Welcome to the SCOAP^3 Forum!

SCOAP^3 Forum

07 December 2017

SCOAP³ Forum 2017

07 December 2017

1. The SCOAP³ Business Model: a reminder
2. Four years of SCOAP3: a review of the results to date
3. SCOAP³ Impact: an analysis of article downloads
4. APS to join SCOAP³: an outlook to the years ahead
5. Questions & Answers

The SCOAP^3 Business Model

A reminder

SCOAP^3 Forum

07 December 2017

A global consortium to
convert Particle Physics articles
in high-quality journals
to Open Access,
at no burden for authors,
mostly re-using existing funds.

SCOAP³ Model

Researcher

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

Articles

Publishers

Reduction on Subscriptions

Libraries

Contracts

Membership fees

Open Access

CERN

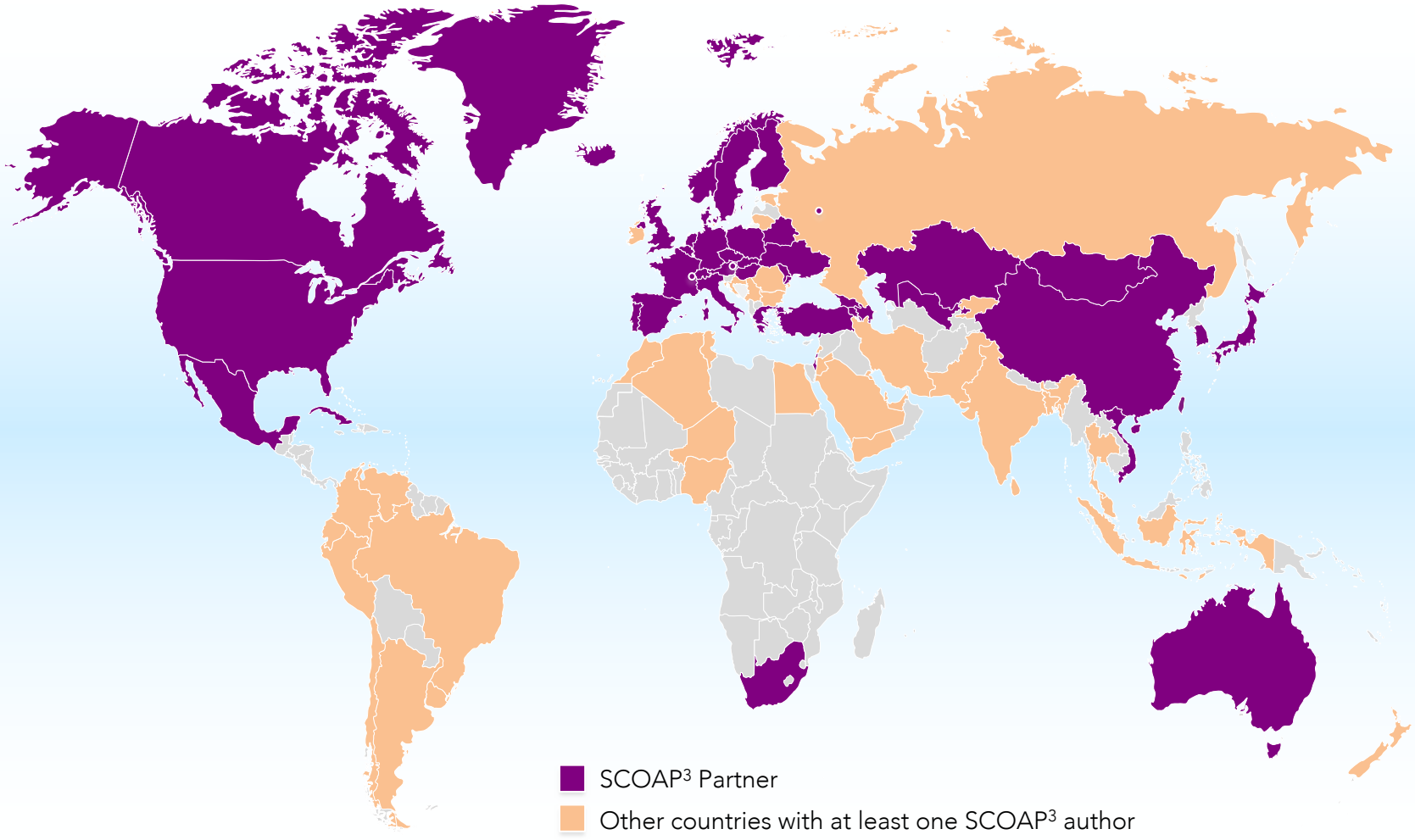
for the benefit of SCOAP³

Support

Public

Funding Agencies

20’000 authors from over 100 countries published more than 17,500 articles Open Access since Jan 2014



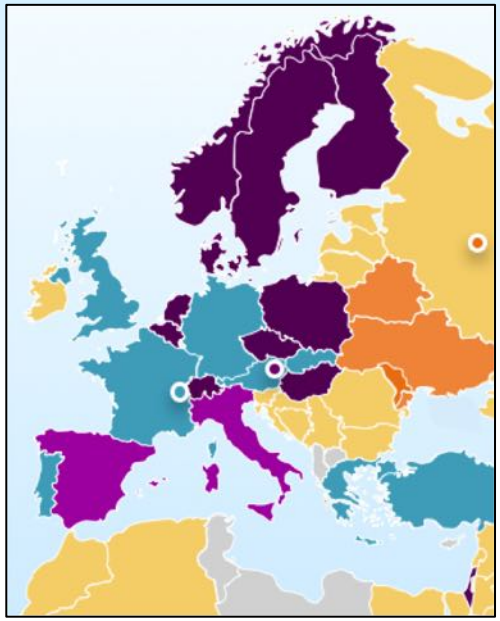
Four years of SCOAP^3

A review of the results to date

SCOAP^3 Forum

07 December 2017

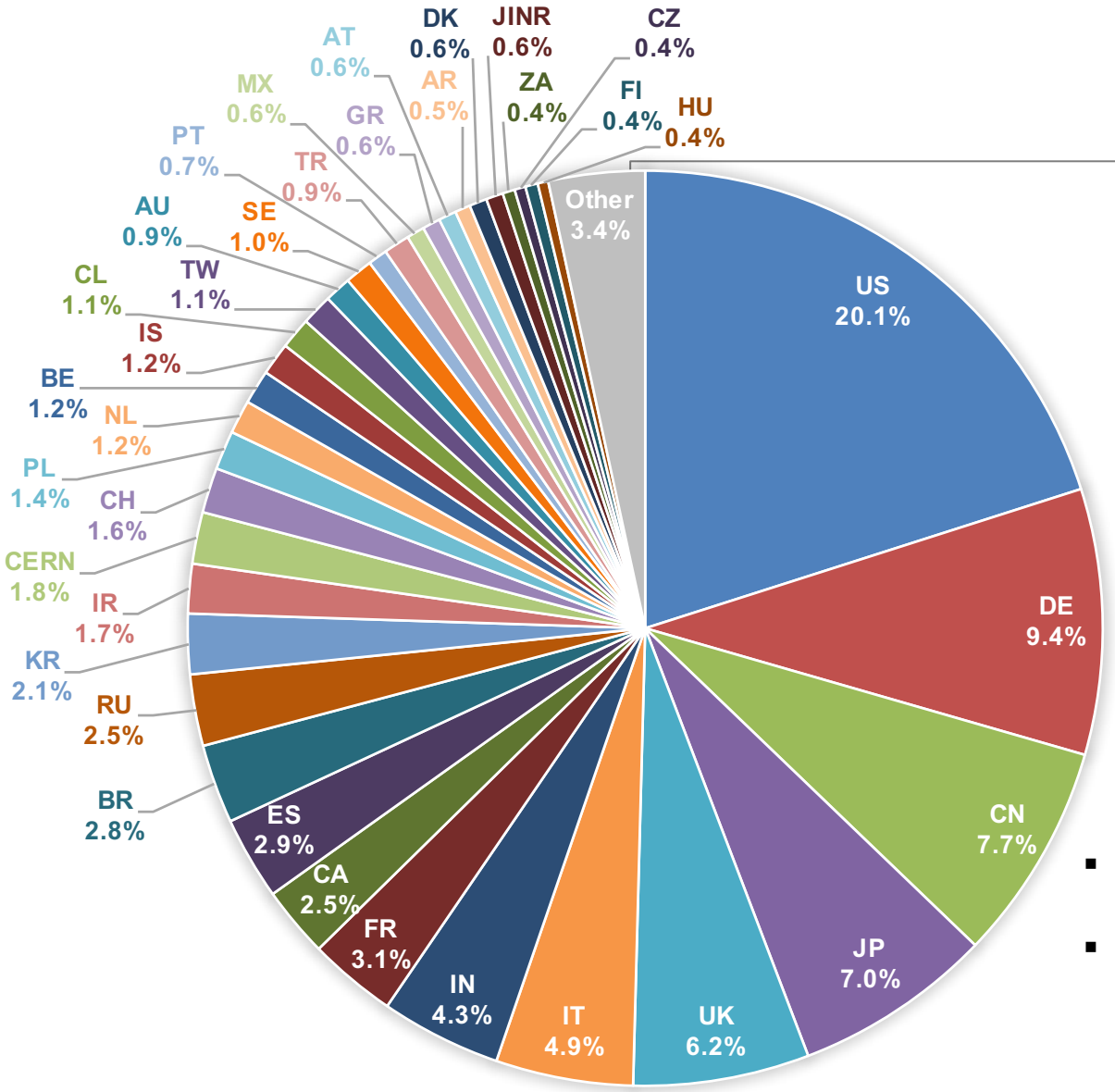
3,000+ libraries through 52 partners in 43 countries



