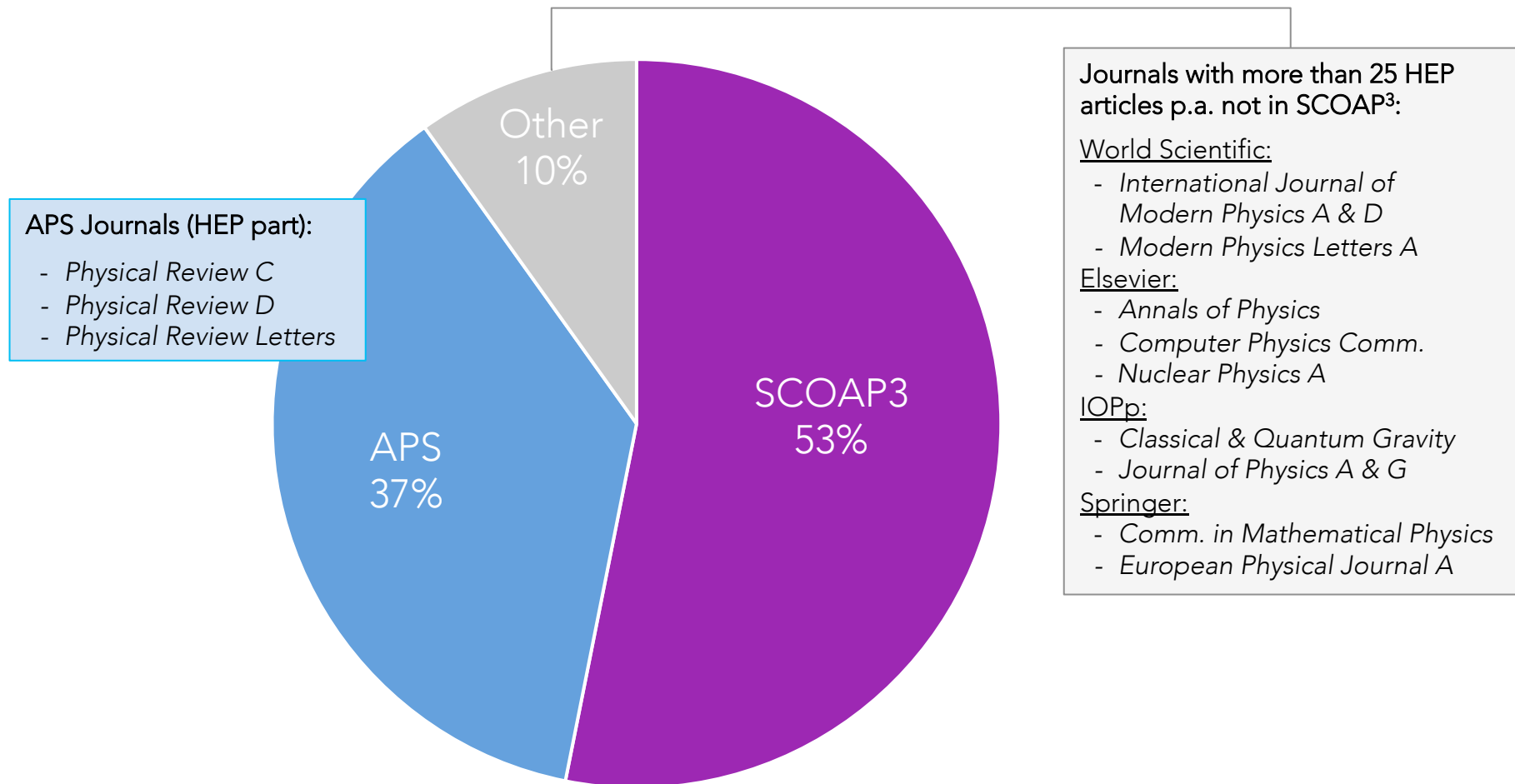


Mostly theoretical  
articles

Experimental articles by  
large collaborations:

