Evolution of Open Access in High-Energy Physics

from green to gold…
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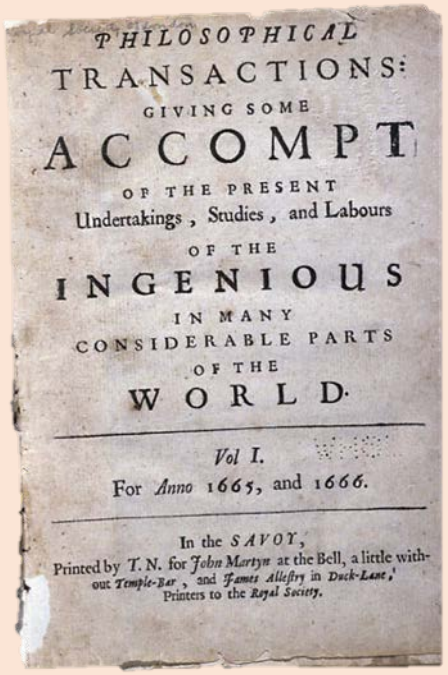
Ankara, 19th October 2015

Alexander Kohls, CERN

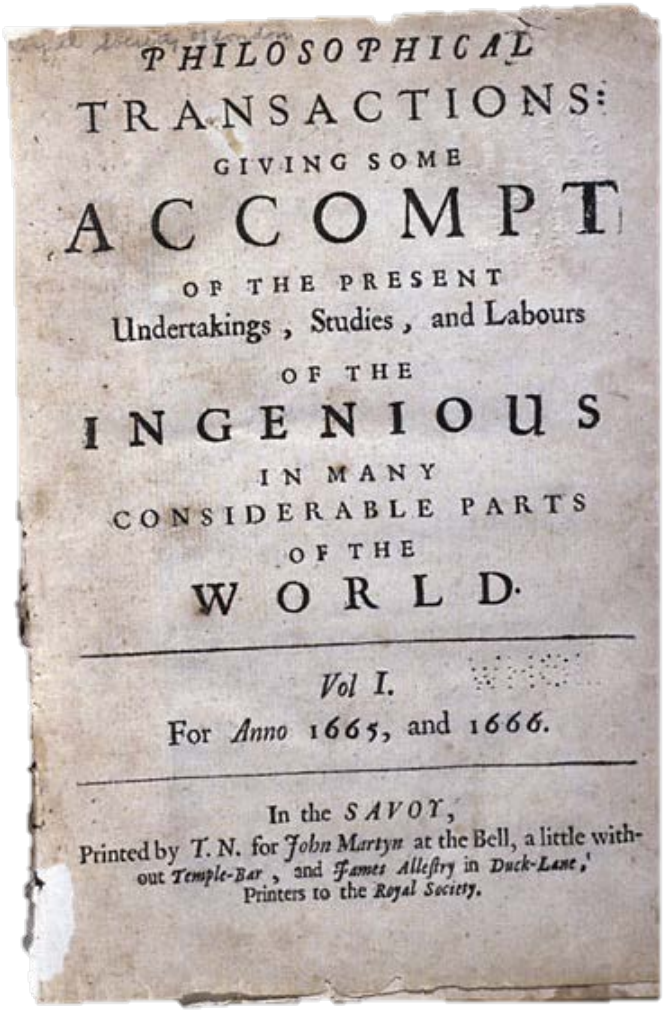
Mid 17th century

New York has 1,000 inhabitants

Louis XIV. is King of France



First scientific Journal (1665)



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TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
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Vol I.
For Anno 1665, and 1666.

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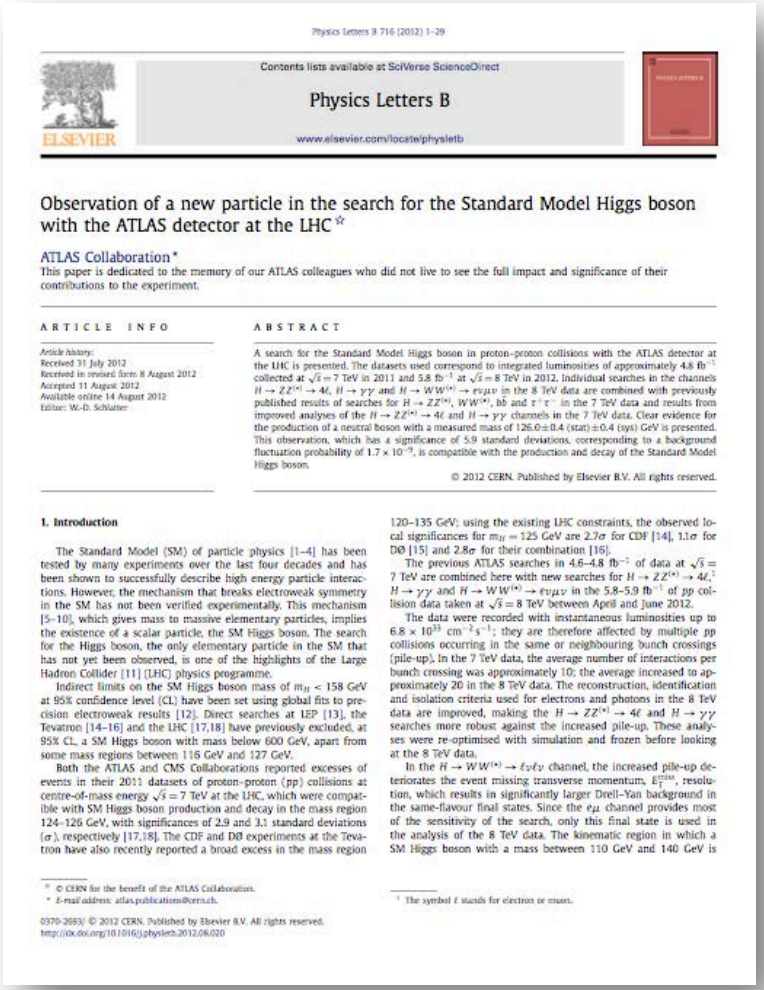

Physics Letters B 716 (2012) 1–29

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Physics Letters B

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Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC ☆

ATLAS Collaboration *

This paper is dedicated to the memory of our ATLAS colleagues who did not live to see the full impact and significance of their contributions to the experiment.

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ABSTRACT

A search for the Standard Model Higgs boson in proton–proton collisions with the ATLAS detector at the LHC is presented. The datasets used correspond to integrated luminosities of approximately 4.8 fb^{-1} collected at $\sqrt{s} = 7$ TeV in 2011 and 5.8 fb^{-1} at $\sqrt{s} = 8$ TeV in 2012. Individual searches in the channels $H \to ZZ^{(*)} \to 4\ell$, $H \to \gamma\gamma$ and $H \to WW^{(*)} \to e\nu\mu\nu$ in the 8 TeV data are combined with previously published results of searches for $H \to ZZ^{(*)}$, $WW^{(*)}$, $b\bar{b}$ and $\tau^+\tau^-$ in the 7 TeV data and results from improved analyses of the $H \to ZZ^{(*)} \to 4\ell$ and $H \to \gamma\gamma$ channels in the 7 TeV data. Clear evidence for the production of a neutral boson with a measured mass of 126.0±0.4 (stat)±0.4 (sys) GeV is presented. This observation, which has a significance of 5.9 standard deviations, corresponding to a background fluctuation probability of 1.7×10^{-9}, is compatible with the production and decay of the Standard Model Higgs boson.

1. Introduction

The Standard Model (SM) of particle physics [1–4] has been tested by many experiments over the last four decades and has been shown to successfully describe high energy particle interactions. However, the mechanism that breaks electroweak symmetry in the SM has not been verified experimentally. This mechanism [5–10], which gives mass to massive elementary particles, implies the existence of a scalar particle, the SM Higgs boson. The search for the Higgs boson, the only elementary particle in the SM that has not yet been observed, is one of the highlights of the Large Hadron Collider [11] (LHC) physics programme.

Indirect limits on the SM Higgs boson mass of $m_H < 158$ GeV at 95% confidence level (CL) have been set using global fits to precision electroweak results [12]. Direct searches at LEP [13], the Tevatron [14–16] and the LHC [17,18] have previously excluded, at 95% CL, a SM Higgs boson with mass below 600 GeV, apart from some mass regions between 116 GeV and 127 GeV.

Both the ATLAS and CMS Collaborations reported excesses of events in their 2011 datasets of proton–proton (pp) collisions at centre-of-mass energy $\sqrt{s} = 7$ TeV at the LHC, which were compatible with SM Higgs boson production and decay in the mass region 124–126 GeV, with significances of 2.9 and 3.1 standard deviations (σ), respectively [17,18]. The CDF and DØ experiments at the Tevatron have also recently reported a broad excess in the mass region 120–135 GeV; using the existing LHC constraints, the observed local significances for $m_H = 125$ GeV are 2.7σ for CDF [14], 1.1σ for DØ [15] and 2.8σ for their combination [16].

The previous ATLAS searches in 4.6–4.8 fb^{-1} of data at $\sqrt{s} = 7$ TeV are combined here with new searches for $H \to ZZ^{(*)} \to 4\ell$,[1] $H \to \gamma\gamma$ and $H \to WW^{(*)} \to e\nu\mu\nu$ in the 5.8–5.9 fb^{-1} of pp collision data taken at $\sqrt{s} = 8$ TeV between April and June 2012.

The data were recorded with instantaneous luminosities up to 6.8×10^{33} cm^{-2} s^{-1}; they are therefore affected by multiple pp collisions occurring in the same or neighbouring bunch crossings (pile-up). In the 7 TeV data, the average number of interactions per bunch crossing was approximately 10; the average increased to approximately 20 in the 8 TeV data. The reconstruction, identification and isolation criteria used for electrons and photons in the 8 TeV data are improved, making the $H \to ZZ^{(*)} \to 4\ell$ and $H \to \gamma\gamma$ searches more robust against the increased pile-up. These analyses were re-optimised with simulation and frozen before looking at the 8 TeV data.

In the $H \to WW^{(*)} \to \ell\nu\ell\nu$ channel, the increased pile-up deteriorates the event missing transverse momentum, $E_{\mathrm{T}}^{\mathrm{miss}}$, resolution, which results in significantly larger Drell–Yan background in the same-flavour final states. Since the $e\mu$ channel provides most of the sensitivity of the search, only this final state is used in the analysis of the 8 TeV data. The kinematic region in which a SM Higgs boson with a mass between 110 GeV and 140 GeV is

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* E-mail address: atlas.publications@cern.ch.

[1] The symbol ℓ stands for electron or muon.