- Participation in SCOAP³ driven by libraries with one national contact point (BE, CA, CH, CZ, DL, FI, HK, HU, IL, IS, JP, NL, NO, PL, SE, ZA, CERN, IAEA)
- Participation in SCOAP³ driven by libraries through several consortia and institutes (AU, ES, IT, US)
- Participation in SCOAP³ via intergovernmental organization JINR (AM, AZ, BY, CU, KP, GE, KZ, MD, MN, UA, UZ, VN)
- Participation orchestrated by funding agencies together with libraries (AT, CN, DE, FR, GR, KR, MX, PT, SK, TR, TW, UK)
- Other countries with at least one SCOAP³ author
- Seat of intergovernmental organization (CERN, IAEA, JINR)

Country membership fees scale with HEP publications

Share of 2014-2015 authorship of SCOAP[3] and APS HEP articles

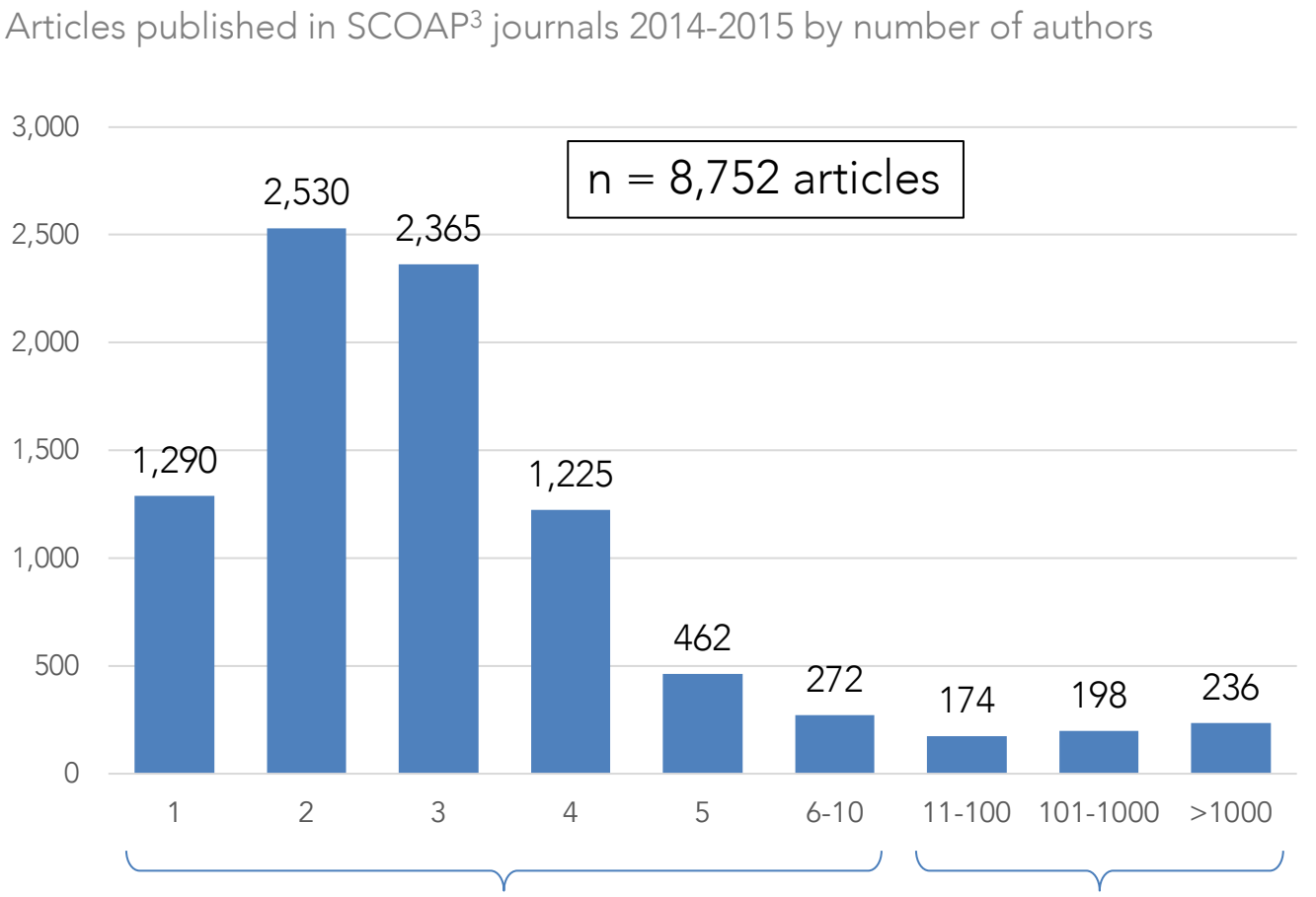


Other (>0.1% HEP publications):

Pakistan	0.3%
Egypt	0.3%
Ukraine	0.2%
Romania	0.2%
Norway	0.2%
Croatia	0.2%
Thailand	0.2%
Slovenia	0.2%
Colombia	0.1%
Estonia	0.1%
Ireland	0.1%
Armenia	0.1%
Serbia	0.1%
Singapore	0.1%
Kazakhstan	0.1%
Vietnam	0.1%
Malaysia	0.1%

- Some large potential contributors not yet participating (IN, RU, BR)
- CERN initially covers fees of countries not yet participating.

93% of SCOAP³ articles have 1-10 authors



SCOAP³ has supported 17,500 articles since 2014

Publisher	Journal		Articles 2014 – 2016	Articles 2017 *(estimate)*
ELSEVIER	Nuclear Physics B	*Flip*	1,008	295
ELSEVIER	Physics Letters B	*Flip*	2,654	935
Hindawi	Advances in High Energy Physics	*OA*	512	140
IOP Publishing / DPG	Chinese Physics C	*% Flip*	91	65
IOP Publishing / DPG	Journal of Cosmol. & Astroparticle Phys.	*% Flip*	654	-
IOP Publishing / DPG	New Journal of Physics	*OA*	25	-
Jagiellonian University in Kraków	Acta Physica Polonica B	*% Flip*	56	15
Oxford University Press / JPS	Progress of Theoretical & Experim. Phys.	*OA*	255	85
Springer	European Physical Journal C	*Flip*	1,830	860
Springer	Journal of High Energy Physics	*Flip*	6,283	1960