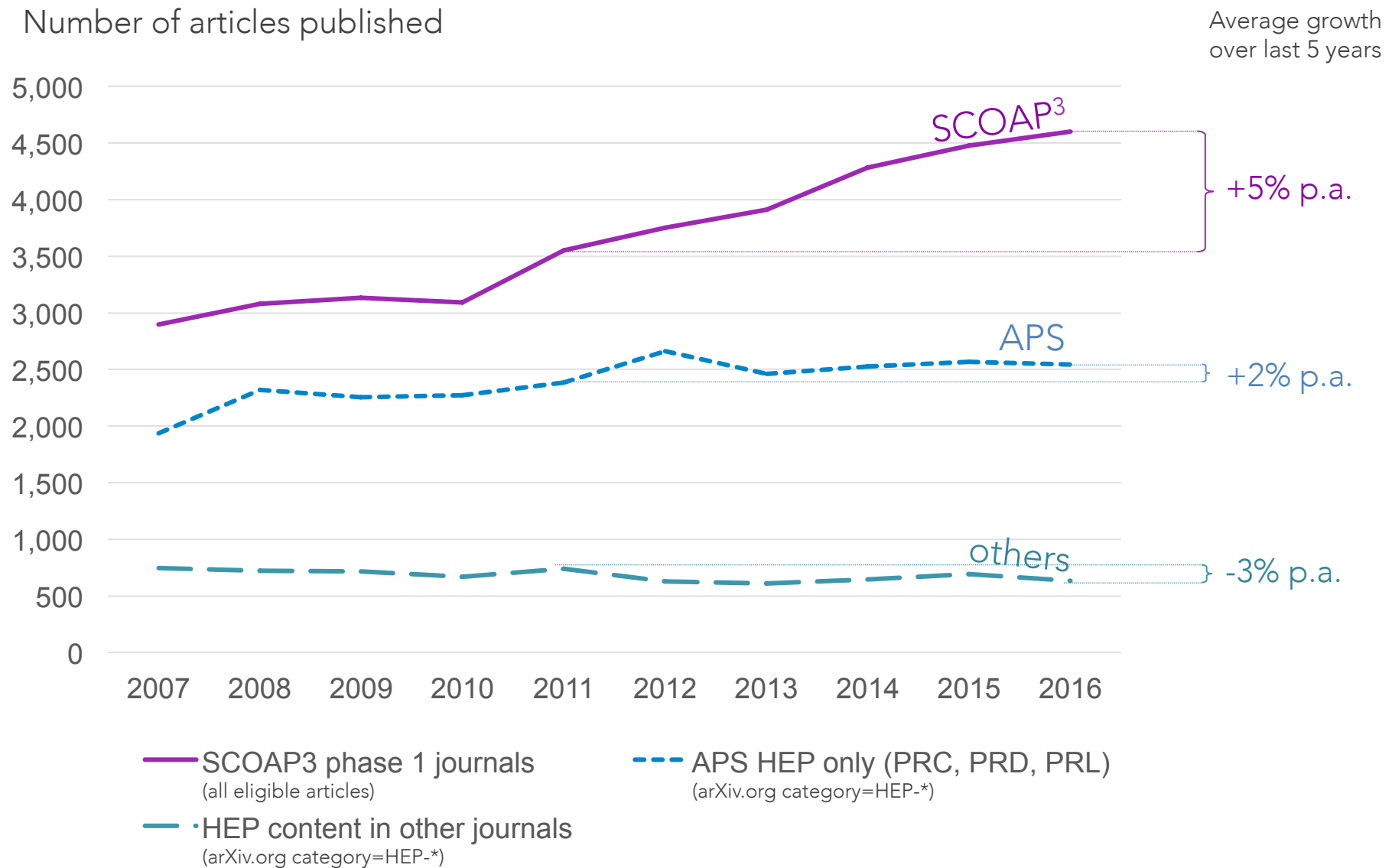
- 53% experiments at CERN
- 47% other experiments  
(mainly in Japan, China, US)

# SCOAP<sup>3</sup> covers the majority of HEP content



This analysis includes HEP articles published 2014 and 2015 in the listed journals. A HEP article is defined as an article submitted to arXiv in one of the HEP categories: HEP-EX, HEP-LAT, HEP-PH, HEP-TH. For simplification, journals with less than 25 HEP articles/year were excluded.

# Article growth in High-Energy Physics



# SCOAP<sup>3</sup> doubles Elsevier/Springer HEP download

## Comparing 2015 and 2013 (before SCOAP<sup>3</sup>)

- Elsevier & SpringerNature download counts
- Downloads in ScienceDirect and SpringerLink doubled for journals participating in SCOAP<sup>3</sup>
- Downloads from all over the world



Visualization of the origin of PLB downloads

See for Elsevier: <http://elsevier.com/connect/scoap3-and-elsevier-extend-open-access-initiative-for-3-more-years>

See for Springer: <http://springersource.com/scoap3-extends-open-access-initiative-through-2019/>