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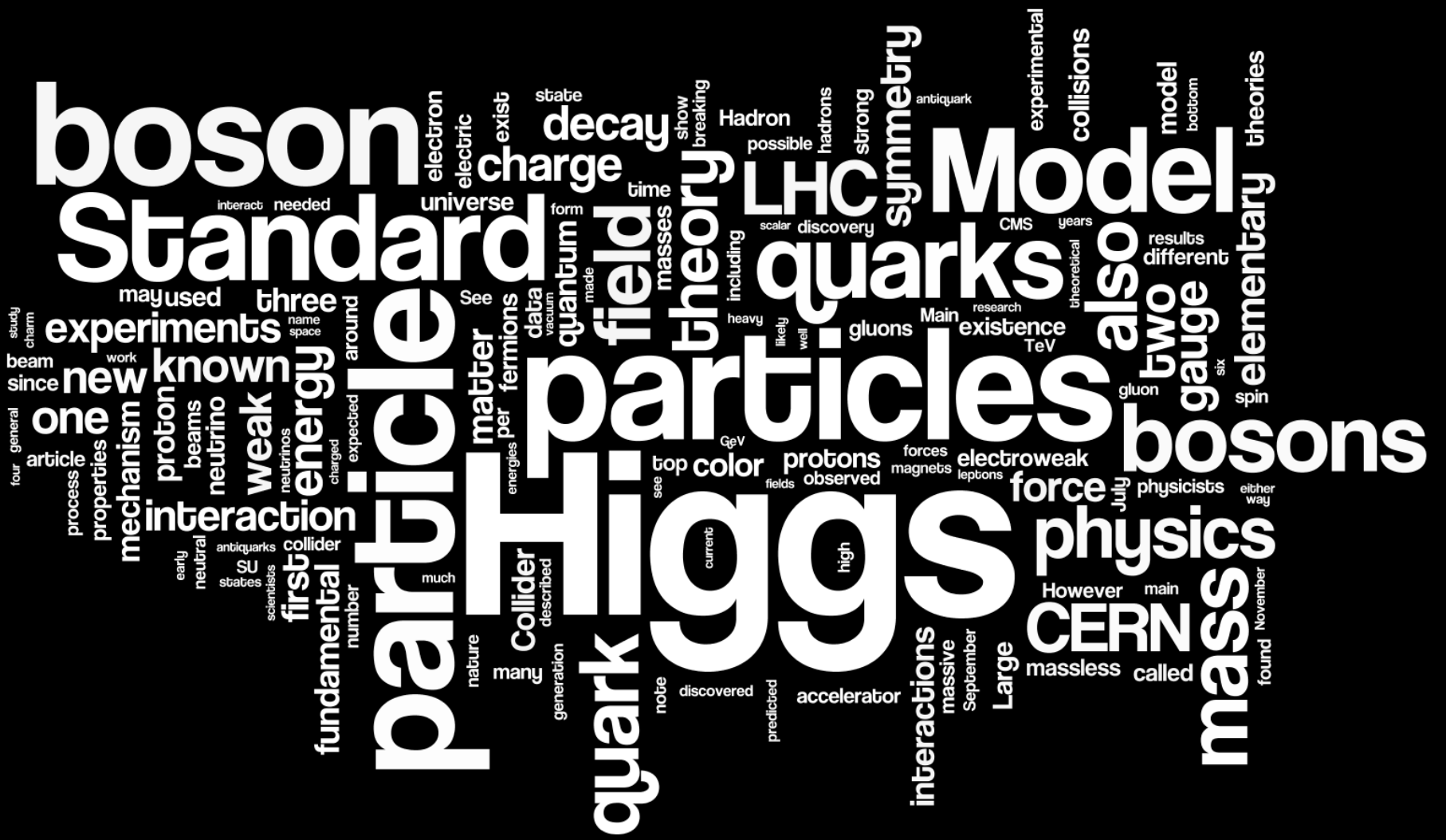
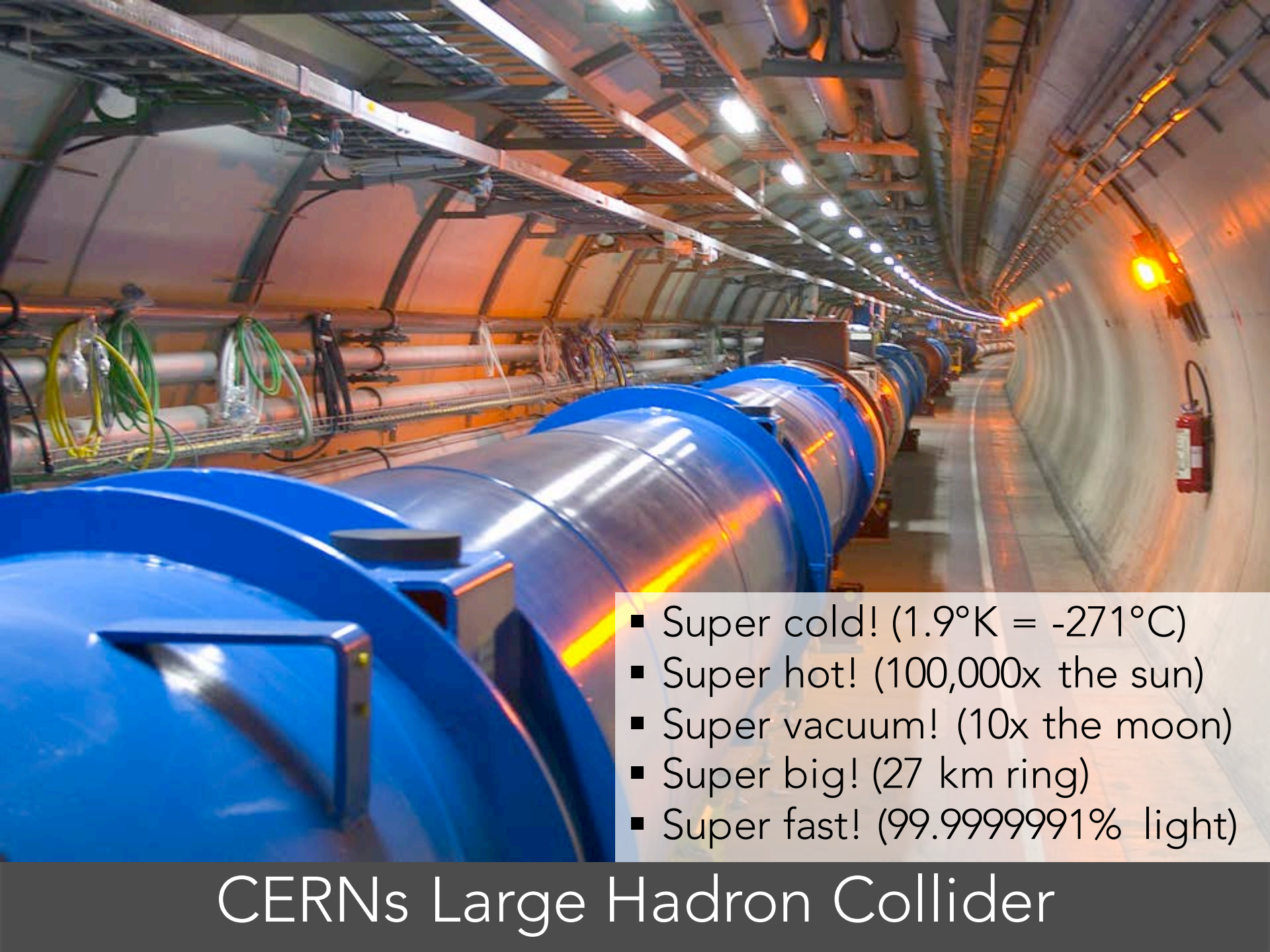
http://dx.doi.org/10.1016/j.physletb.2012.08.020

Scientific journals: dissemination and attribution (unchanged for 350 years)

HEP – High Energy Physics (crawling Wikipedia)



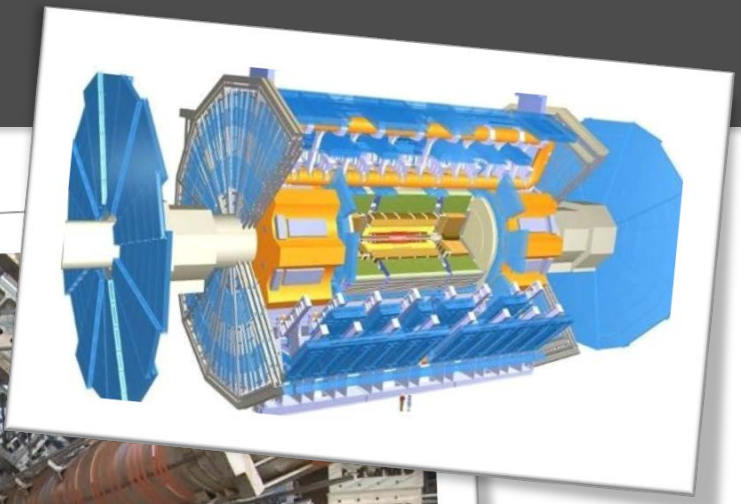


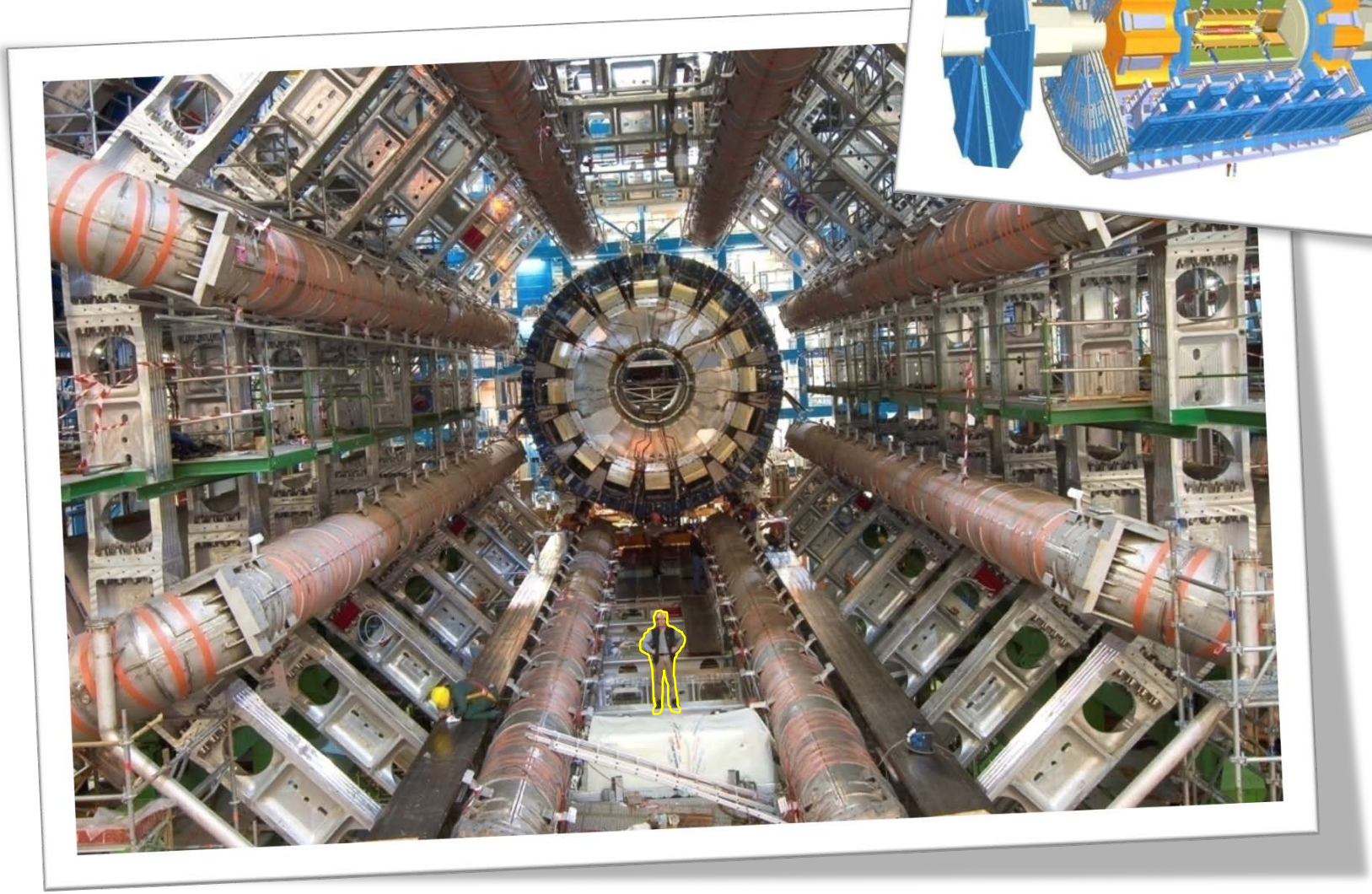
- Super cold! (1.9°K = -271°C)
- Super hot! (100,000x the sun)
- Super vacuum! (10x the moon)
- Super big! (27 km ring)
- Super fast! (99.9999991% light)

CERNs Large Hadron Collider

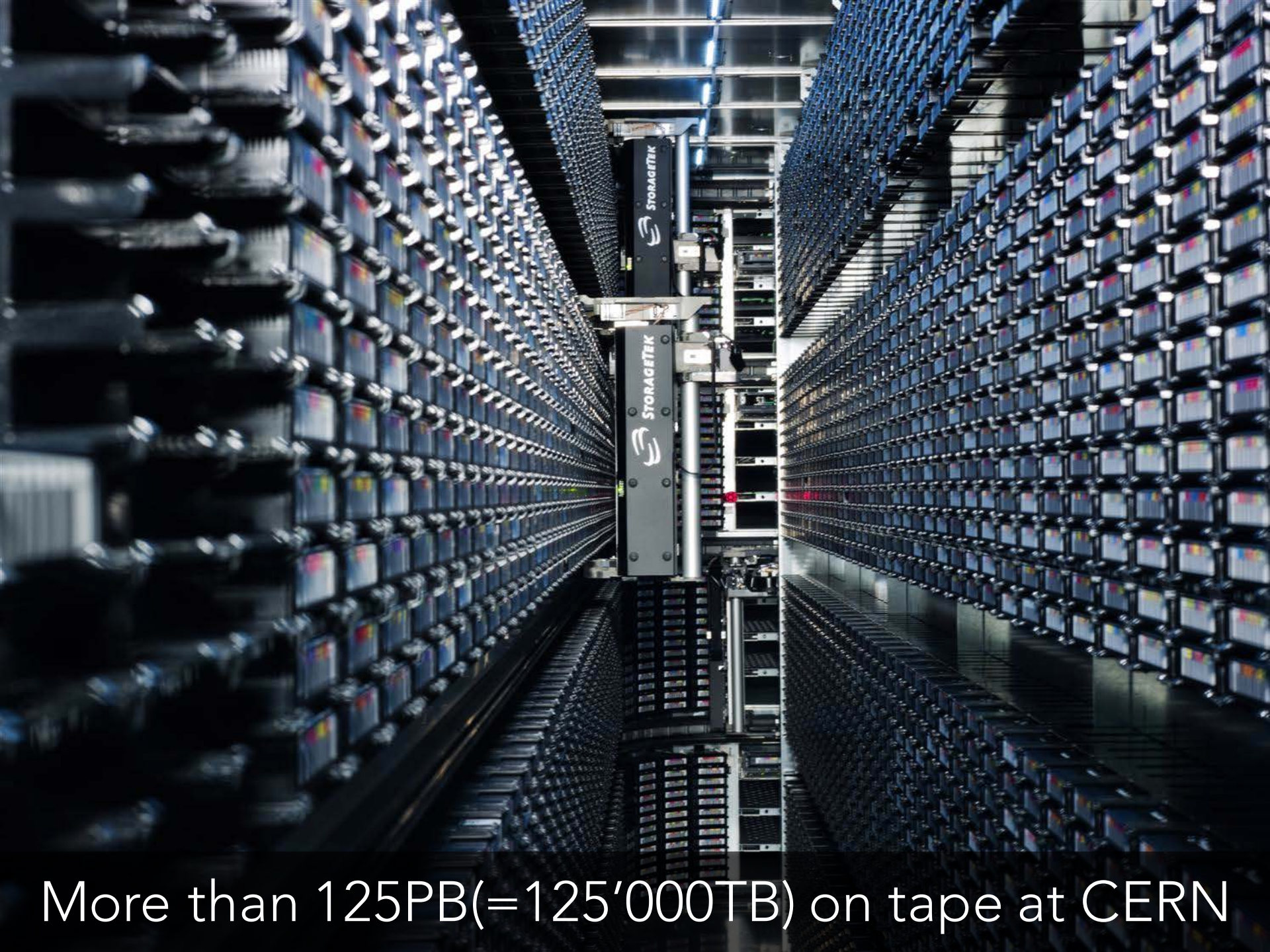
Four Large Detectors

e.g. ATLAS (A Toroidal LHC ApparatuS)