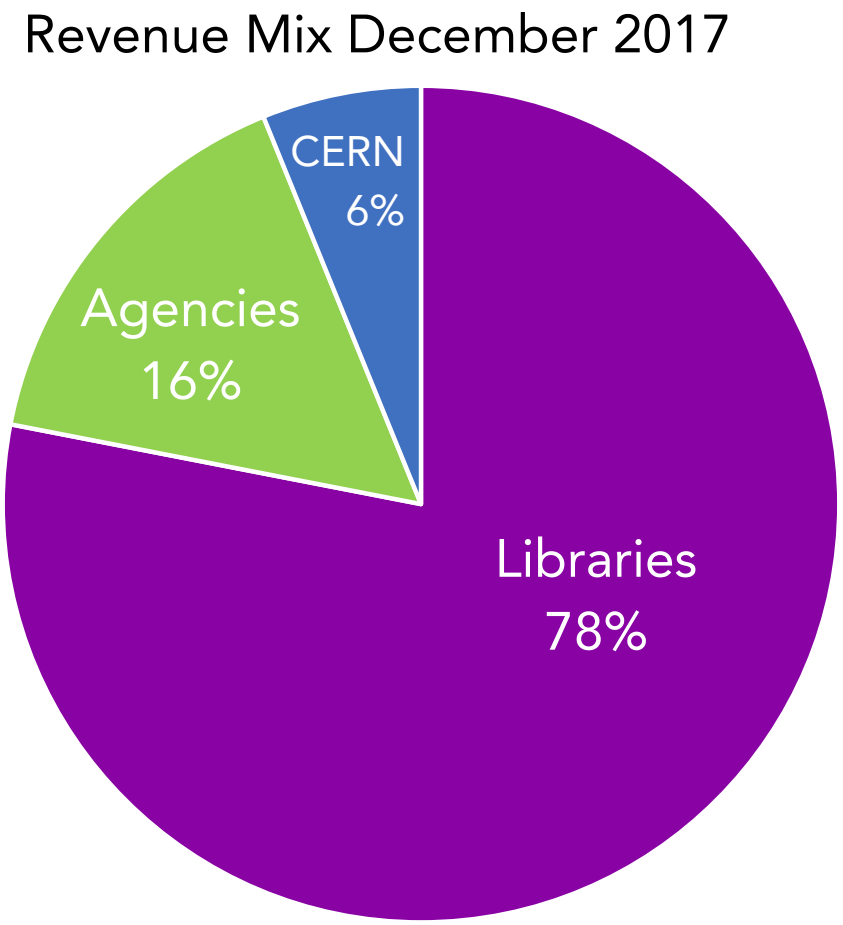
7/10 journals and 70% of articles published or co-published by learned societies

Articles funded during Phase 1: 13,368 4,355

Total cost of SCOAP³ Phase 1 (2014-2016): 13.8 M€

Average SCOAP³ investment per article 1'032 €

Sustainable revenue mix established



Reminder: for some countries, library re-directions fall short of the national fee (high-research output) and some funding agencies provide additional support.

SCOAP^3 continues to deliver cost efficiency

		2014-2016		2017-2019*	
Publisher	Journal	Articles	Investment	Articles	Investment
ELSEVIER	Nuclear Physics B	1,008	6,620,000$	4,200	6,950,000$
ELSEVIER	Physics Letters B	2,654			
Hindawi	Advances in High Energy Physics	512	135,000$	650	315,000$
IOP Publishing	Chinese Physics C	91	780,000£	170	150,000£
IOP Publishing	Journal of Cosmol. & Astrop. Ph.	654		-	
DPG	New Journal of Physics	25		-	
Jagiellonian University in Kraków	Acta Physica Polonica B	56	28,000$	120	52,500€
Oxford University Press / JPS	Progress of Theoret. & Exper. Ph.	255	205,000£	460	320,000£
Springer	European Physical Journal C	1,830	6,765,000€	9,800	7,500,000€
Springer	Journal of High Energy Physics	6,283			
	Total	13,368	13.8 M€	15,400	14.7 M€
	Average per article	1'032 €		955 €	

* Estimated number of articles and maximum contract values for 2017-2019v

SCOAP^3 Impact

An analysis of article downloads

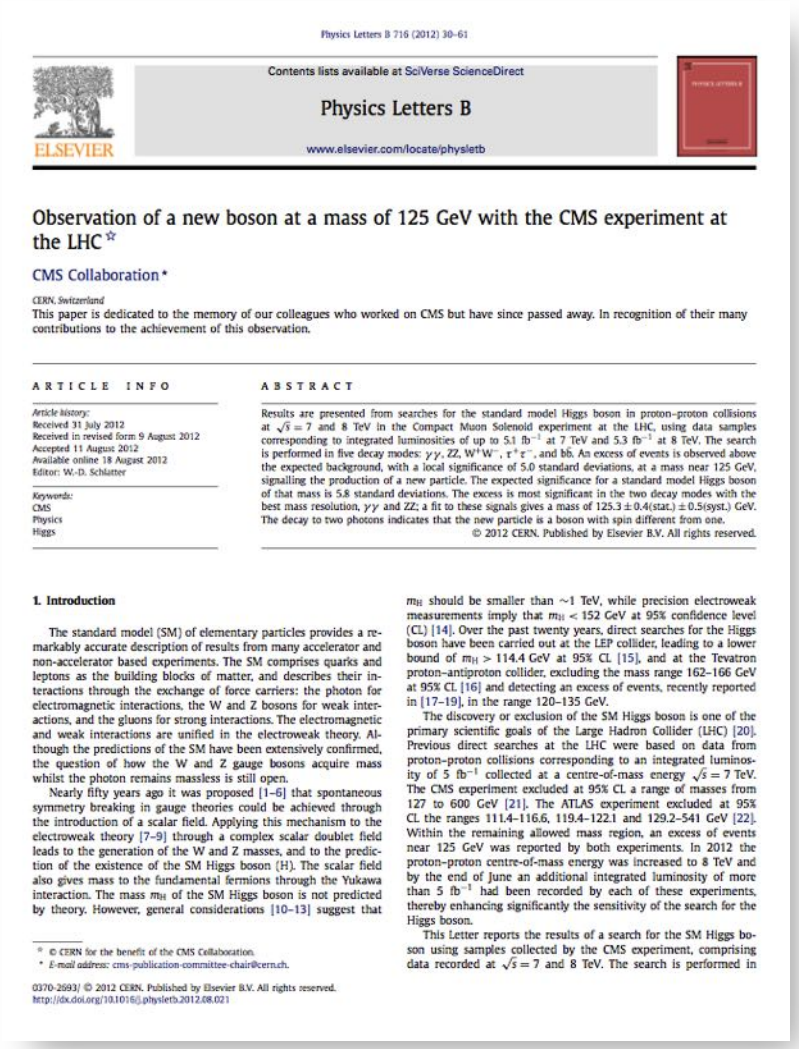
(Thanks to partners at arXiv, Elsevier, SpringerNature and Jacopo Notarstefano, CERN)

SCOAP^3 Forum

07 December 2017

97% of yearly HEP articles available as preprint on arXiv

(Since 1992: in total 60% of all articles ever published in all leading journals)



Physics Letters B 716 (2012) 30–61

Contents lists available at SciVerse ScienceDirect

Physics Letters B

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Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC ☆

CMS Collaboration *

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.

ARTICLE INFO

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ABSTRACT

Results are presented from searches for the standard model Higgs boson in proton–proton collisions at $\sqrt{s} = 7$ and 8 TeV in the Compact Muon Solenoid experiment at the LHC, using data samples corresponding to integrated luminosities of up to 5.1 fb^{-1} at 7 TeV and 5.3 fb^{-1} at 8 TeV. The search is performed in five decay modes: $\gamma\gamma$, ZZ, W^+W^-, $\tau^+\tau^-$, and $b\bar{b}$. An excess of events is observed above the expected background, with a local significance of 5.0 standard deviations, at a mass near 125 GeV, signalling the production of a new particle. The expected significance for a standard model Higgs boson of that mass is 5.8 standard deviations. The excess is most significant in the two decay modes with the best mass resolution, $\gamma\gamma$ and ZZ; a fit to these signals gives a mass of $125.3 \pm 0.4(\text{stat.}) \pm 0.5(\text{syst.})$ GeV. The decay to two photons indicates that the new particle is a boson with spin different from one.

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1. Introduction

The standard model (SM) of elementary particles provides a remarkably accurate description of results from many accelerator and non-accelerator based experiments. The SM comprises quarks and leptons as the building blocks of matter, and describes their interactions through the exchange of force carriers: the photon for electromagnetic interactions, the W and Z bosons for weak interactions, and the gluons for strong interactions. The electromagnetic and weak interactions are unified in the electroweak theory. Although the predictions of the SM have been extensively confirmed, the question of how the W and Z gauge bosons acquire mass whilst the photon remains massless is still open.

Nearly fifty years ago it was proposed [1–6] that spontaneous symmetry breaking in gauge theories could be achieved through the introduction of a scalar field. Applying this mechanism to the electroweak theory [7–9] through a complex scalar doublet field leads to the generation of the W and Z masses, and to the prediction of the existence of the SM Higgs boson (H). The scalar field also gives mass to the fundamental fermions through the Yukawa interaction. The mass m_H of the SM Higgs boson is not predicted by theory. However, general considerations [10–13] suggest that m_H should be smaller than ~1 TeV, while precision electroweak measurements imply that $m_H < 152$ 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 $m_H > 114.4$ 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 fb^{-1} collected at a centre-of-mass energy $\sqrt{s} = 7$ 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 fb^{-1} had been recorded by each of these experiments, thereby enhancing significantly the sensitivity of the search for the Higgs boson.