## Open Access articles drive downloads

- SCOAP<sup>3</sup> articles account for
  - 3% for the 2 Elsevier journals<sup>a</sup> (downloads doubled)
  - 30% for the 2 Springer journals<sup>b</sup> (downloads doubled)

<sup>a</sup> ~2,500 SCOAP3 articles compared to ~81,000 articles in total

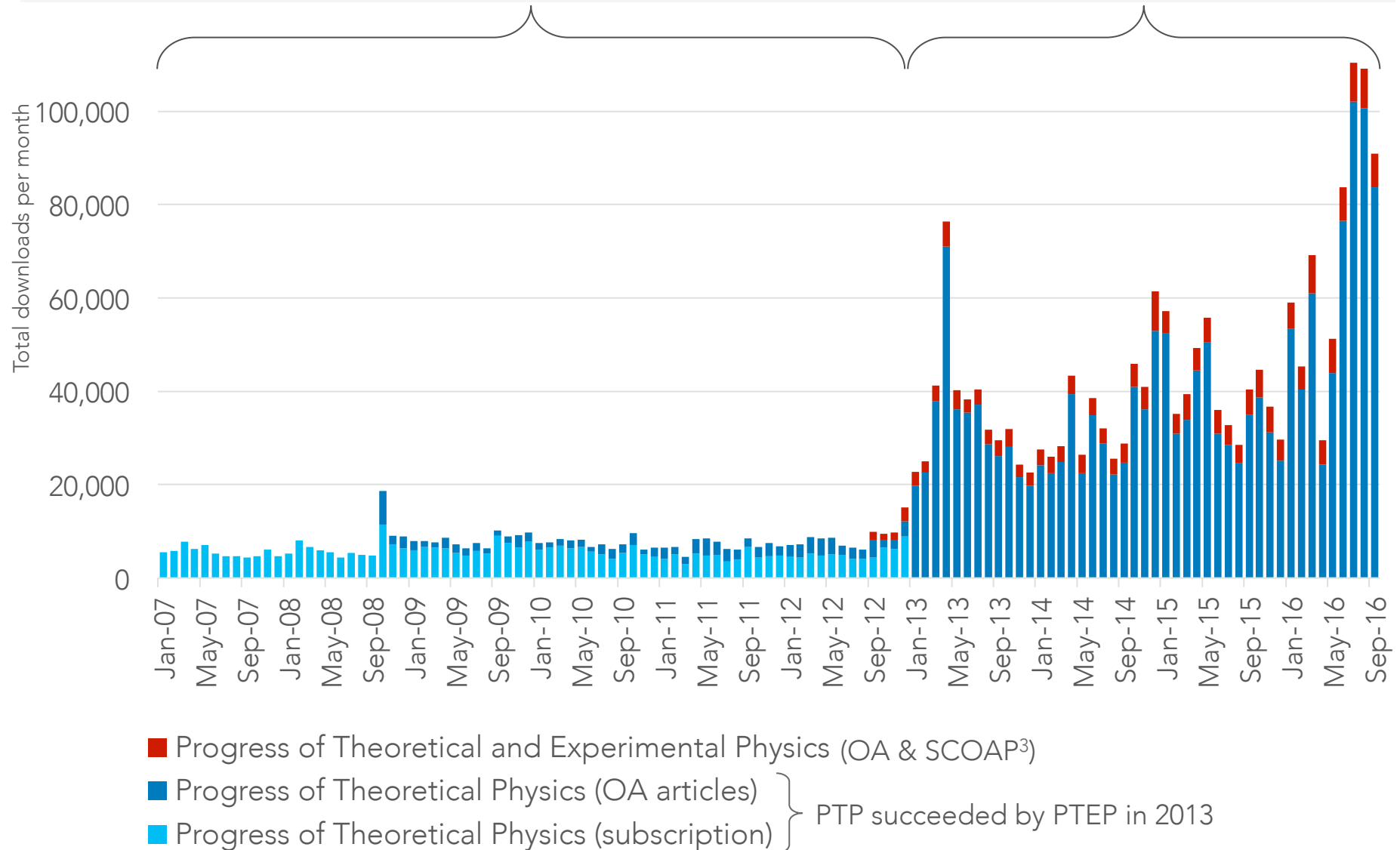
<sup>b</sup> ~5,300 SCOAP3 articles compared to ~18,000 articles in total

# OUP/Japan. Phys. Soc. downloads increase 18x!

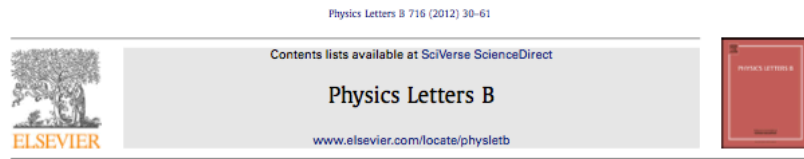
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per article & year