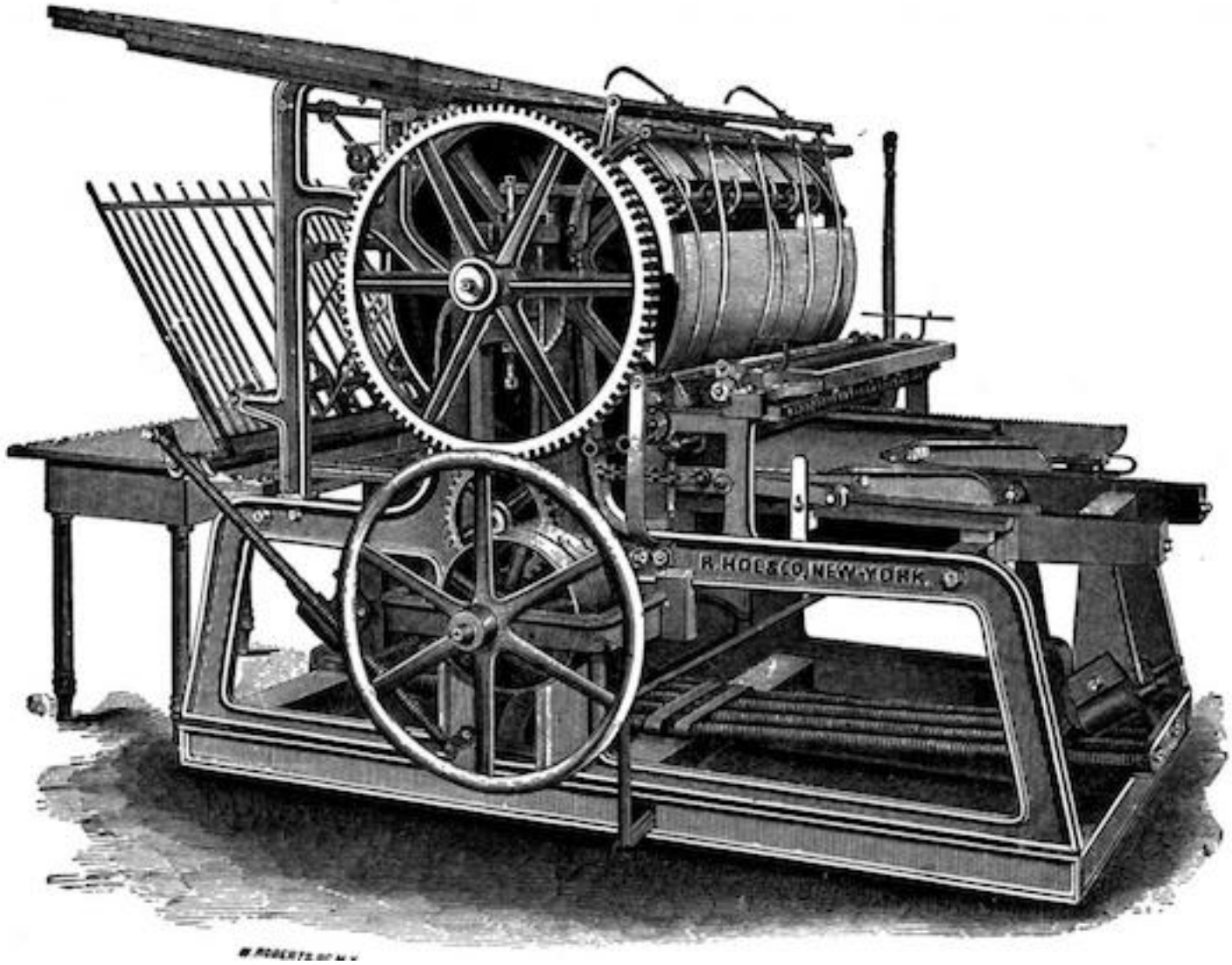




100 million “sensors”, 40 million pictures/second



More than 125PB(=125’000TB) on tape at CERN



Theories & experimental results are published

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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.

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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.

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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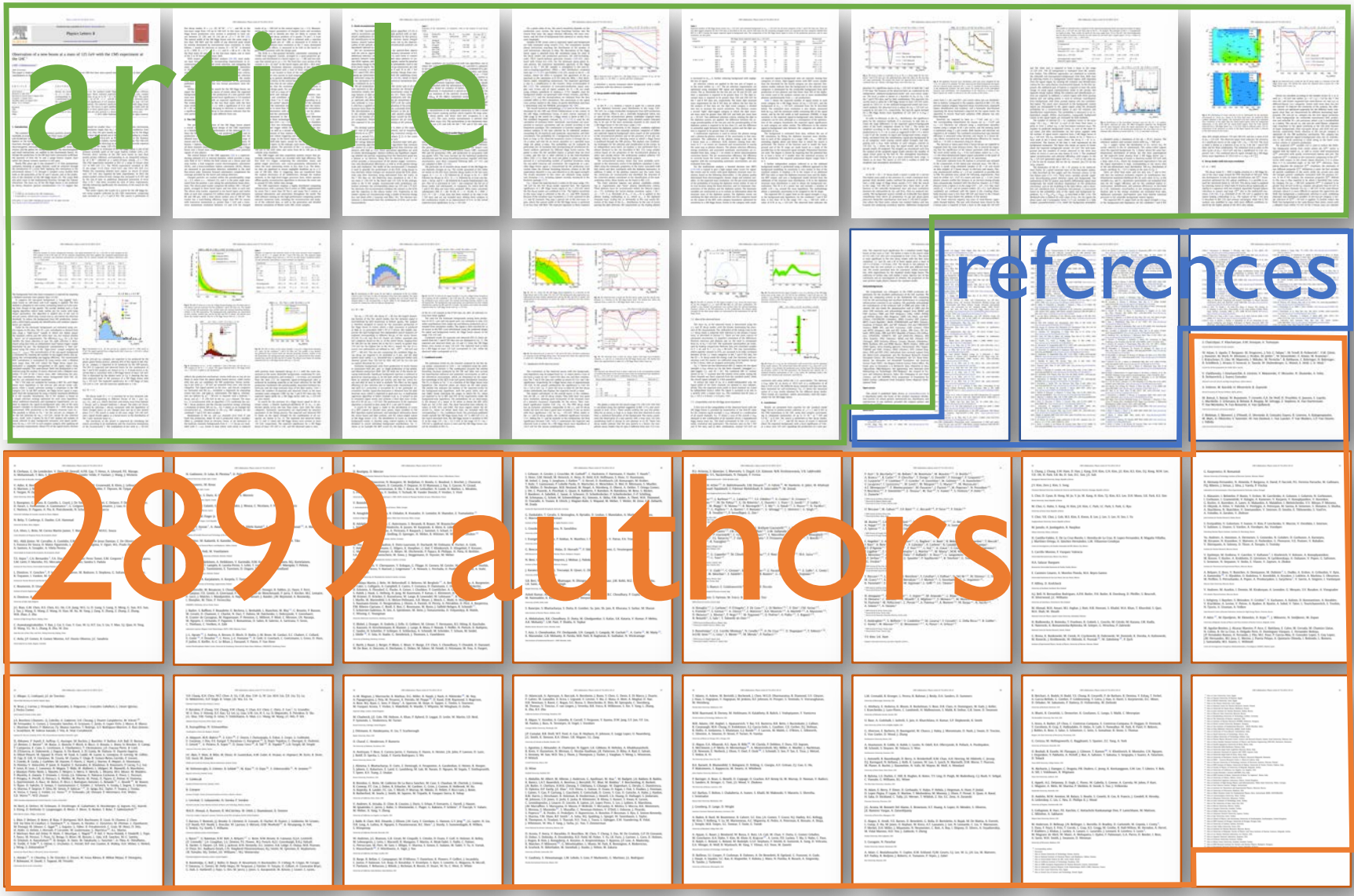
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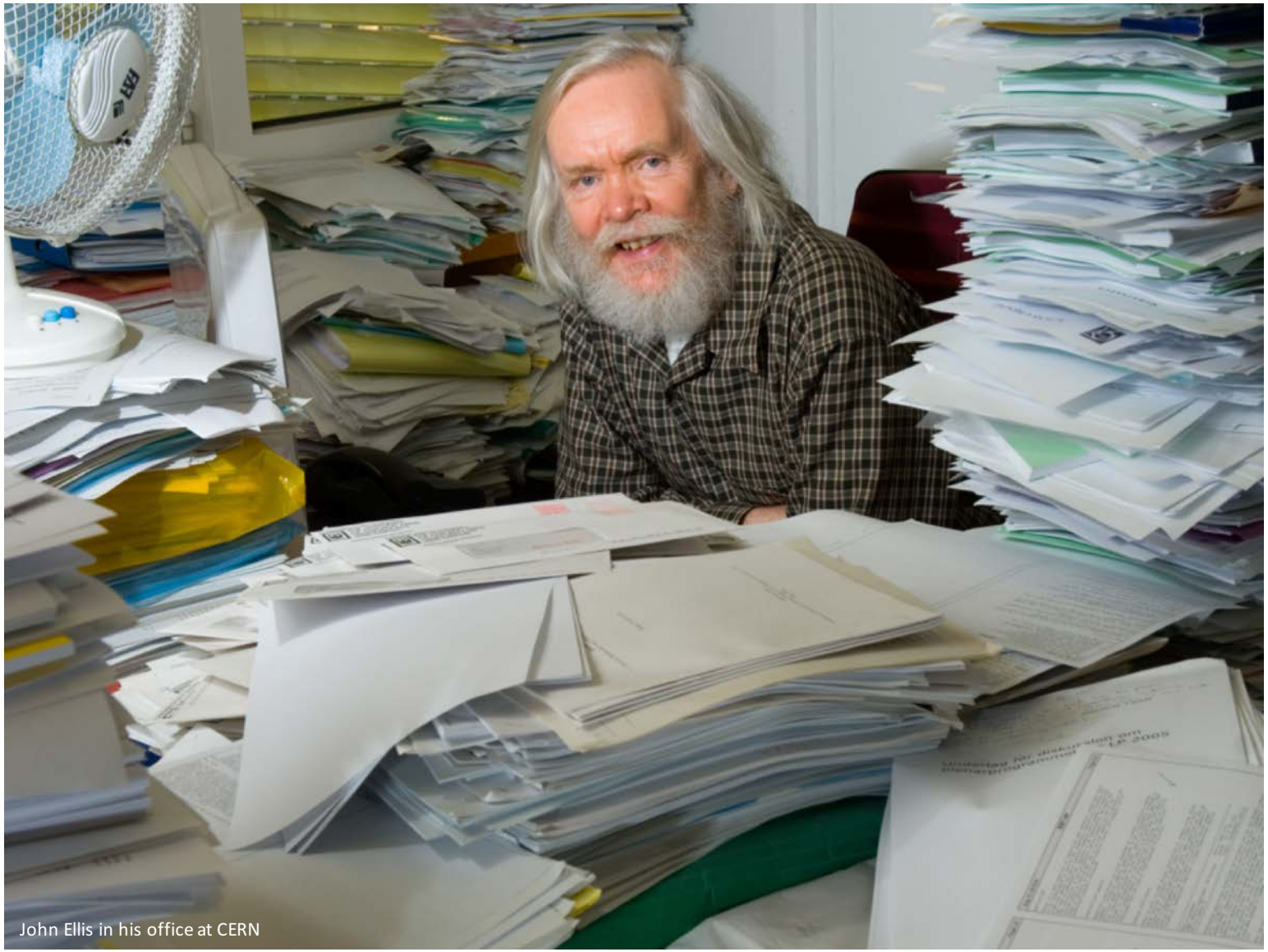