This Letter reports the results of a search for the SM Higgs boson using samples collected by the CMS experiment, comprising data recorded at $\sqrt{s} = 7$ and 8 TeV. The search is performed in

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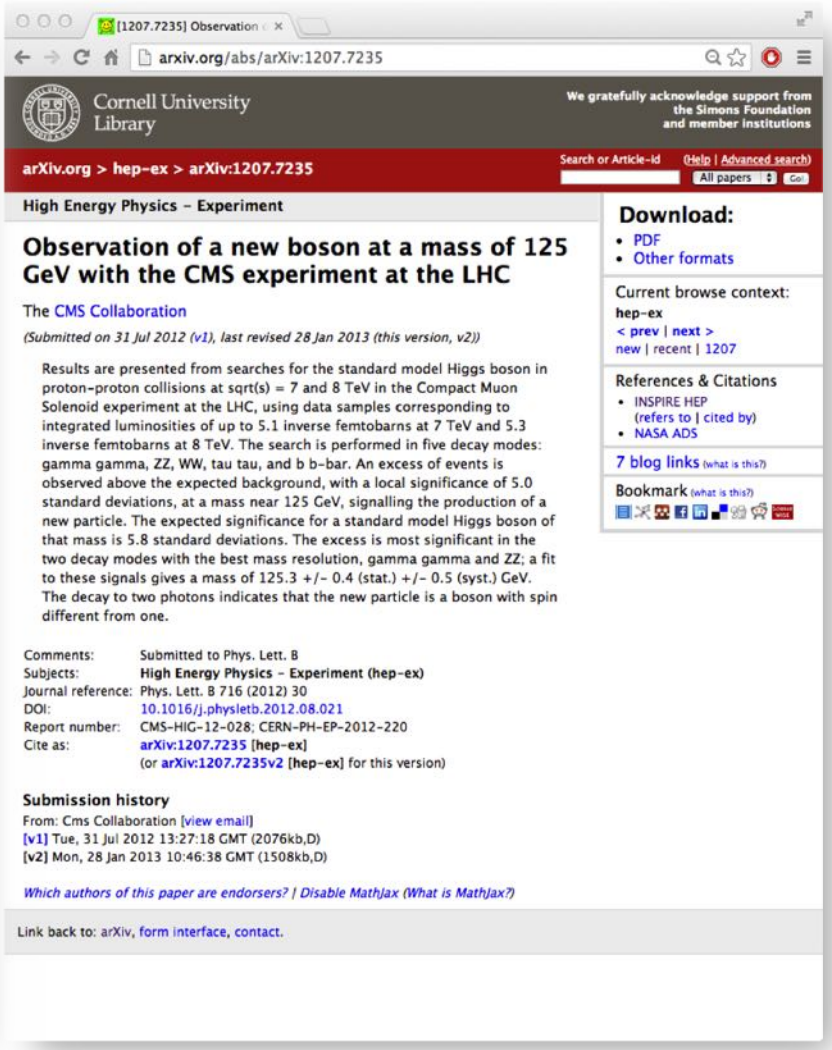
http://dx.doi.org/10.1016/j.physletb.2012.08.021



[1207.7235] Observation

arxiv.org/abs/arXiv:1207.7235

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High Energy Physics – Experiment

Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC

The CMS Collaboration

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

Results are presented from searches for the standard model Higgs boson in proton–proton collisions at sqrt(s) = 7 and 8 TeV in the Compact Muon Solenoid experiment at the LHC, using data samples corresponding to integrated luminosities of up to 5.1 inverse femtobarns at 7 TeV and 5.3 inverse femtobarns at 8 TeV. The search is performed in five decay modes: gamma gamma, ZZ, WW, tau tau, and b b-bar. An excess of events is observed above the expected background, with a local significance of 5.0 standard deviations, at a mass near 125 GeV, signalling the production of a new particle. The expected significance for a standard model Higgs boson of that mass is 5.8 standard deviations. The excess is most significant in the two decay modes with the best mass resolution, gamma gamma and ZZ; a fit to these signals gives a mass of 125.3 +/- 0.4 (stat.) +/- 0.5 (syst.) GeV. The decay to two photons indicates that the new particle is a boson with spin different from one.

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]**
(or **arXiv:1207.7235v2 [hep-ex]** for this version)

Submission history
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[v2] Mon, 28 Jan 2013 10:46:38 GMT (1508kb,D)

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References & Citations
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Bookmark (what is this?)

What is the interplay of journals and preprints in High-Energy Physics after 25 years?

What is the interplay of Green (arXiv) Open Access and SCOAP^3 ?

Are SCOAP^3 Gold Open Access articles downloaded (more) ?

Compare article-level download for 4 key HEP journals with downloads of corresponding preprint on arXiv

Never done before

Thanks to arXiv, Elsevier, SpringerNature for sharing anonymized log files on daily article-level downloads