PTP: 8.4

PTP OA: 45.4 (x5)  
PTEP (OA & SCOAP<sup>3</sup>): 151.7 (x18)



# 5 largest HEP journals: 97%/year on arXiv 60% of all articles through 2016



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CMS Collaboration<sup>\*</sup>

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<sup>\*</sup> E-mail address: cms-publication-committee-chair@cern.ch.

arXiv.org > hep-ex > arXiv:1207.7235

High Energy Physics – Experiment

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Subjects: High Energy Physics – Experiment (hep-ex)

Journal reference: Phys. Lett. B 716 (2012) 30

DOI: 10.1016/j.physletb.2012.08.021

Report number: CMS-HIG-12-028; CERN-PH-EP-2012-220

Cite as: arXiv:1207.7235 [hep-ex]  
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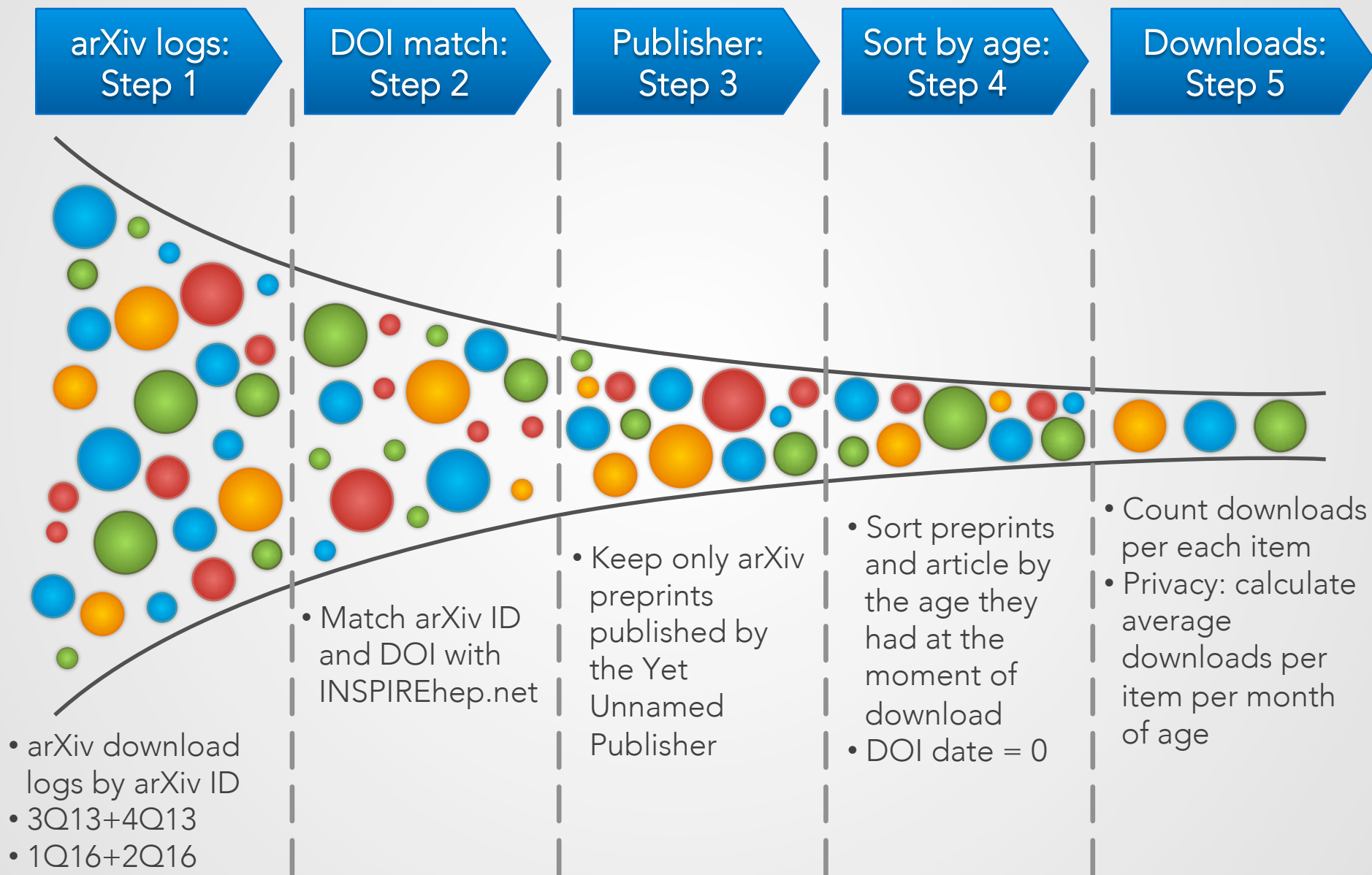
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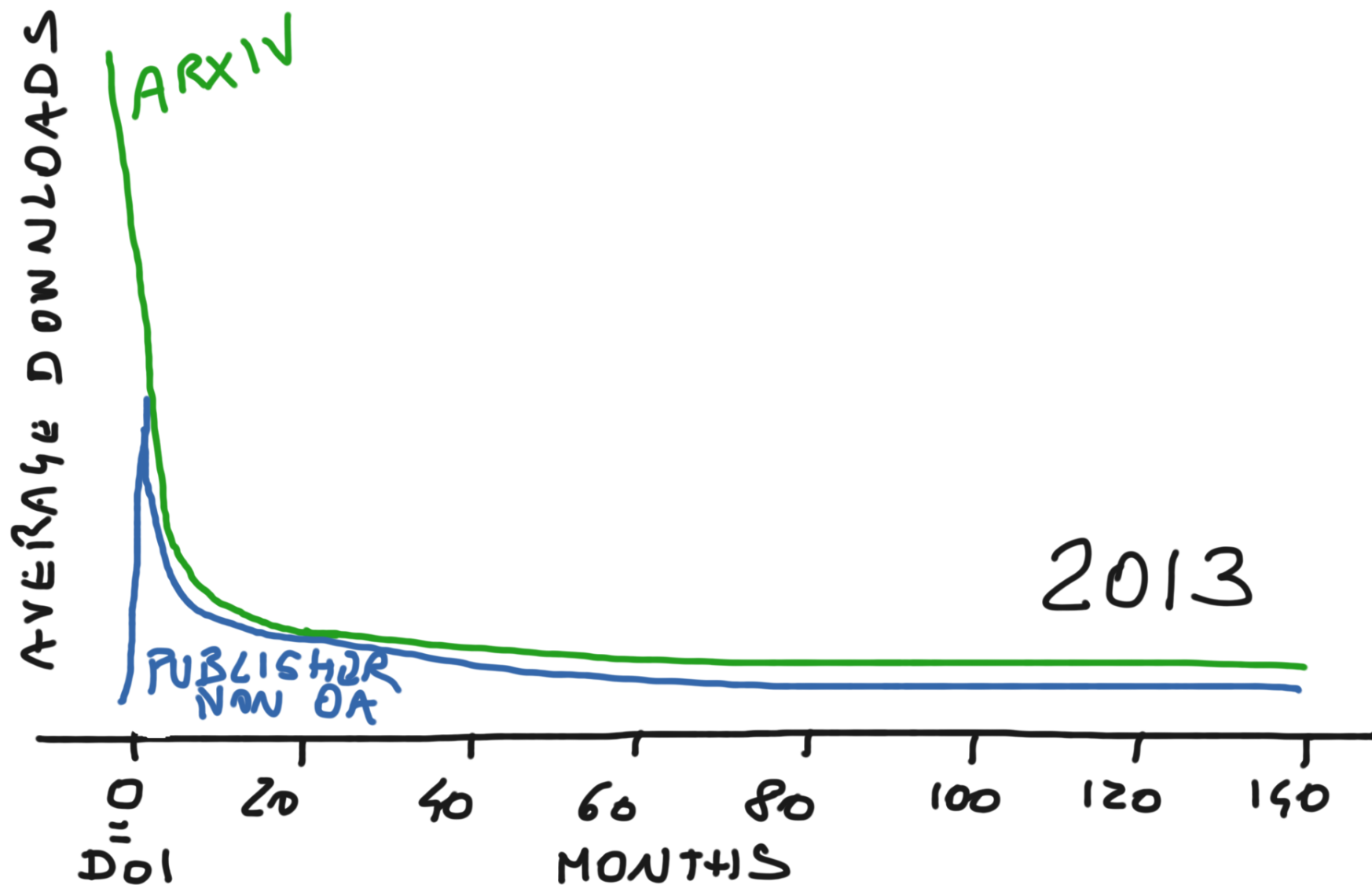