John Ellis in his office at CERN

- High-Energy Physics ~7’500 papers/year
- 90% written by 1 to 5 authors
- Only 2% of overall publications from CERN

1960th

CERN starts the Proton Synchrotron

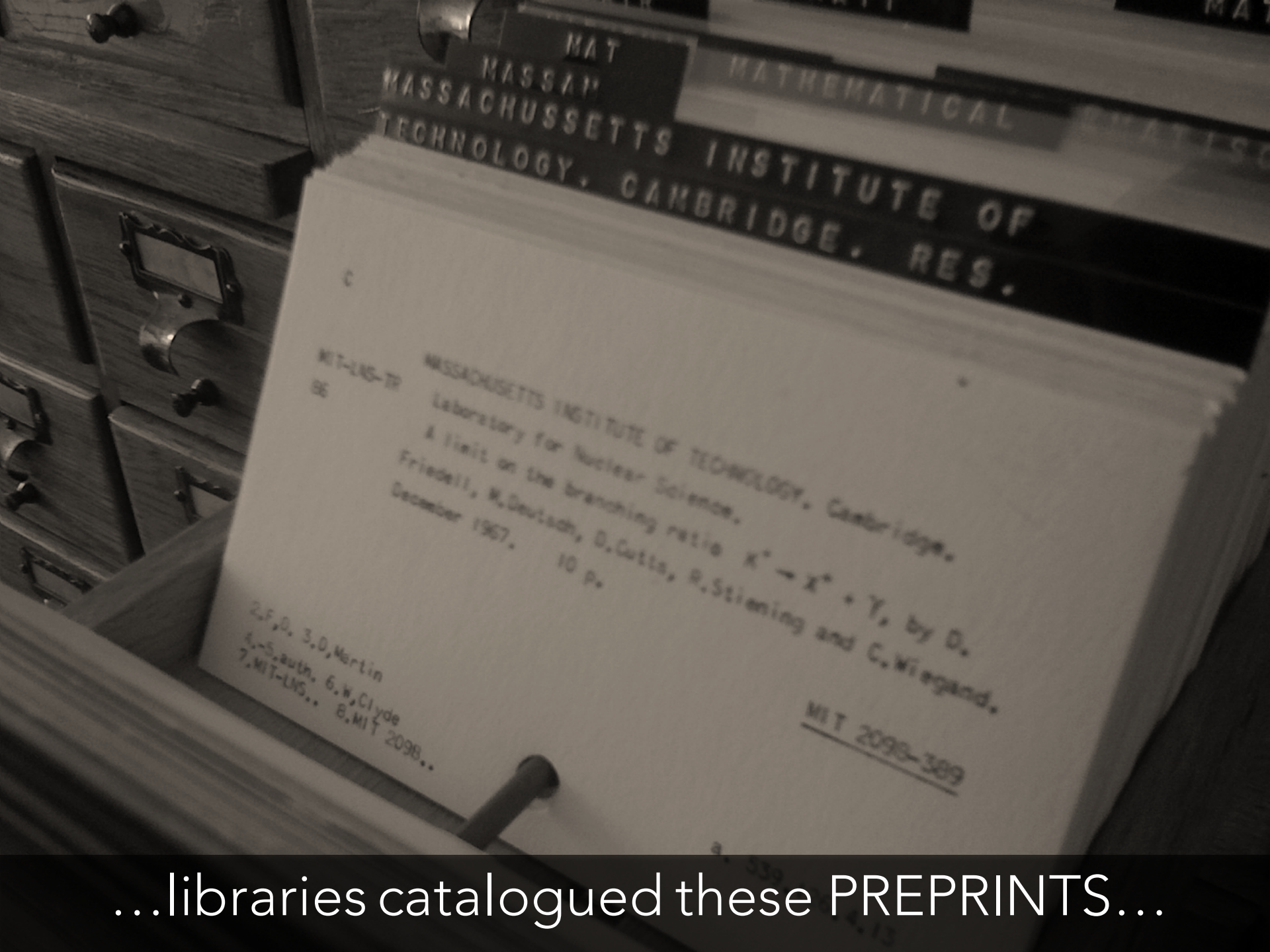
JFK is President of the U.S.A.

Woodstock Festival

Once upon a time, when air-mail was fast…

…HEP scientists wrote papers…

…then mailed them to journals AND colleagues…



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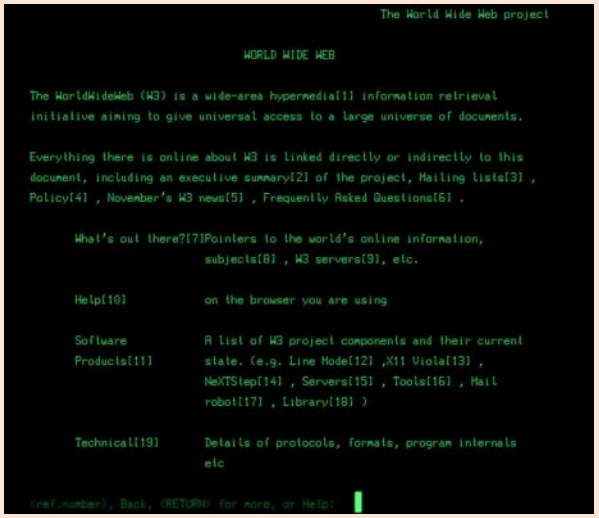
1989

The fall of the Berlin wall

Boy bands come up

The web is born!



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T. Berners-Lee,1989 at CERN: the web is born

Vague but exciting ...

CERN DD/OC

Tim Berners-Lee, CERN/DD

Information Management: A Proposal

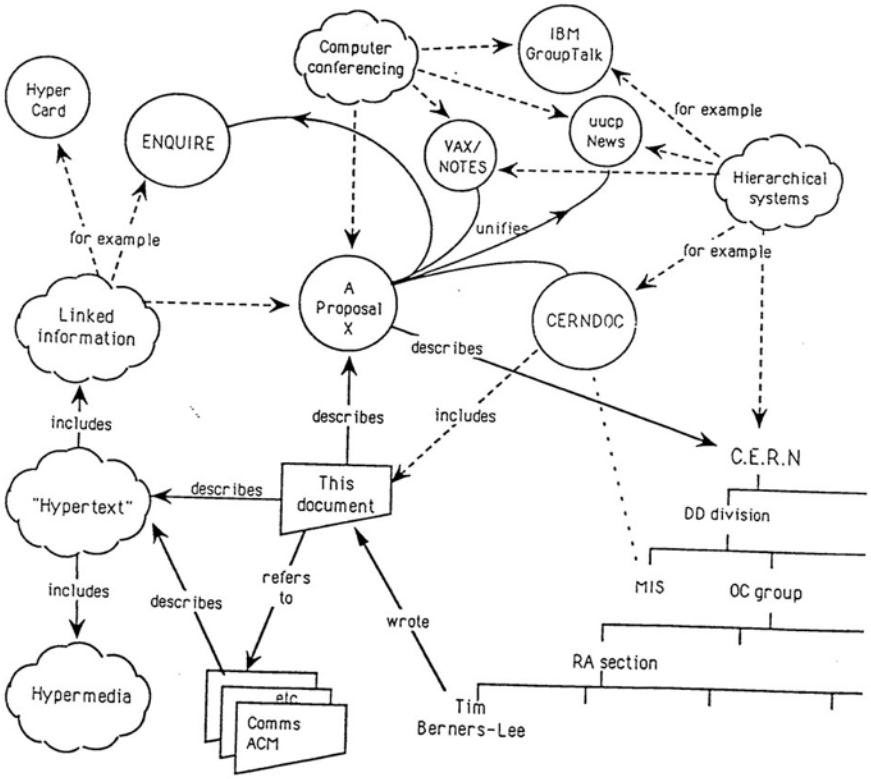
March 1989

Information Management: A Proposal

Abstract

This proposal concerns the management of general information about accelerators and experiments at CERN. It discusses the problems of loss of information about complex evolving systems and derives a solution based on a distributed hypertext sytstem.

Keywords: Hypertext, Computer conferencing, Document retrieval, Information management, Project control



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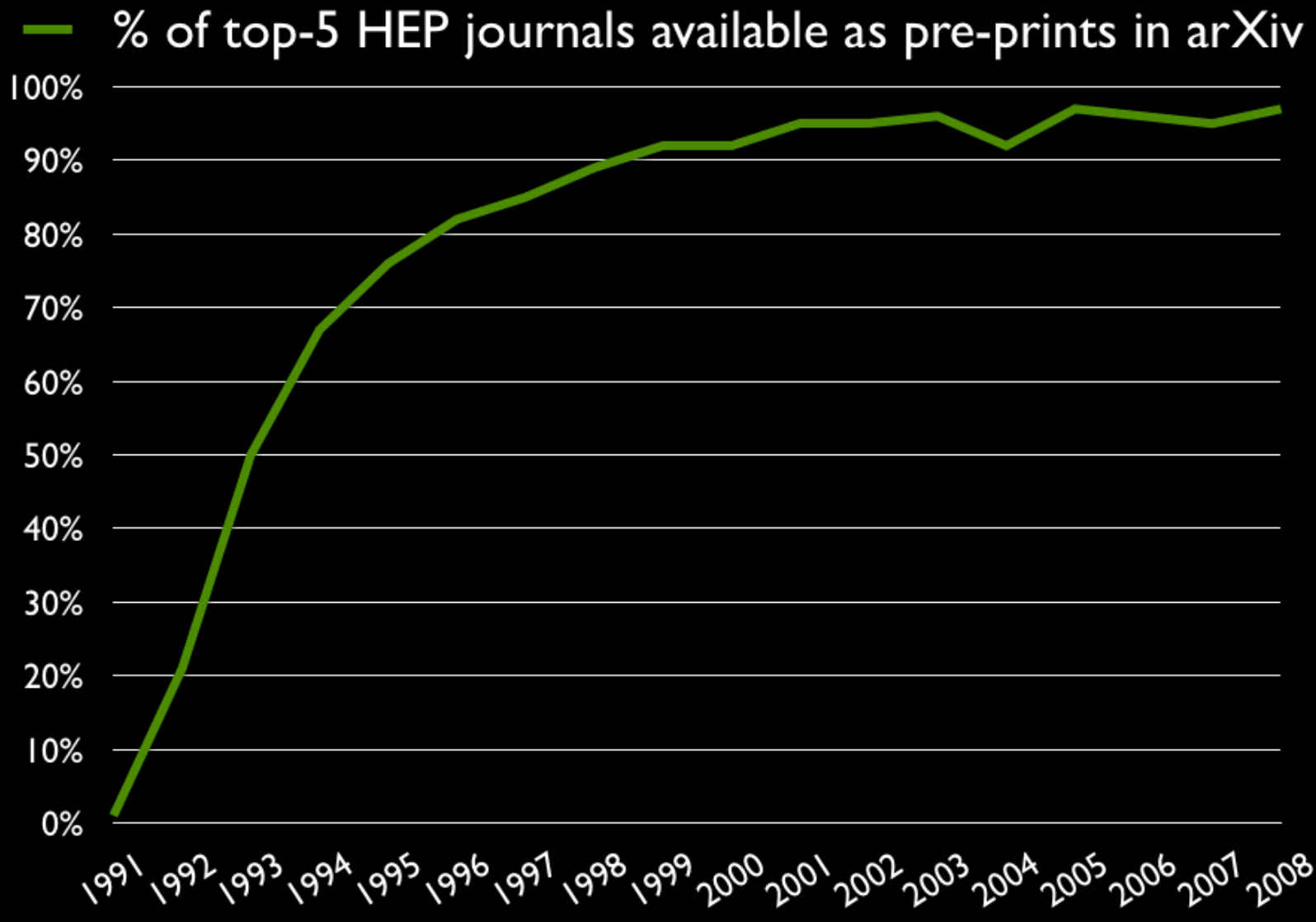
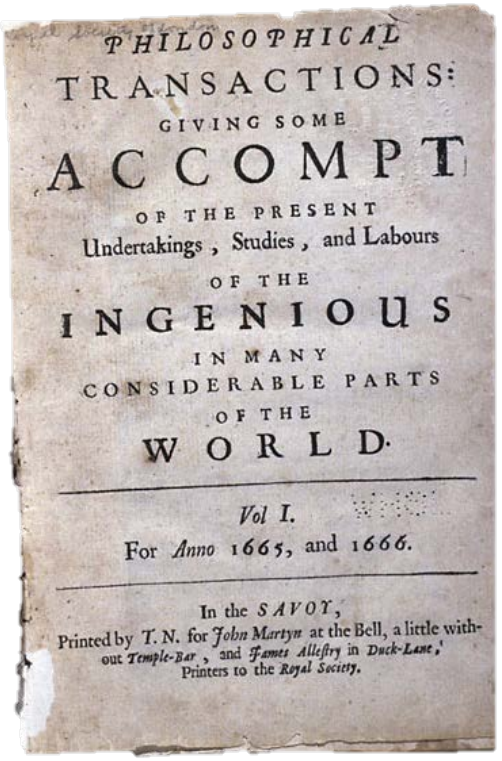
97% of HEP journals' content is in arXiv