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ELSEVIER

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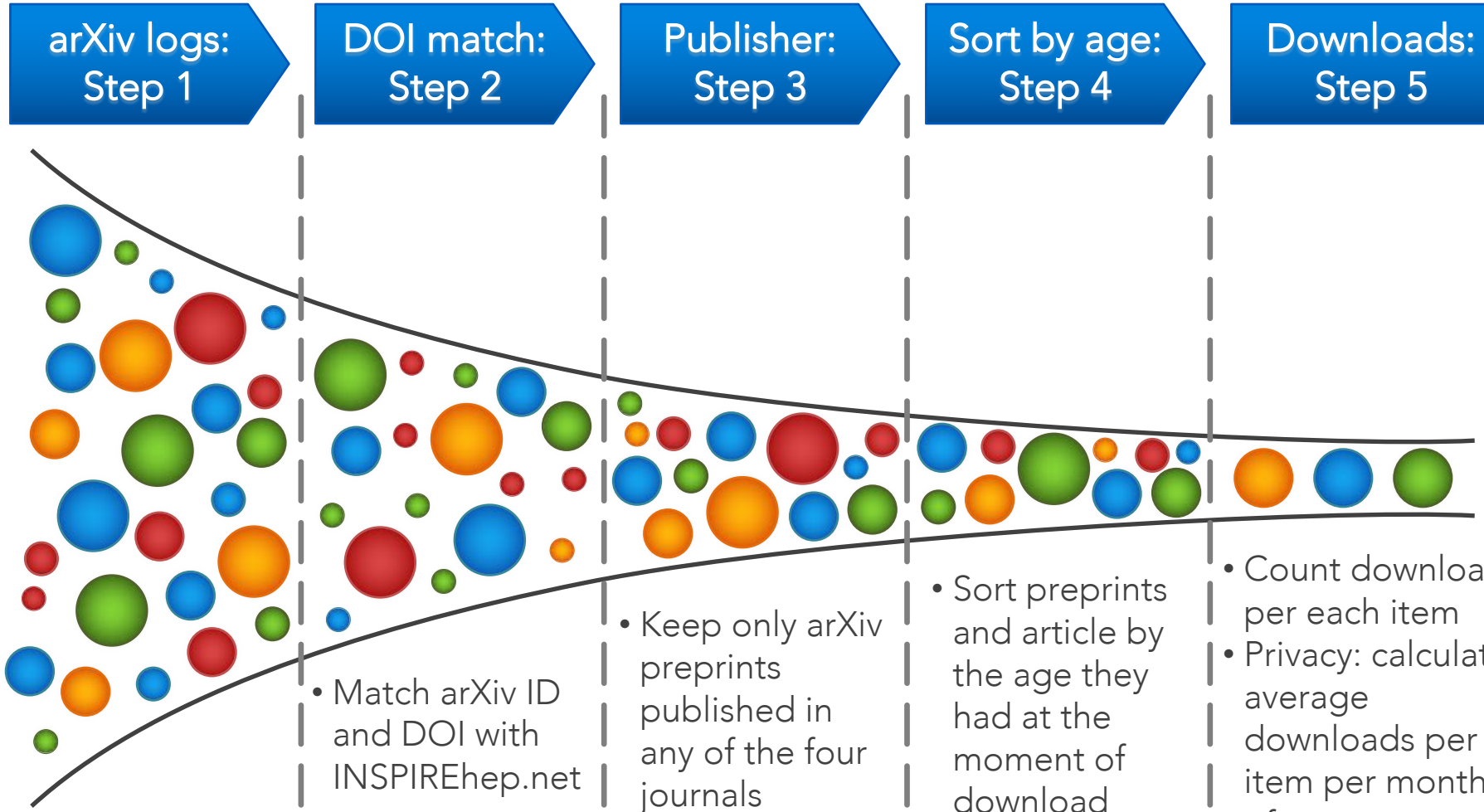
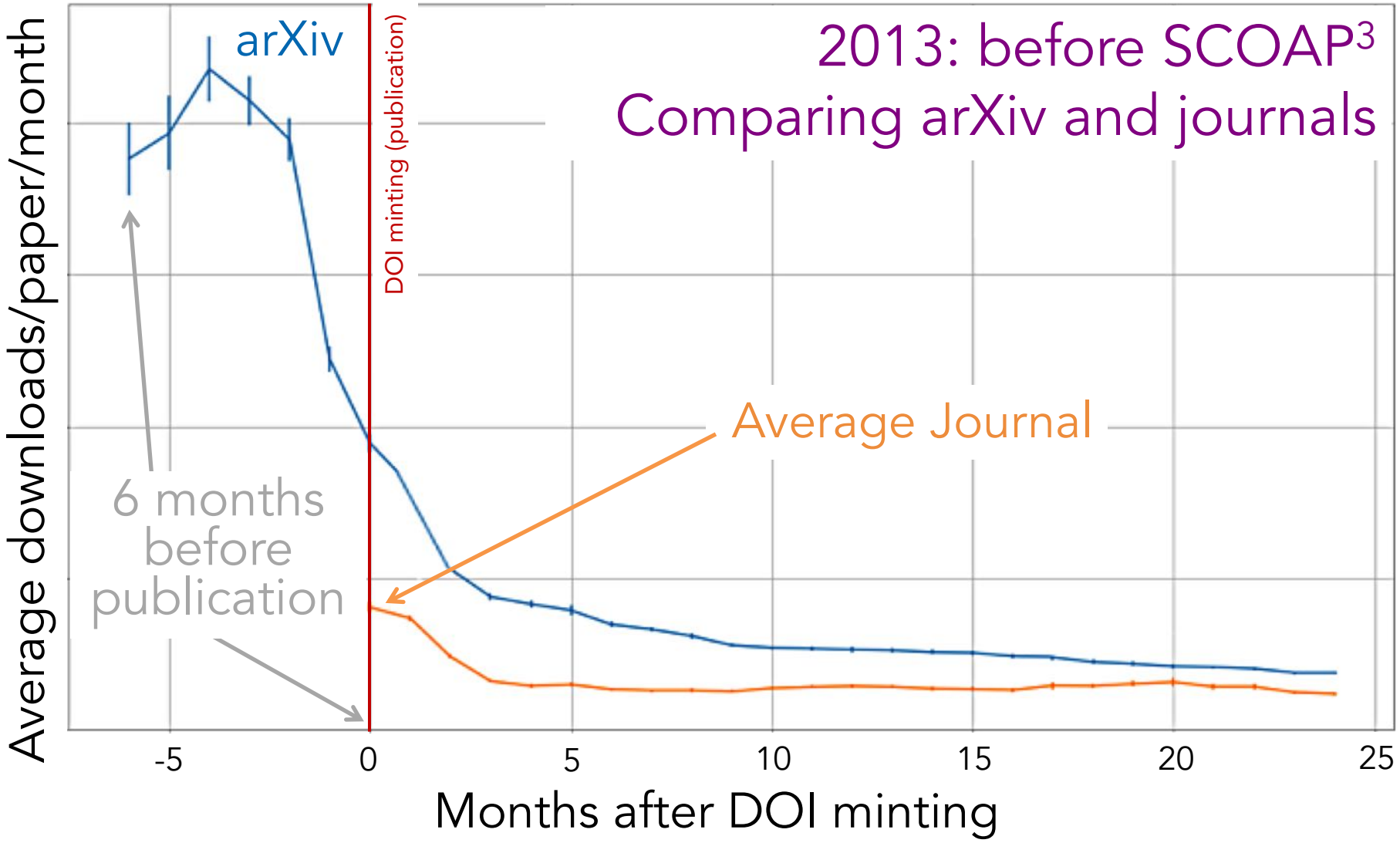
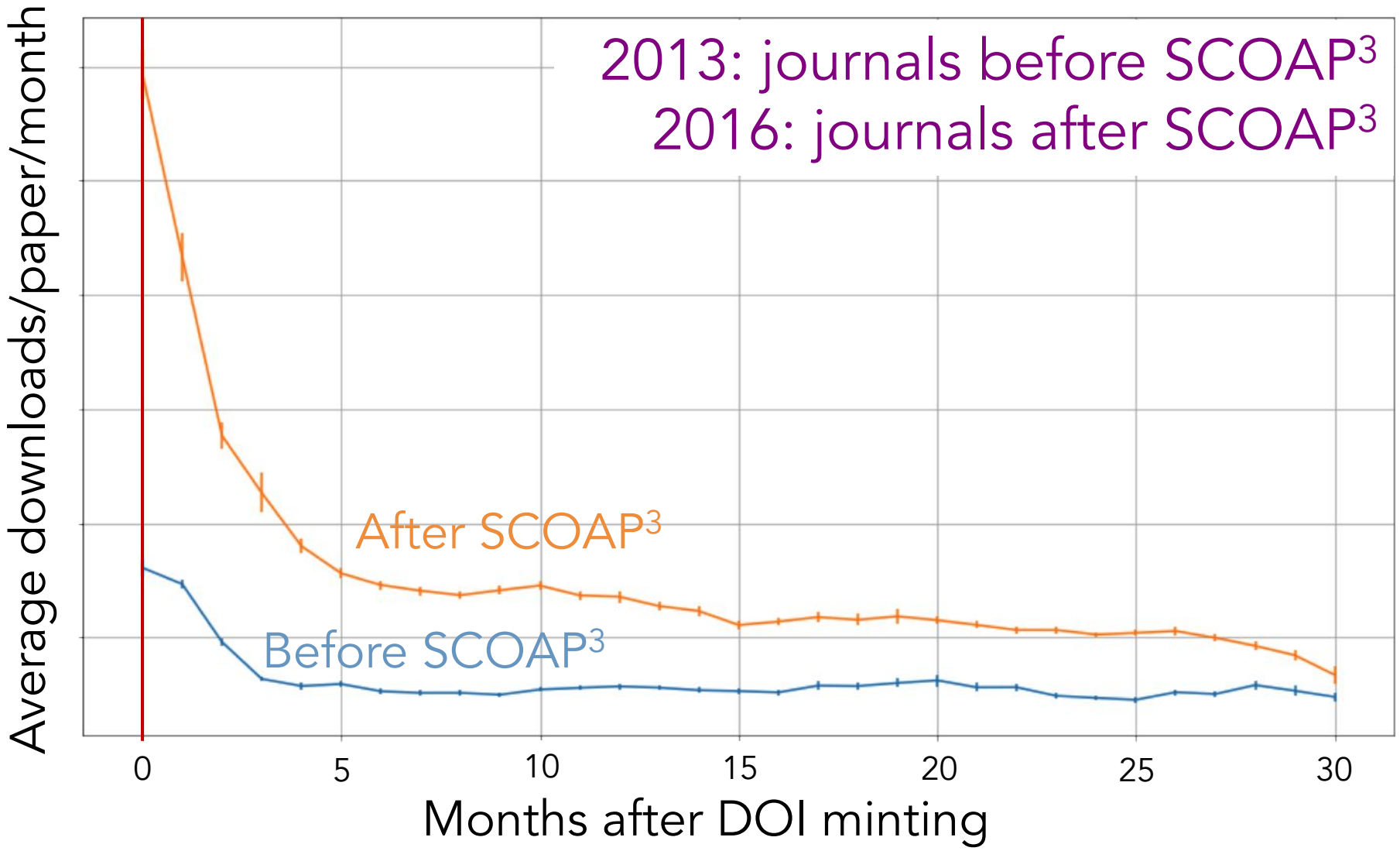


Do HEP researchers read preprints or journals?



Downloads 3Q13, 4Q13 on arXiv.org and publishers' platforms
~50k articles in Elsevier *Phys.Lett.B, Nucl.Phys.B* & *Springer Eur. Phys. J. C, JHEP*

What happens when journals join SCOAP^3 ?