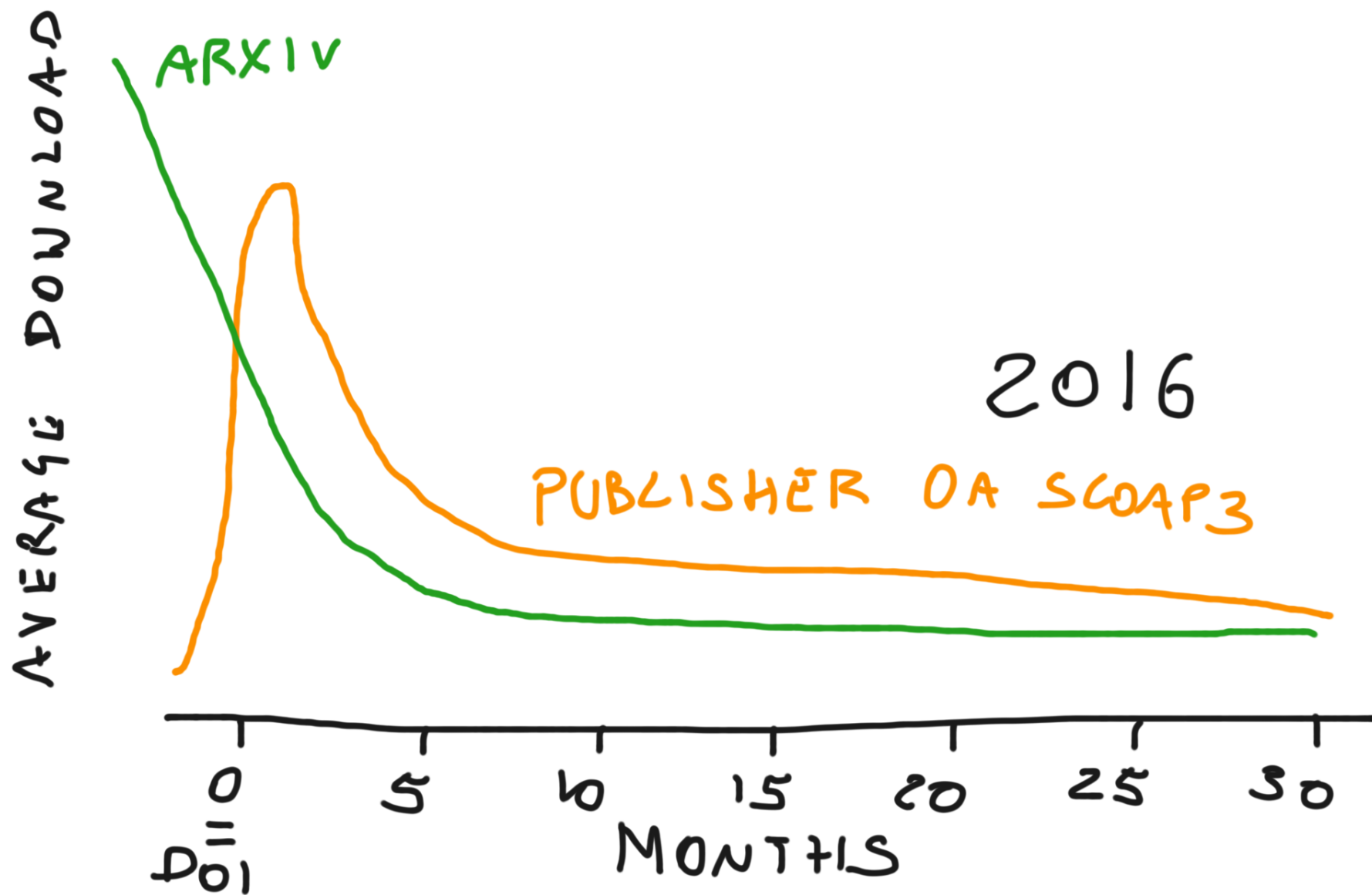


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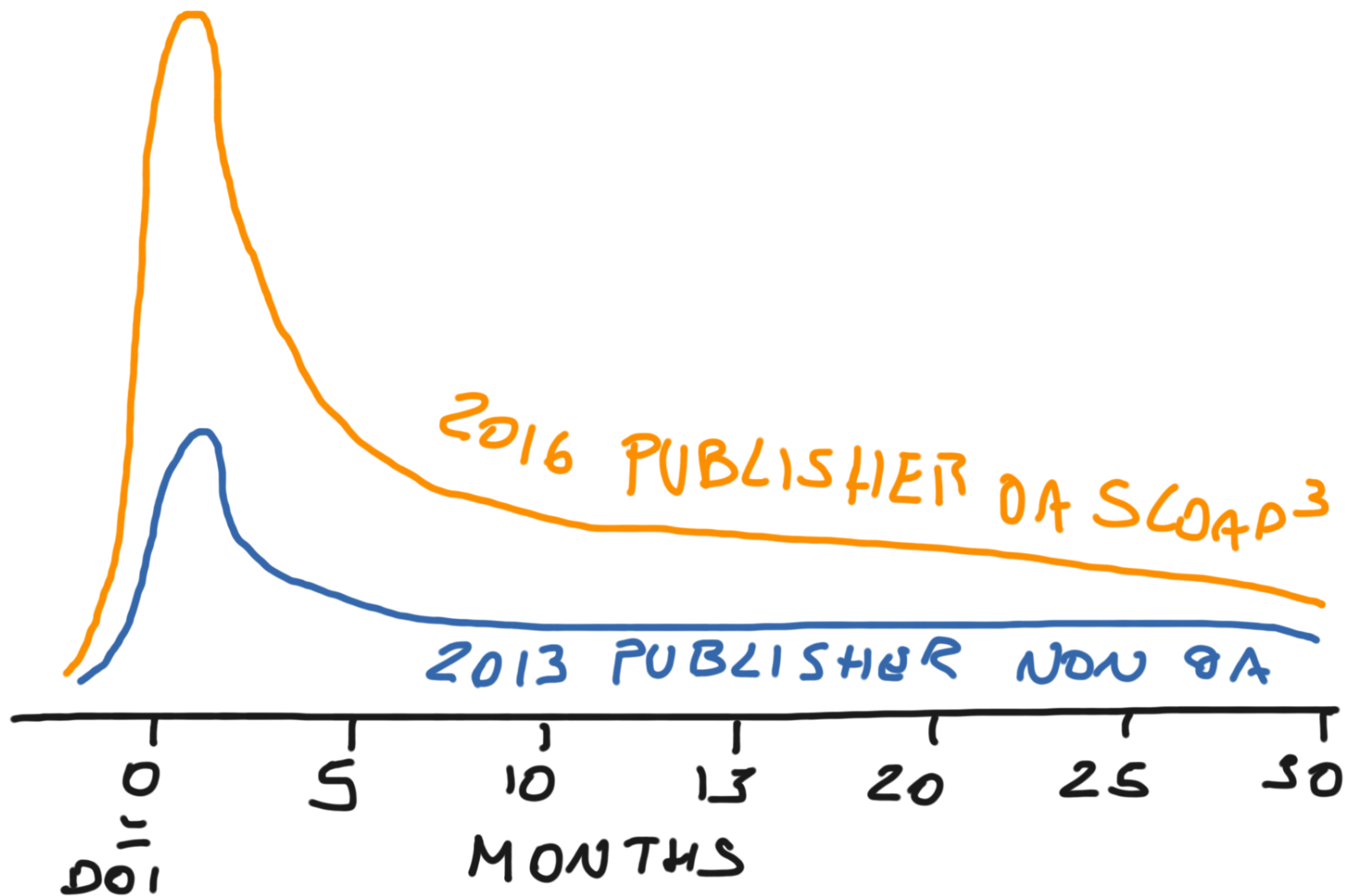