Gentil-Beccot, Mele, Brooks, arXiv:0906.5418



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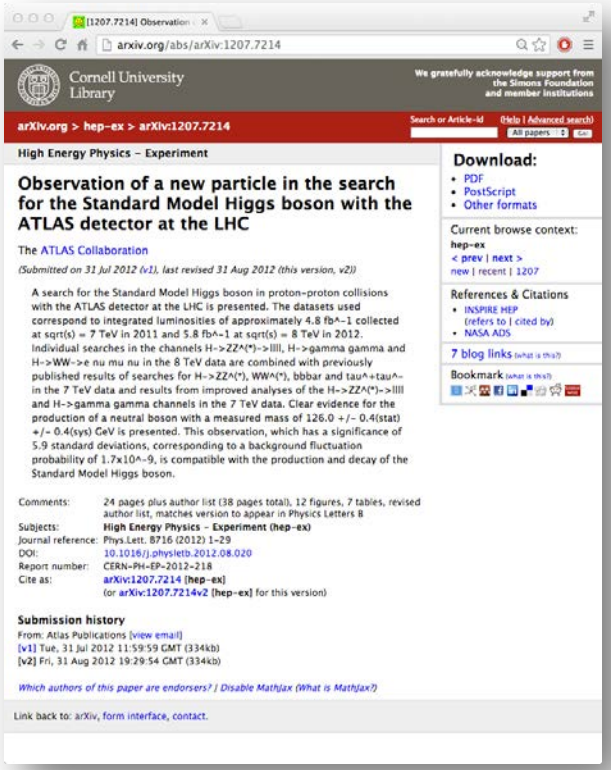

[1207.7214] Observation

arxiv.org/abs/arXiv:1207.7214

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High Energy Physics – Experiment

Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC

The ATLAS Collaboration

(Submitted on 31 Jul 2012 (v1), last revised 31 Aug 2012 (this version, v2))

A search for the Standard Model Higgs boson in proton–proton collisions with the ATLAS detector at the LHC is presented. The datasets used correspond to integrated luminosities of approximately 4.8 fb^-1 collected at sqrt(s) = 7 TeV in 2011 and 5.8 fb^-1 at sqrt(s) = 8 TeV in 2012. Individual searches in the channels H->ZZ^(*)->llll, H->gamma gamma and H->WW->e nu mu nu in the 8 TeV data are combined with previously published results of searches for H->ZZ^(*), WW^(*), bbbar and tau^+tau^- in the 7 TeV data and results from improved analyses of the H->ZZ^(*)->llll and H->gamma gamma channels in the 7 TeV data. Clear evidence for the production of a neutral boson with a measured mass of 126.0 +/- 0.4(stat) +/- 0.4(sys) GeV is presented. This observation, which has a significance of 5.9 standard deviations, corresponding to a background fluctuation probability of 1.7x10^-9, is compatible with the production and decay of the Standard Model Higgs boson.

Comments: 24 pages plus author list (38 pages total), 12 figures, 7 tables, revised author list, matches version to appear in Physics Letters B
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Journal reference: Phys.Lett. B716 (2012) 1-29
DOI: 10.1016/j.physletb.2012.08.020
Report number: CERN-PH-EP-2012-218
Cite as: arXiv:1207.7214 [hep-ex]
(or arXiv:1207.7214v2 [hep-ex] for this version)

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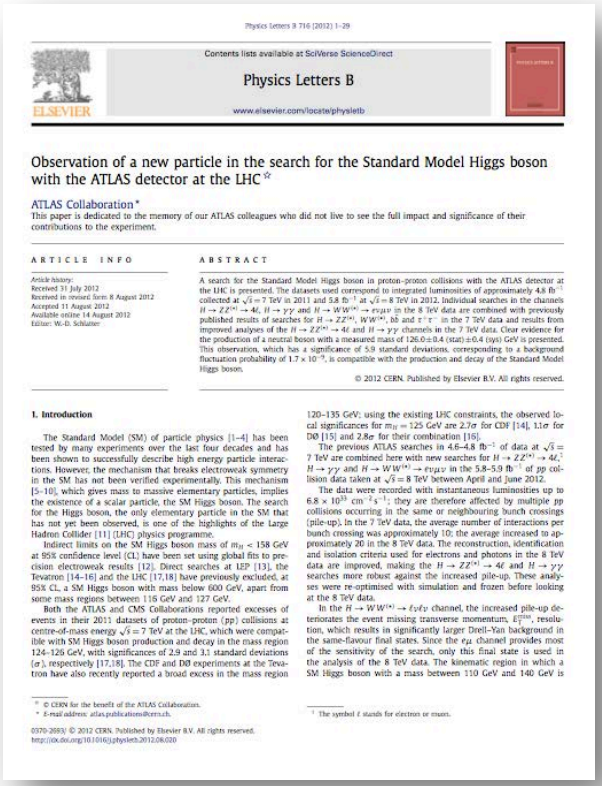

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ATLAS Collaboration *

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The data were recorded with instantaneous luminosities up to 6.8×10^{33} $cm^{-2}s^{-1}$; they are therefore affected by multiple pp collisions occurring in the same or neighbouring bunch crossings (pile-up). In the 7 TeV data, the average number of interactions per bunch crossing was approximately 10; the average increased to approximately 20 in the 8 TeV data. The reconstruction, identification and isolation criteria used for electrons and photons in the 8 TeV data are improved, making the $H \to ZZ^{(*)} \to 4\ell$ and $H \to \gamma\gamma$ searches more robust against the increased pile-up. These analyses were re-optimised with simulation and frozen before looking at the 8 TeV data.

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[1] The symbol ℓ stands for electron or muon.

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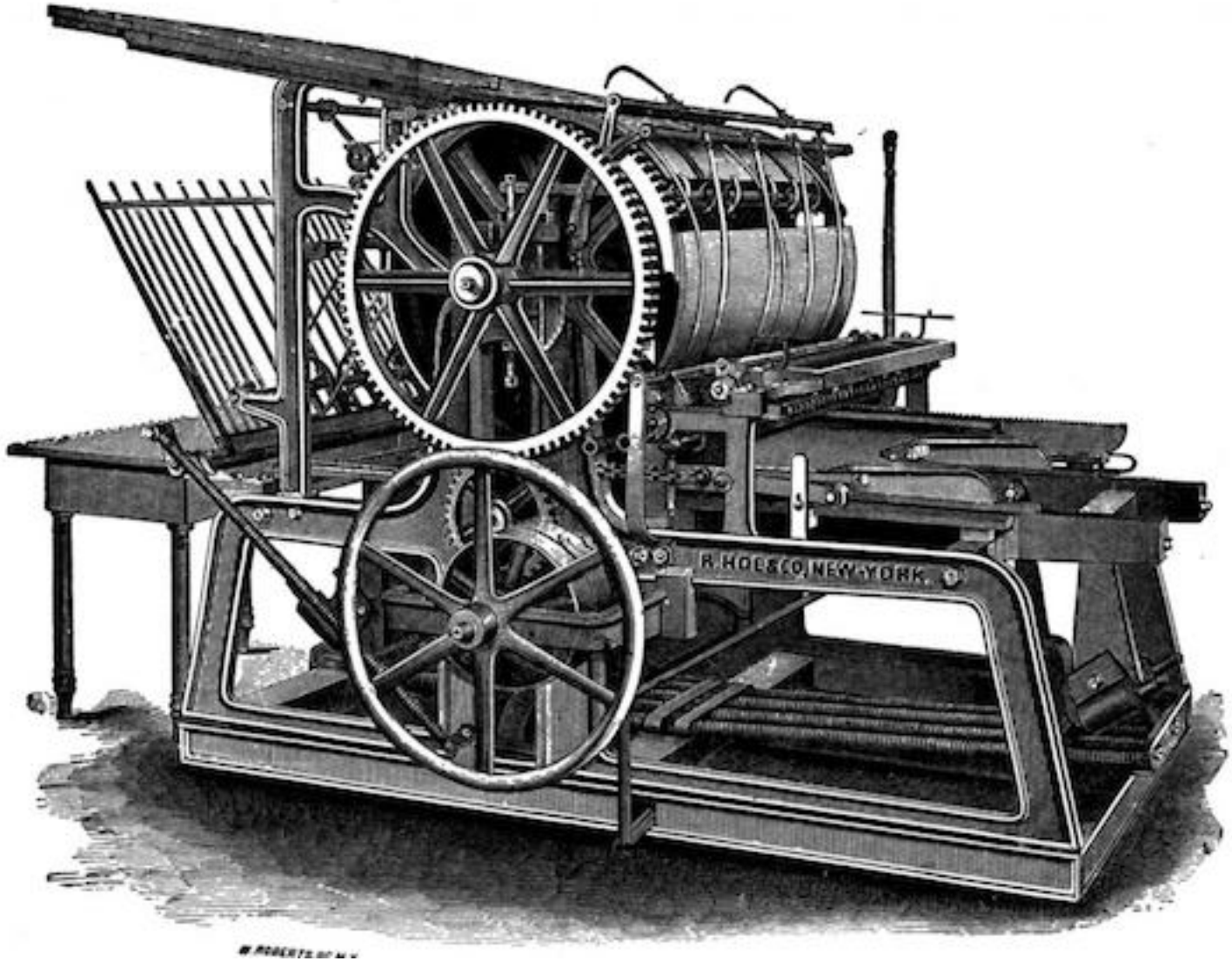

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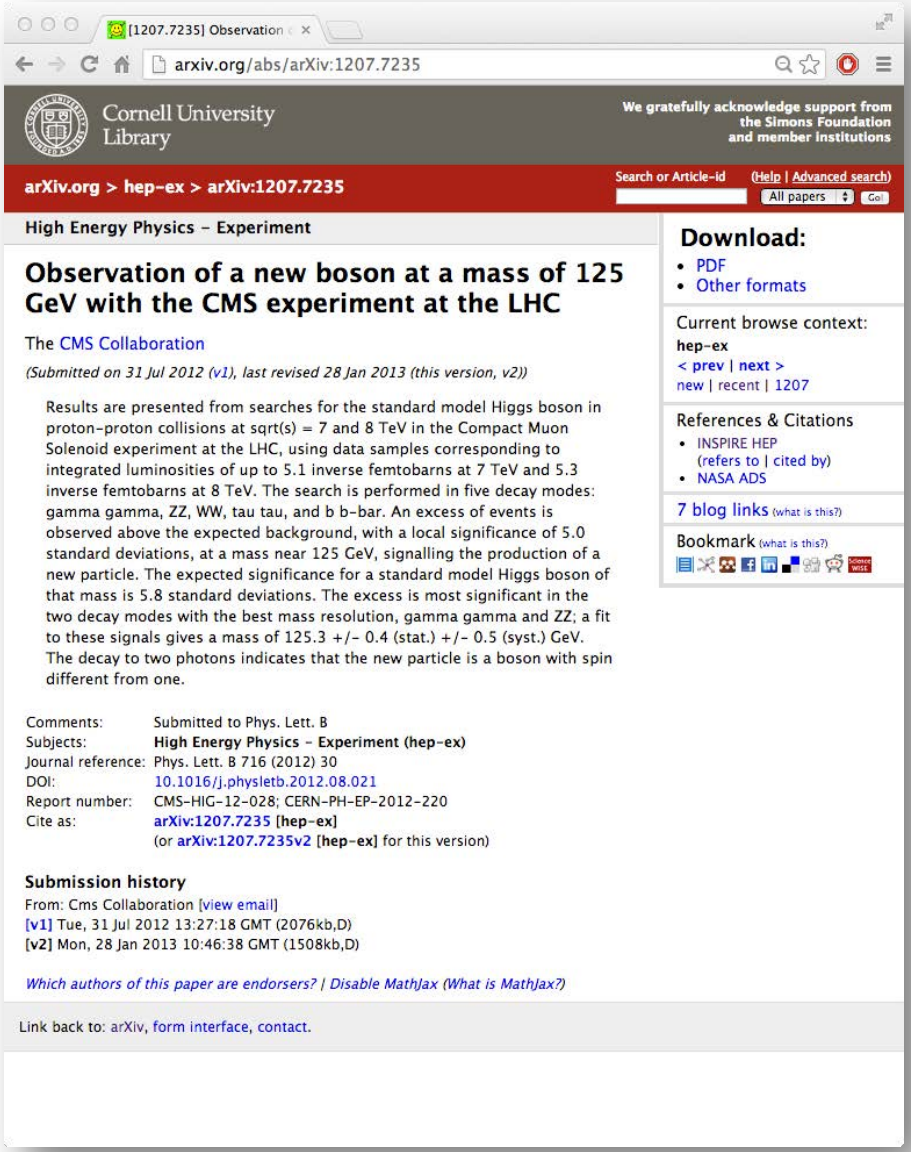