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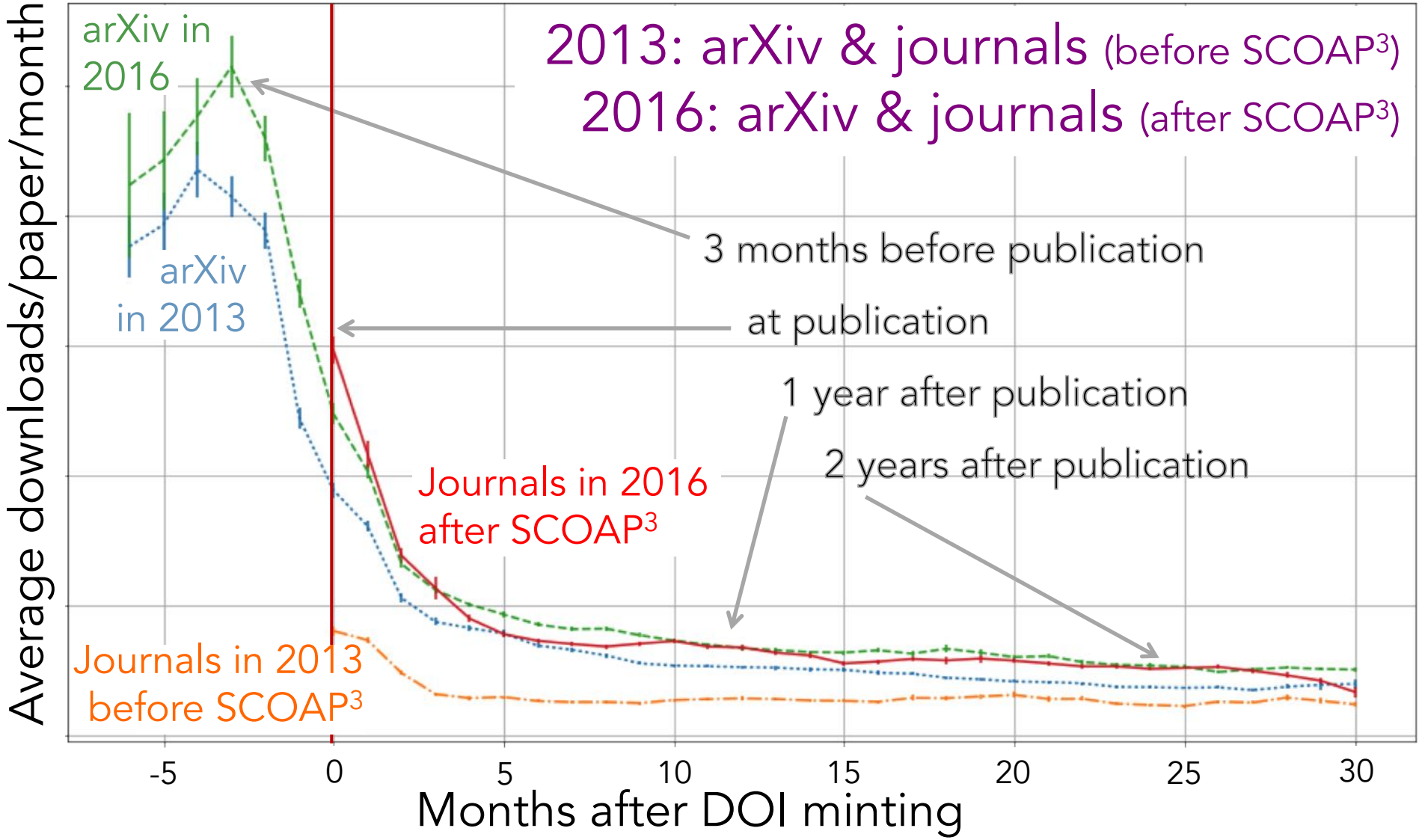
Elsevier: *Phys.Lett.B, Nucl.Phys.B;* Springer: *Eur. Phys. J. C, JHEP*

Downloads of preprints AND journals increase



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50k non-Open Access articles and 8k Open Access articles
Elsevier: *Phys.Lett.B, Nucl.Phys.B;* Springer: *Eur. Phys. J. C, JHEP*