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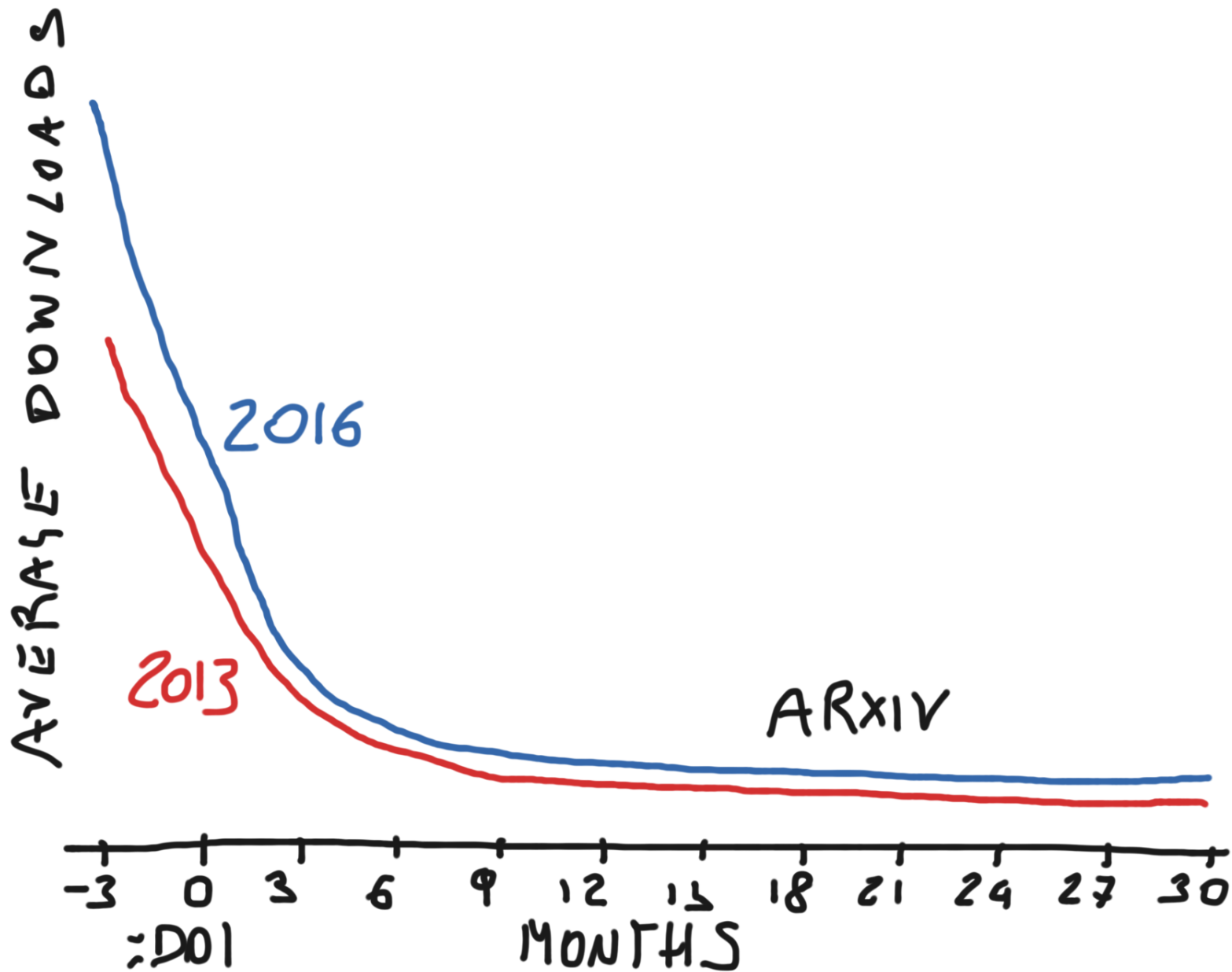