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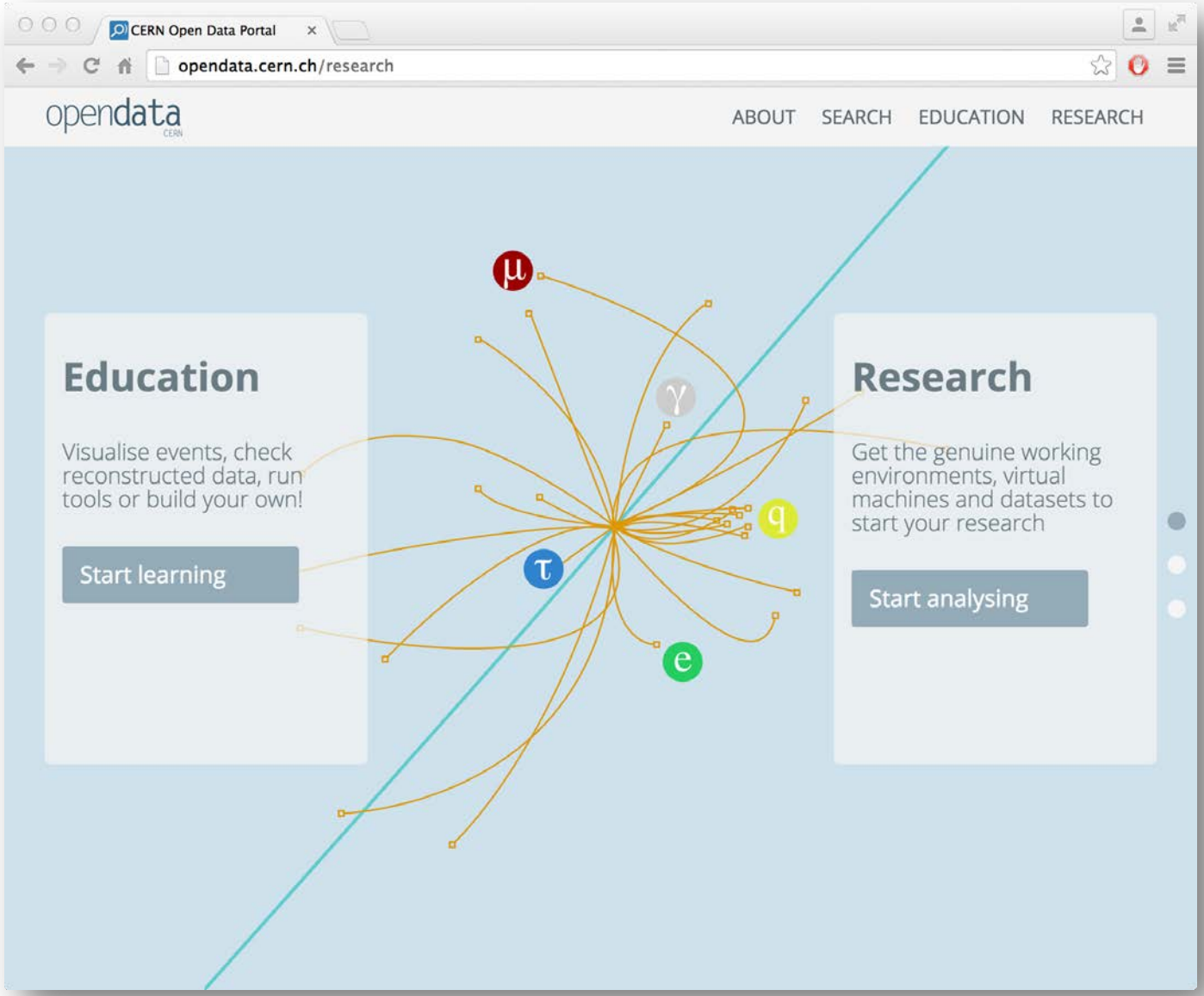

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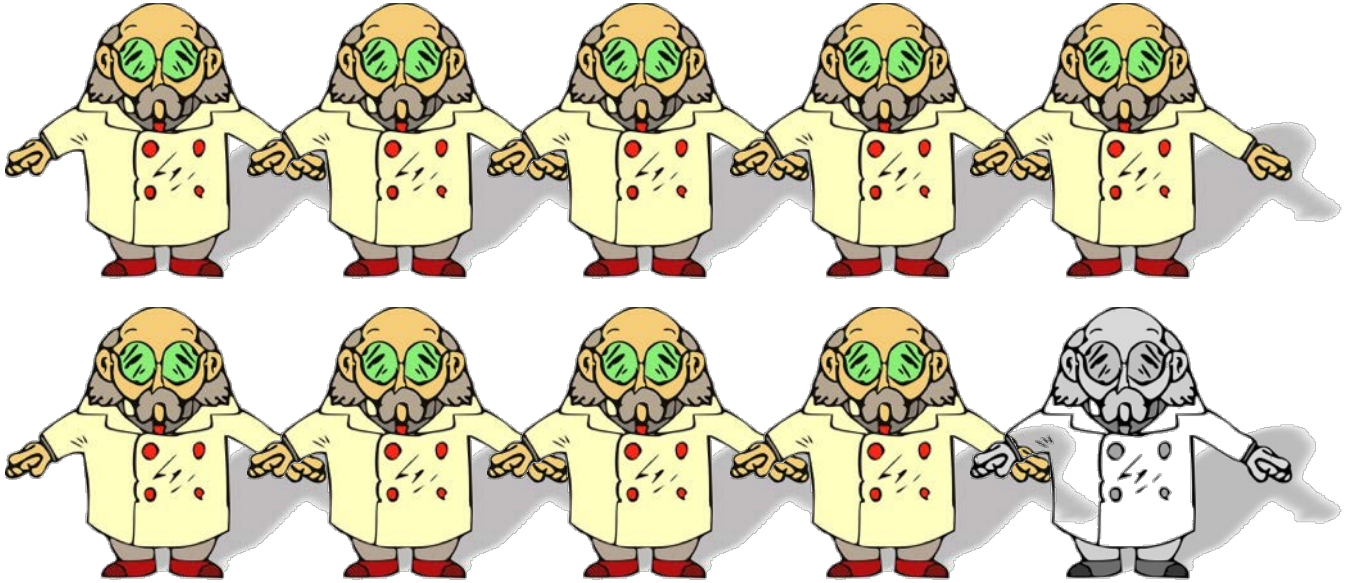
Do High-Energy Physicists "read" journals ?

9 HEP scientists in 10…



…use arXiv also when a journal version exists!

Gentil-Beccot, Mele, Brooks arXiv: 0906.5418

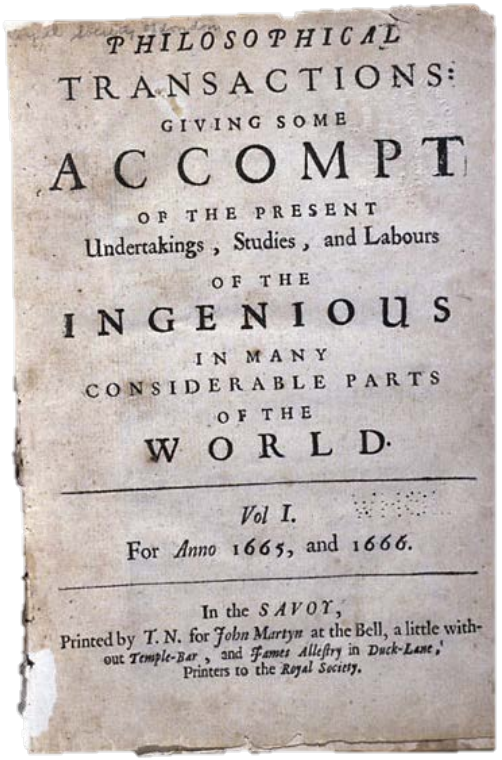
The role of journals today

Quality Assurance & Peer Review

The role of journals today

Interface with Officialdom

Dissemination on arXiv.org; Peer-review on journals



PHILOSOPHICAL
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OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
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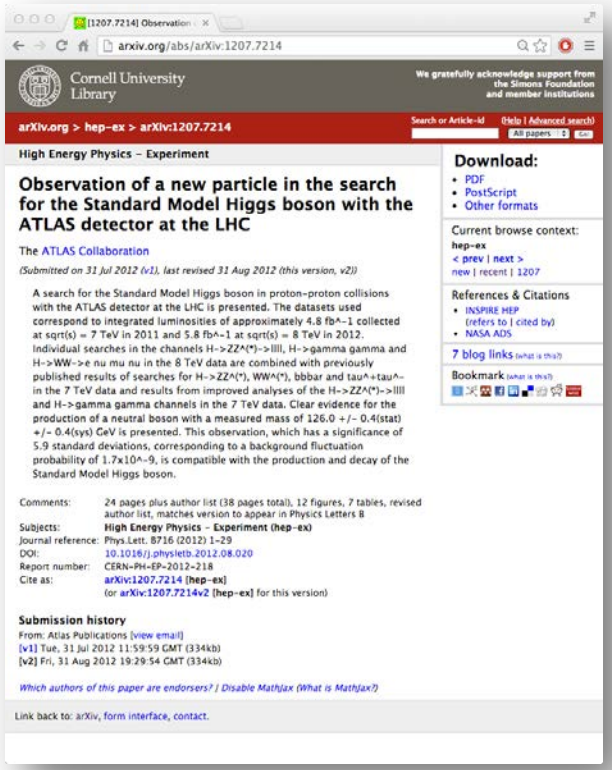
CONSIDERABLE PARTS
OF THE
WORLD.

Vol I.
For Anno 1665, and 1666.

In the SAVOY,
Printed by T. N. for John Martyn at the Bell, a little without Temple-Bar, and James Allestry in Duck-Lane, Printers to the Royal Society.



[1207.7214] Observation
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High Energy Physics – Experiment

Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC

The ATLAS Collaboration

(Submitted on 31 Jul 2012 (v1), last revised 31 Aug 2012 (this version, v2))

A search for the Standard Model Higgs boson in proton–proton collisions with the ATLAS detector at the LHC is presented. The datasets used correspond to integrated luminosities of approximately 4.8 fb^-1 collected at sqrt(s) = 7 TeV in 2011 and 5.8 fb^-1 at sqrt(s) = 8 TeV in 2012. Individual searches in the channels H->ZZ^(*)->llll, H->gamma gamma and H->WW->e nu mu nu in the 8 TeV data are combined with previously published results of searches for H->ZZ^(*), WW^(*), bbbar and tau^+tau^- in the 7 TeV data and results from improved analyses of the H->ZZ^(*)->llll and H->gamma gamma channels in the 7 TeV data. Clear evidence for the production of a neutral boson with a measured mass of 126.0 +/- 0.4(stat) +/- 0.4(sys) GeV is presented. This observation, which has a significance of 5.9 standard deviations, corresponding to a background fluctuation probability of 1.7x10^-9, is compatible with the production and decay of the Standard Model Higgs boson.

Comments: 24 pages plus author list (38 pages total), 12 figures, 7 tables, revised author list, matches version to appear in Physics Letters B
Subjects: High Energy Physics – Experiment (hep-ex)
Journal reference: Phys.Lett. B716 (2012) 1-29
DOI: 10.1016/j.physletb.2012.08.020
Report number: CERN-PH-EP-2012-218
Cite as: arXiv:1207.7214 [hep-ex] (or arXiv:1207.7214v2 [hep-ex] for this version)

Submission history
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Physics Letters B 716 (2012) 1–29
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Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC ☆

ATLAS Collaboration *
This paper is dedicated to the memory of our ATLAS colleagues who did not live to see the full impact and significance of their contributions to the experiment.