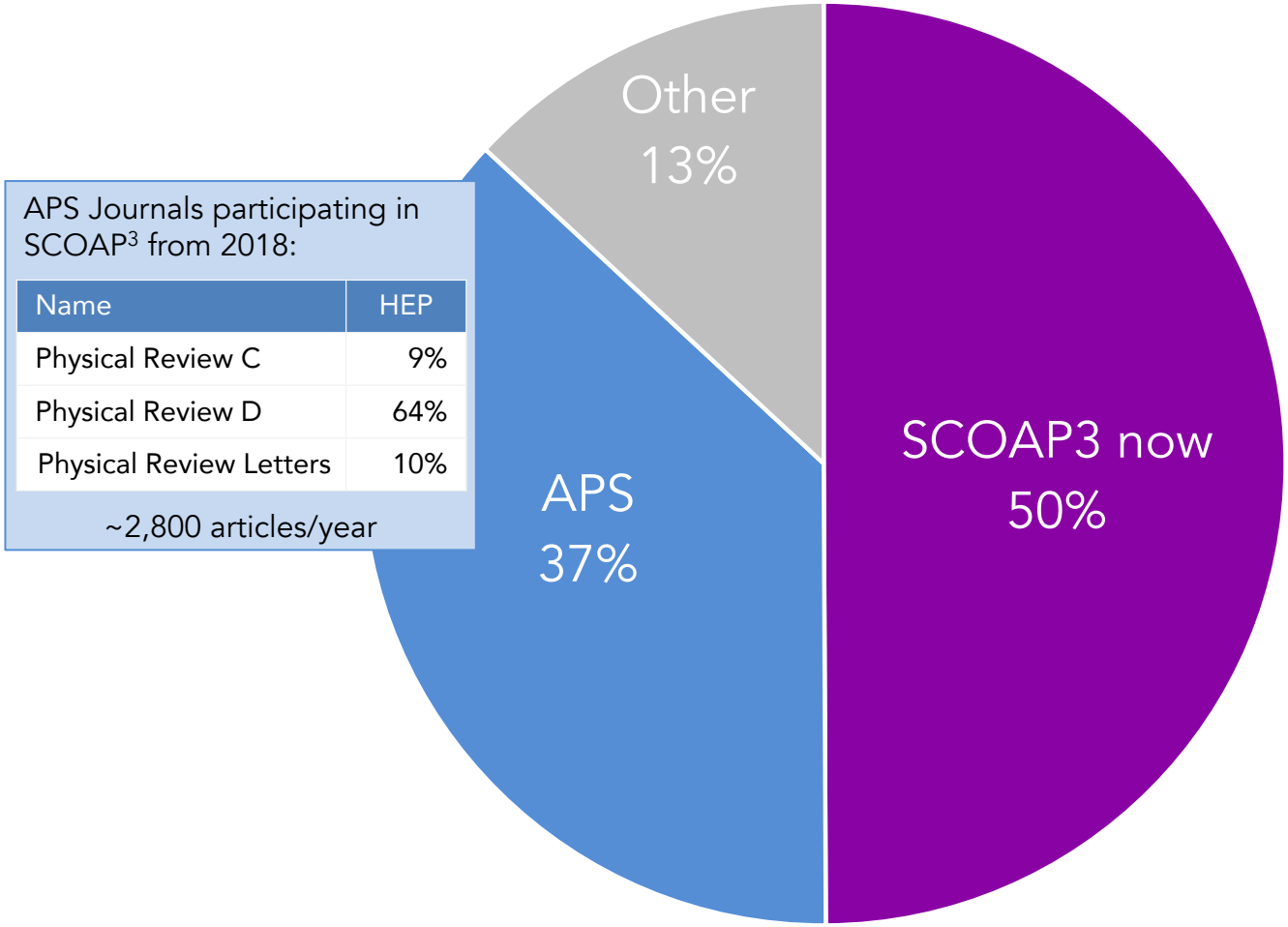
APS to join SCOAP^3

An outlook to the years ahead

SCOAP^3 Forum

07 December 2017

SCOAP^3 will cover 87% of HEP journal literature



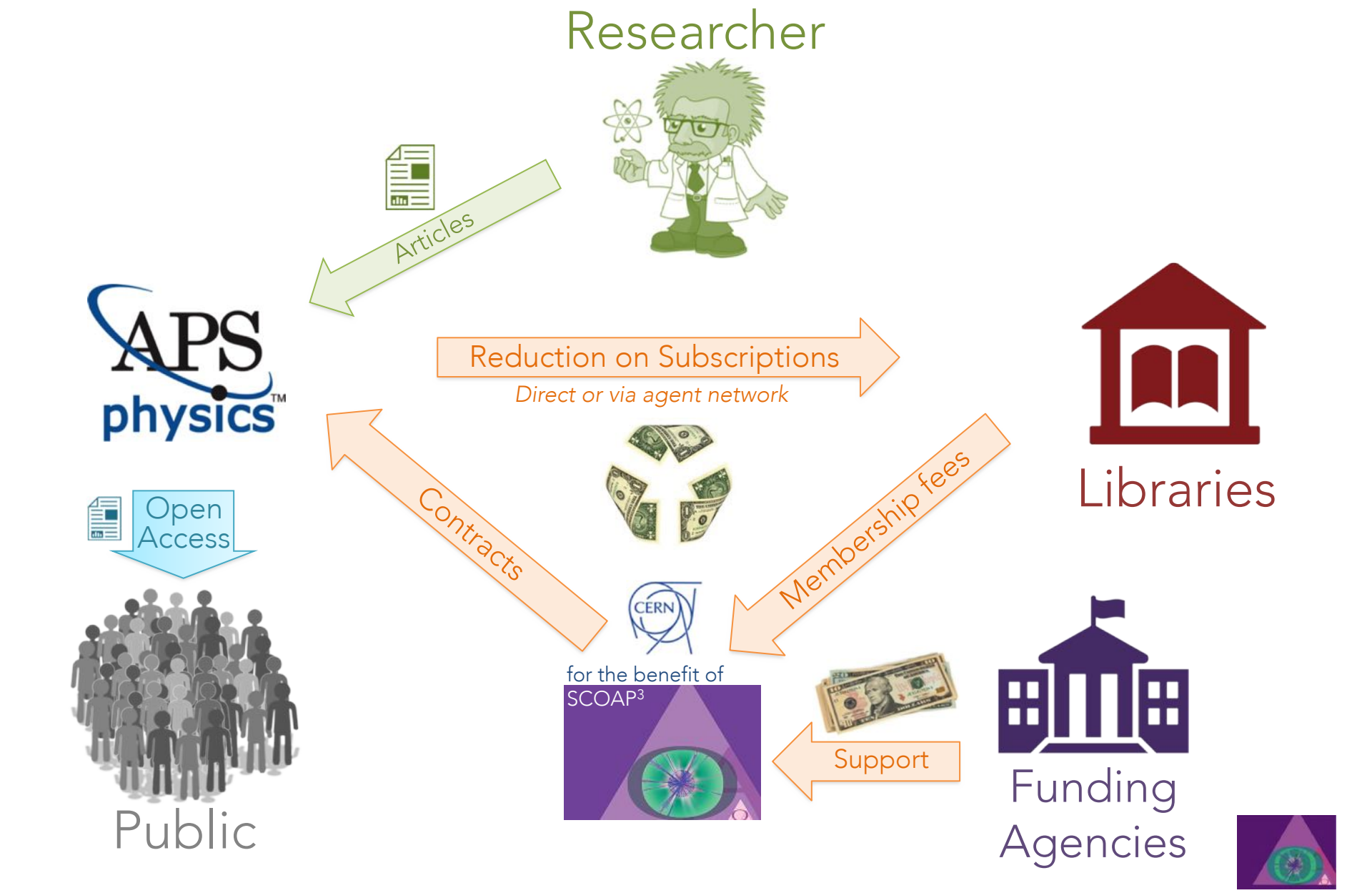
APS Journals participating in SCOAP^3 from 2018:

Name	HEP
Physical Review C	9%
Physical Review D	64%
Physical Review Letters	10%

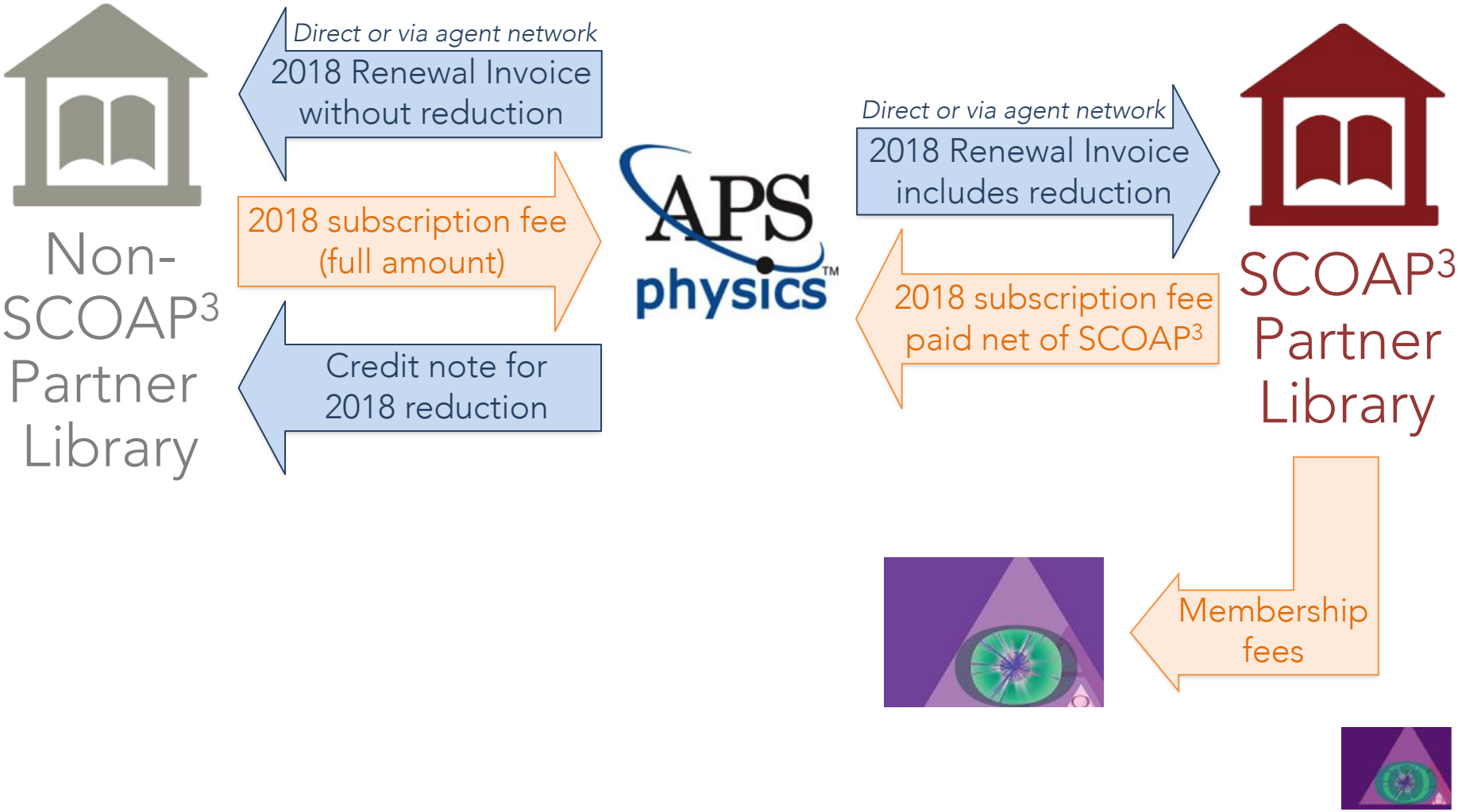
~2,800 articles/year

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.

SCOAP³ business model: reminder



2018 Reduction for all APS subscribers



2019 Reduction for all APS subscribers

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APS physics™

Direct or via agent network
2019 Renewal Invoice includes reduction

2019 subscription fee to be paid net

SCOAP³ Partner Library

Membership fees

Reduction on subscriptions APS 2018

APS list prices 2018

	APS-ALL	PR-ALL	PRC	PRD	PRL
Tier 1	$13,075	$11,540	$895	$3,575	$2,510
Tier 2	$18,290	$16,065	$1,265	$4,995	$3,490
Tier 3	$29,180	$25,180	$2,015	$7,885	$5,490
Tier 4	$38,120	$33,160	$2,585	$10,335	$7,120
Tier 5	$44,195	$38,155	$2,995	$11,925	$8,170