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	Physics Letters B	
 Hindawi	Advances in High Energy Physics	315,000 \$
 	Chinese Physics C	150,000 £
	Acta Physica Polonica B	52,500 €
 	Prog. of Th. & Exp. Physics	320,000 £
  	European Physics Journal C	7,500,000 €
	Journal of High Energy Physics	

Total contract values (+5% w.r.t. '14-'16) ~14,700,000 €  
 Total number of articles (+15% w.r.t. '14-'16) ~15,400

SCOAP<sup>3</sup> 6-years '14-'19: 28.6M€, 28.8k articles  
 Average investment per article <1,000 €

HEP journals: 100% supported by SCOAP<sup>3</sup>: NPB, PLB, EPJC, JHEP  
 Broadband journals: only HEP articles are supported: AHEP, CPC, APPB, PTEP

# SCOAP3 impact

the first 3 years: 2014-2016

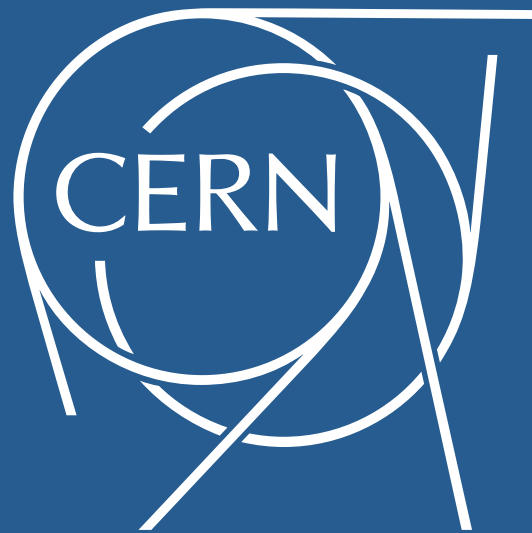
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The SCOAP<sup>3</sup> Partners and Governance for 10 years of miracles