ARTICLE INFO

Article history:
Received 31 July 2012
Received in revised form 8 August 2012
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Editor: W.-D. Schlatter

ABSTRACT

A search for the Standard Model Higgs boson in proton–proton collisions with the ATLAS detector at the LHC is presented. The datasets used correspond to integrated luminosities of approximately 4.8 fb^{-1} collected at $\sqrt{s} = 7$ TeV in 2011 and 5.8 fb^{-1} at $\sqrt{s} = 8$ TeV in 2012. Individual searches in the channels $H \to ZZ^{(*)} \to 4\ell$, $H \to \gamma\gamma$ and $H \to WW^{(*)} \to e\nu\mu\nu$ in the 8 TeV data are combined with previously published results of searches for $H \to ZZ^{(*)}$, $WW^{(*)}$, $b\bar{b}$ and $\tau^+\tau^-$ in the 7 TeV data and results from improved analyses of the $H \to ZZ^{(*)} \to 4\ell$ and $H \to \gamma\gamma$ channels in the 7 TeV data. Clear evidence for the production of a neutral boson with a measured mass of $126.0 \pm 0.4\,(\text{stat}) \pm 0.4\,(\text{sys})$ GeV is presented. This observation, which has a significance of 5.9 standard deviations, corresponding to a background fluctuation probability of 1.7×10^{-9}, is compatible with the production and decay of the Standard Model Higgs boson.

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1. Introduction

The Standard Model (SM) of particle physics [1–4] has been tested by many experiments over the last four decades and has been shown to successfully describe high energy particle interactions. However, the mechanism that breaks electroweak symmetry in the SM has not been verified experimentally. This mechanism [5–10], which gives mass to massive elementary particles, implies the existence of a scalar particle, the SM Higgs boson. The search for the Higgs boson, the only elementary particle in the SM that has not yet been observed, is one of the highlights of the Large Hadron Collider [11] (LHC) physics programme.

Indirect limits on the SM Higgs boson mass of $m_H < 158$ GeV at 95% confidence level (CL) have been set using global fits to precision electroweak results [12]. Direct searches at LEP [13], the Tevatron [14–16] and the LHC [17,18] have previously excluded, at 95% CL, a SM Higgs boson with mass below 600 GeV, apart from some mass regions between 116 GeV and 127 GeV.

Both the ATLAS and CMS Collaborations reported excesses of events in their 2011 datasets of proton–proton (pp) collisions at centre-of-mass energy $\sqrt{s} = 7$ TeV at the LHC, which were compatible with SM Higgs boson production and decay in the mass region 124–126 GeV, with significances of 2.9 and 3.1 standard deviations (σ), respectively [17,18]. The CDF and DØ experiments at the Tevatron have also recently reported a broad excess in the mass region 120–135 GeV; using the existing LHC constraints, the observed local significances for $m_H = 125$ GeV are 2.7σ for CDF [14], 1.1σ for DØ [15] and 2.8σ for their combination [16].

The previous ATLAS searches in 4.6–4.8 fb^{-1} of data at $\sqrt{s} = 7$ TeV are combined here with new searches for $H \to ZZ^{(*)} \to 4\ell$, $H \to \gamma\gamma$ and $H \to WW^{(*)} \to e\nu\mu\nu$ in the 5.8–5.9 fb^{-1} of pp collision data taken at $\sqrt{s} = 8$ TeV between April and June 2012.

The data were recorded with instantaneous luminosities up to 6.8×10^{33} cm^{-2} s^{-1}; they are therefore affected by multiple pp collisions occurring in the same or neighbouring bunch crossings (pile-up). In the 7 TeV data, the average number of interactions per bunch crossing was approximately 10; the average increased to approximately 20 in the 8 TeV data. The reconstruction, identification and isolation criteria used for electrons and photons in the 8 TeV data are improved, making the $H \to ZZ^{(*)} \to 4\ell$ and $H \to \gamma\gamma$ searches more robust against the increased pile-up. These analyses were re-optimised with simulation and frozen before looking at the 8 TeV data.

In the $H \to WW^{(*)} \to \ell\nu\ell\nu$ channel, the increased pile-up deteriorates the event missing transverse momentum, $E_{\mathrm{T}}^{\mathrm{miss}}$, resolution, which results in significantly larger Drell–Yan background in the same-flavour final states. Since the $e\mu$ channel provides most of the sensitivity of the search, only this final state is used in the analysis of the 8 TeV data. The kinematic region in which a SM Higgs boson with a mass between 110 GeV and 140 GeV is

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* E-mail address: atlas.publications@cern.ch.

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http://dx.doi.org/10.1016/j.physletb.2012.08.020

† The symbol ℓ stands for electron or muon.

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LHC: largest scientific instrument ever built, 27km

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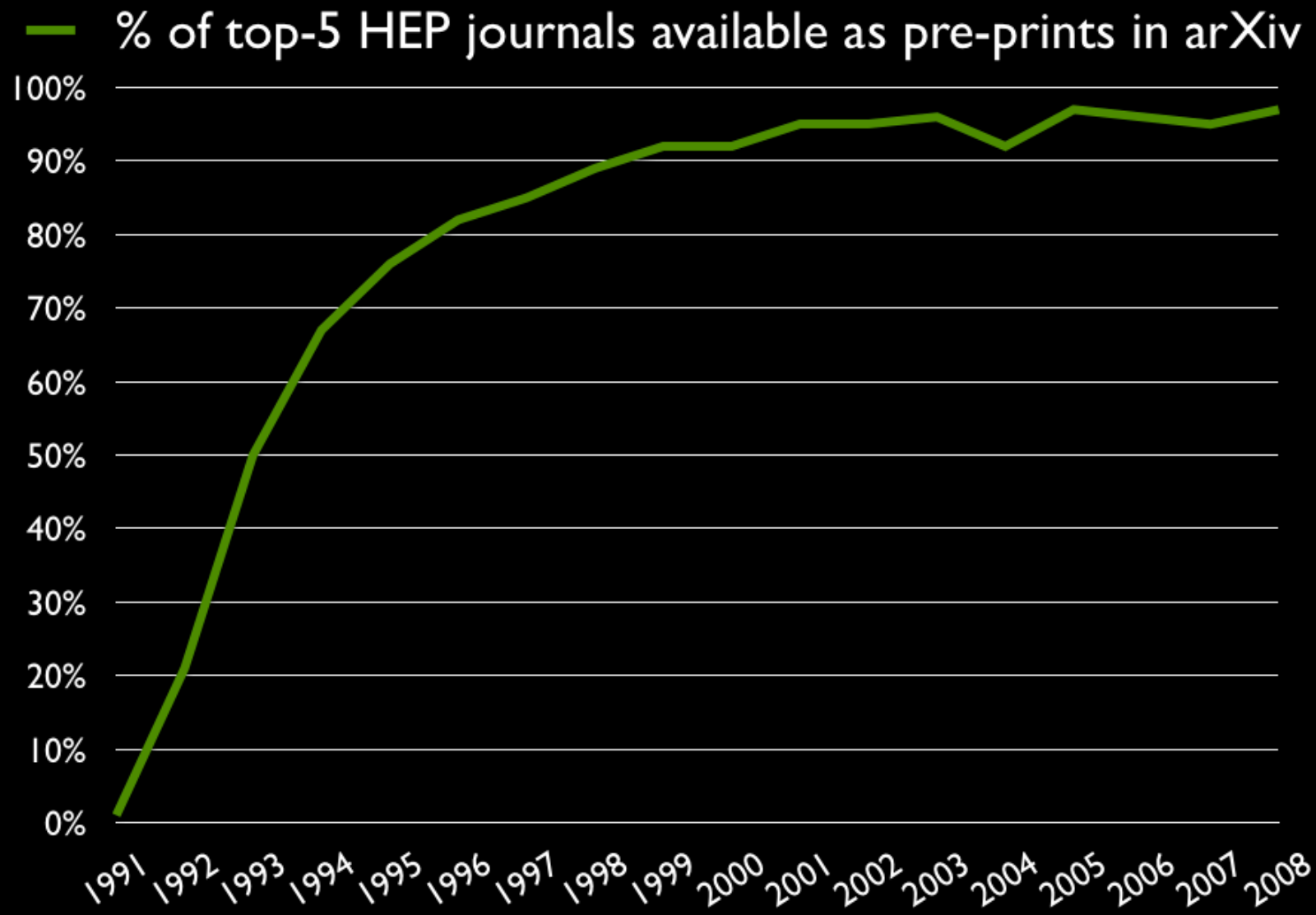

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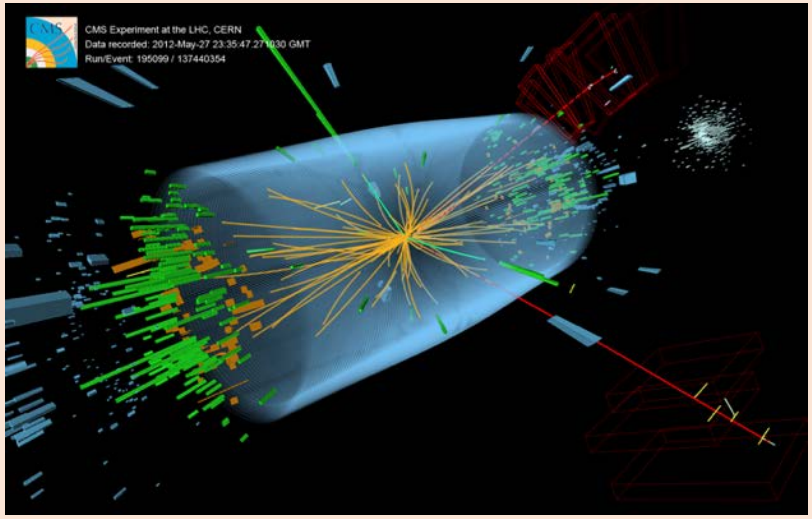
2012

Olympic Games
in London



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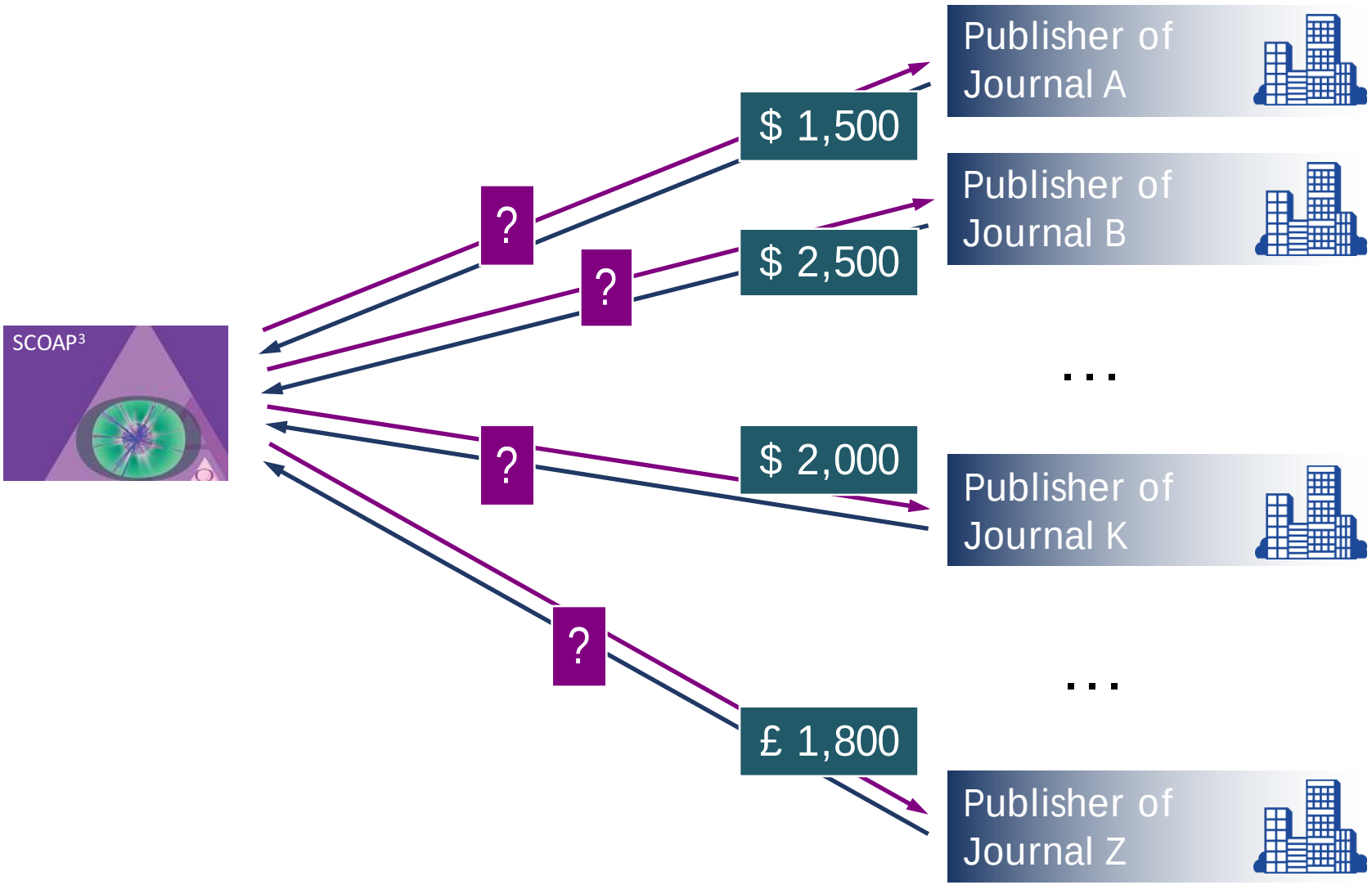
CERN Procurement for the benefit of SCOAP^3