Reduction (HEP %)	15.25%	19%	9%	64%	10%

SCOAP[3] related reduction

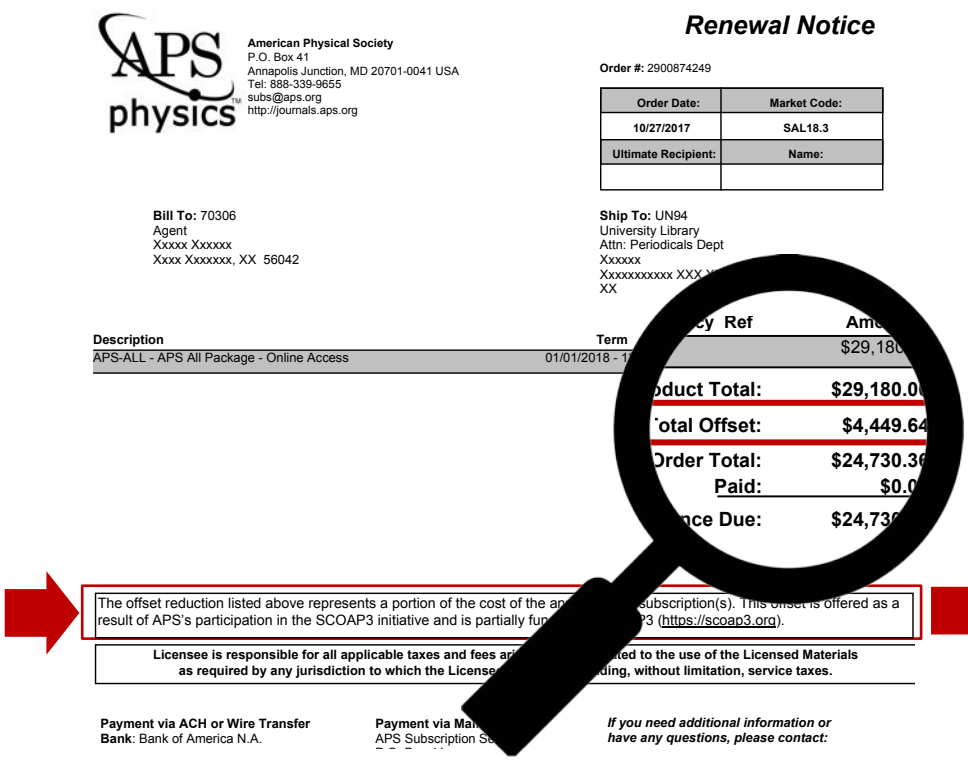
	APS-ALL	PR-ALL	PRC	PRD	PRL
Tier 1	$1,994	$2,193	$81	$2,288	$251
Tier 2	$2,789	$3,052	$114	$3,197	$349
Tier 3	$4,450	$4,784	$181	$5,046	$549
Tier 4	$5,813	$6,300	$233	$6,614	$712
Tier 5	$6,740	$7,249	$270	$7,632	$817

- No guesswork: transparent and clear reductions for each journal, package and subscriber tier
- Reduction % commensurate with HEP share of journal

What to expect on your APS invoice

SCOAP³ Partners

- See reduction directly on the 2018 renewal invoice
- Payable amount net of SCOAP³ reduction (15.25% for APS-ALL)



APS physics

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APS-ALL - APS All Package - Online Access	01/01/2018 - 1		$29,180

oduct Total: $29,180.0
otal Offset: $4,449.64
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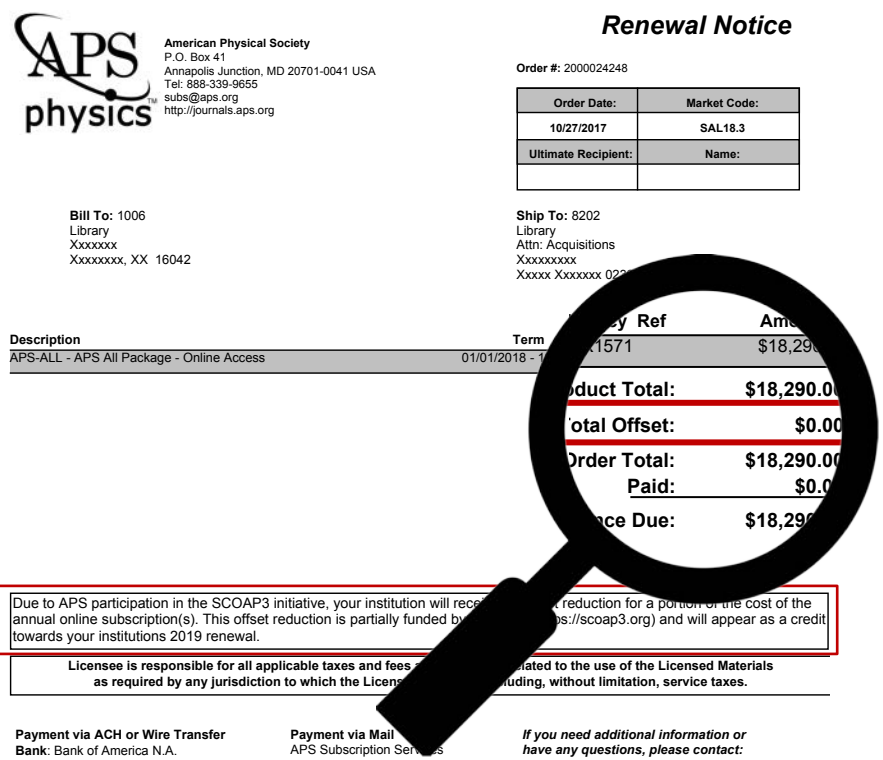
- SCOAP³ reduction as credit note
- Credit note can be used against 2019 renewal invoice



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oduct Total: $18,290.0
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Order Total: $18,290.00
Paid: $0.0
nce Due: $18,29

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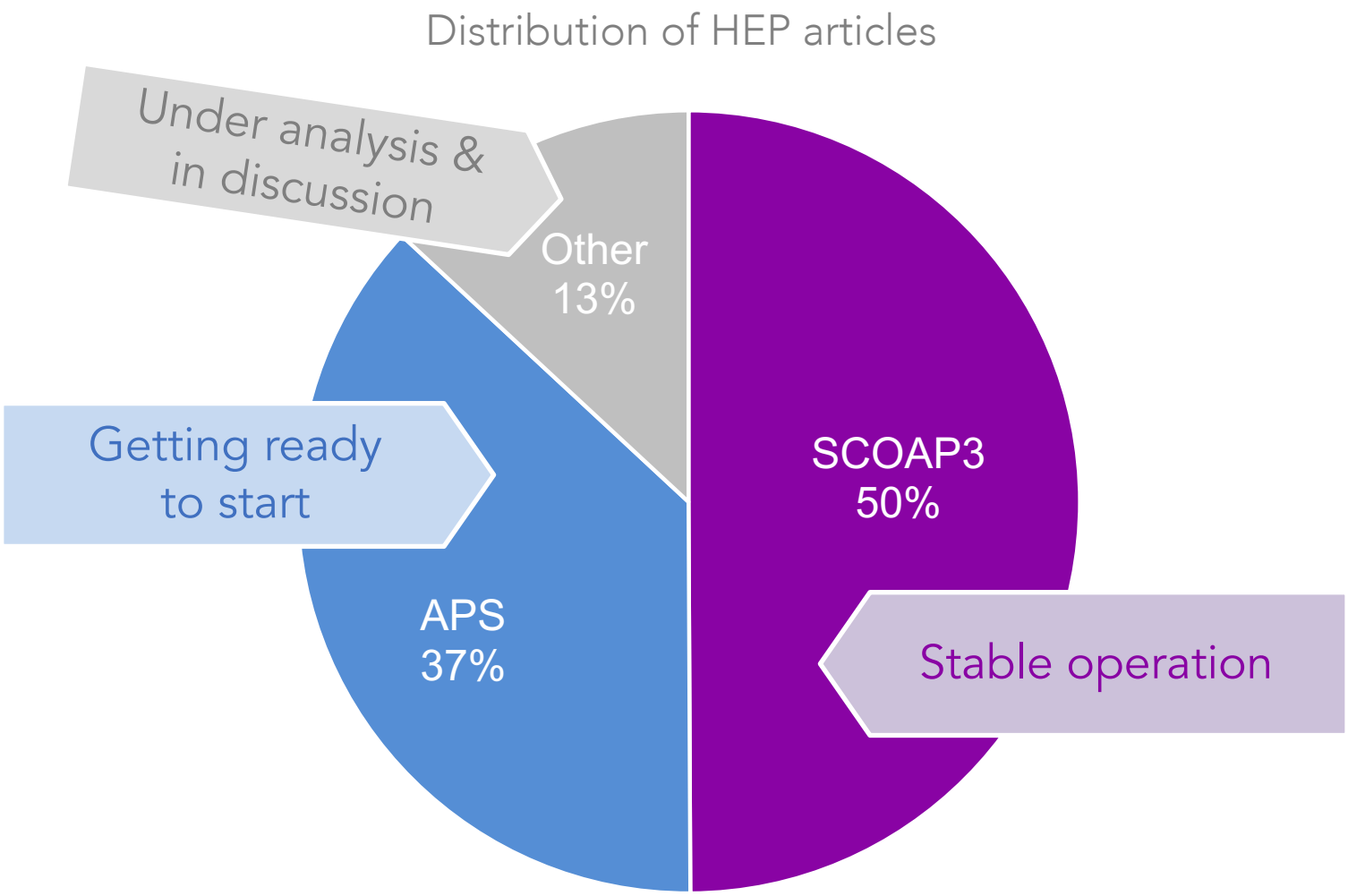
SCOAP^3: Next steps



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Questions & Answers

Thank you for attending!

You can find further information and a recording of this webinar on our homepage: https://scoap3.org