The SCOAP³ Tender Process…



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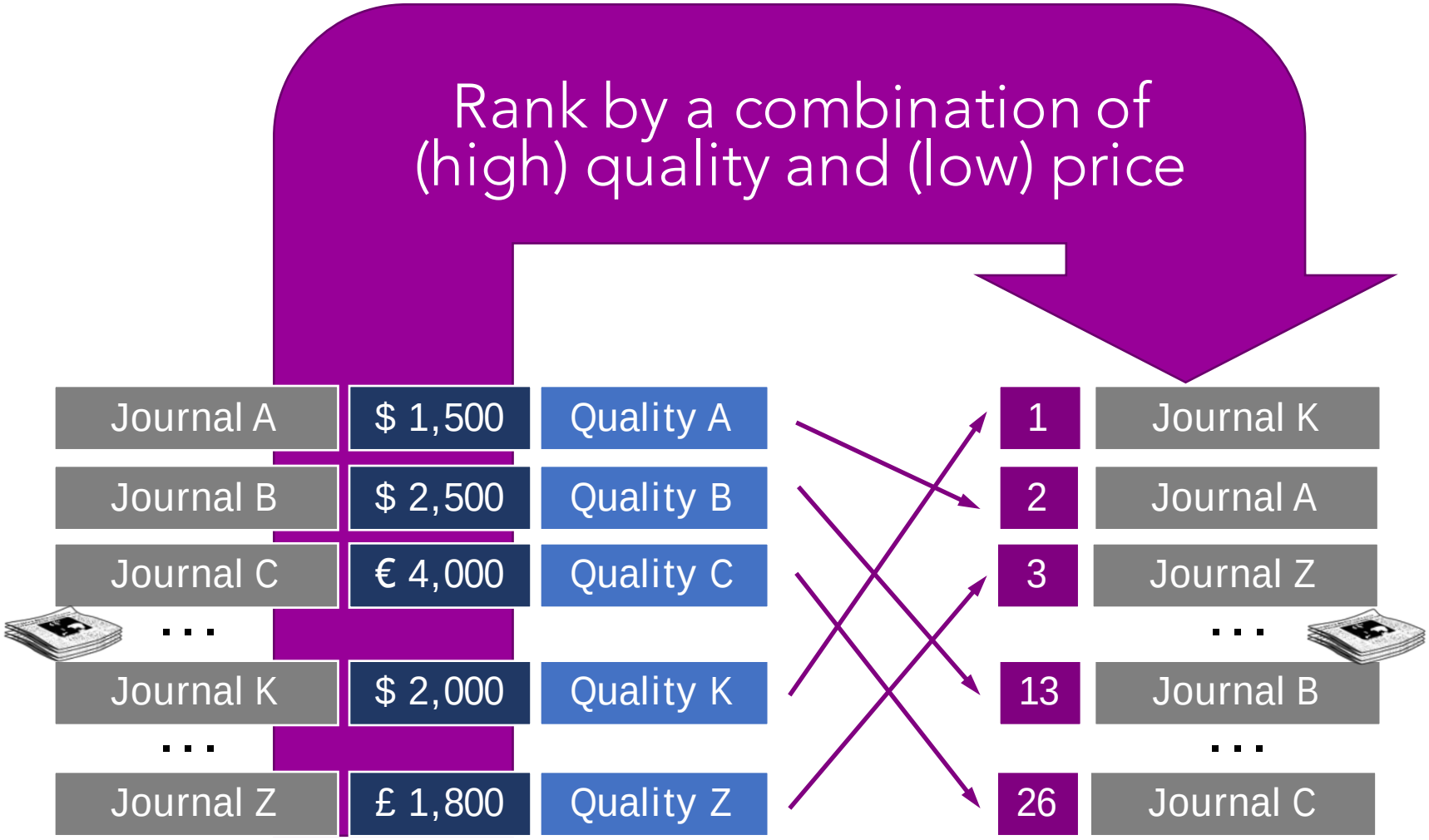

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…within an available budget envelope.

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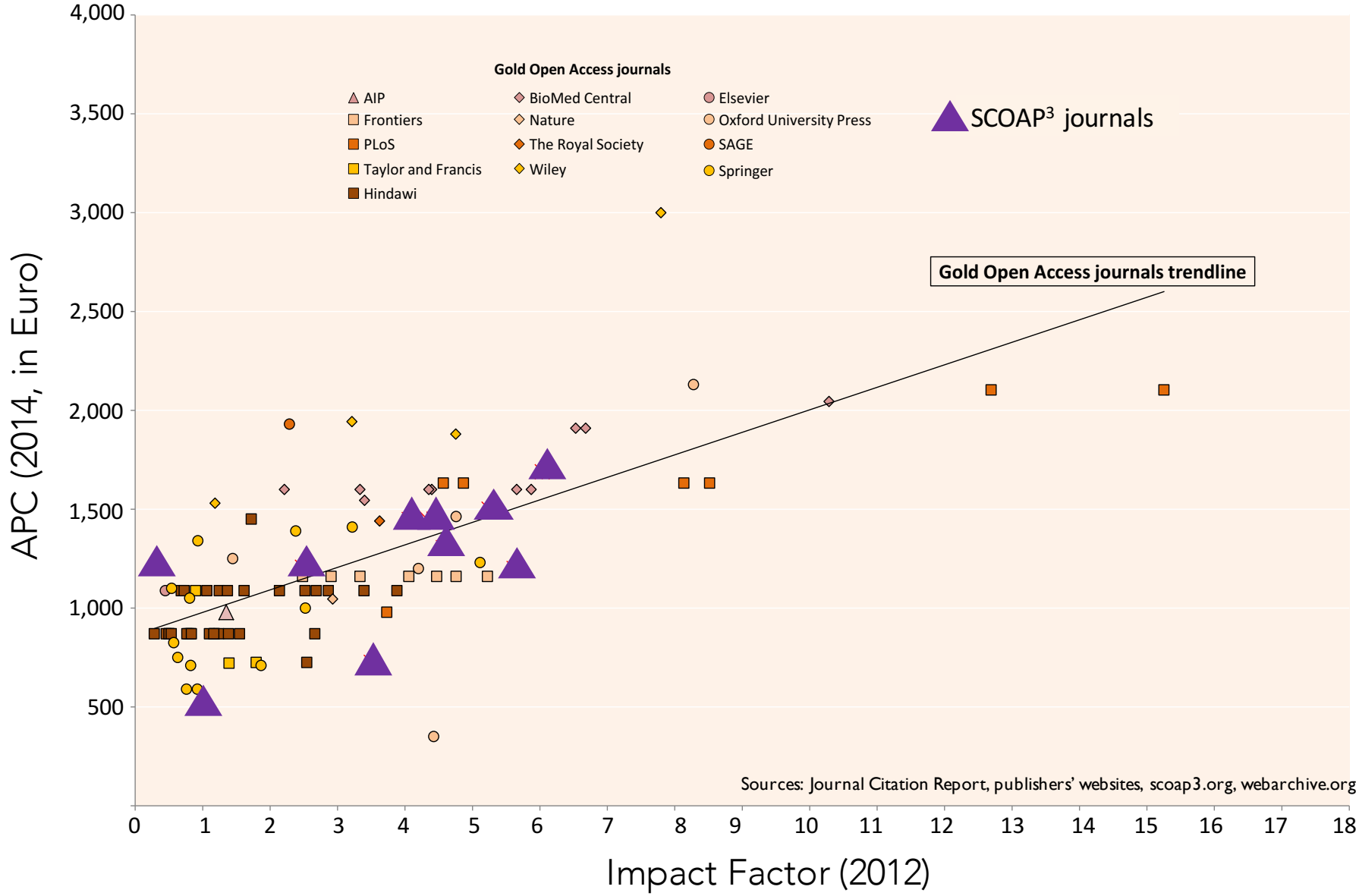
Journal	Price	Volume	Contract	Expenditure
Journal K	$ 2,000	1,100	$ 2.2mn	€ 1.8mn
Journal A	$ 1,500	2,000	$ 3.0mn	€ 4.2mn
Journal Z	£ 1,800	800	£ 1.4mn	€ 5.9mn
Journal F	€ 4,000	300	€ 1.2mn	€ 7.1mn
Journal L	€ 2,000	700	€ 1.4mn	€ 8.5mn
Journal R	€ 1,800	650	€ 1.2mn	€ 9.7mn
Journal Q	£ 3,000	90	£ 0.3mn	€ 10.0mn
Journal P	$ 800	120		
Journal W	£ 5,000	100		
…	…	…		

Fictive numbers for explanation only!

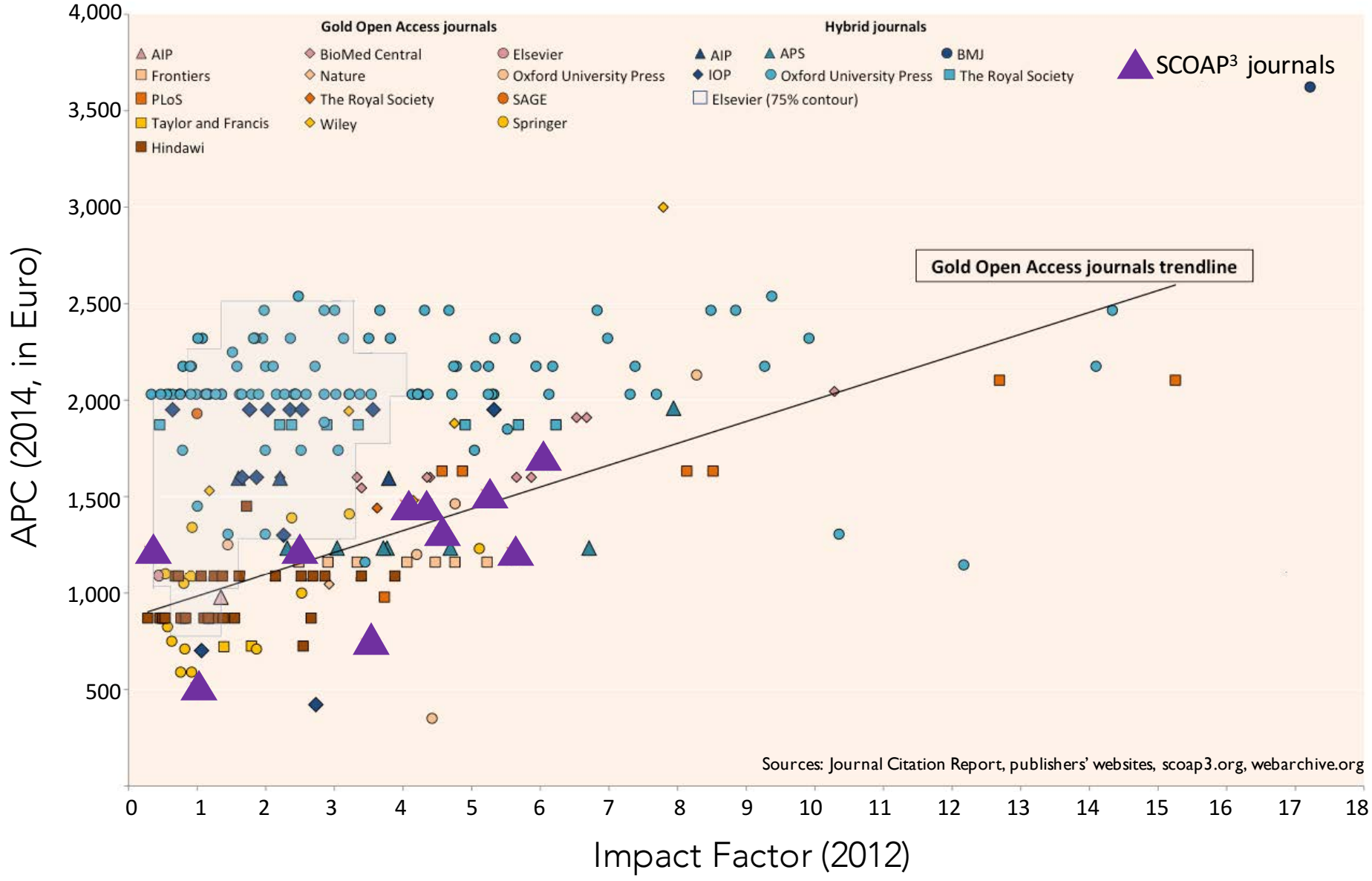
Publisher	Journal	APC
ELSEVIER	Nuclear Physics B	$ 2'000
ELSEVIER	Physics Letters B	$ 1'800
Hindawi	Advances in High Energy Physics	$ 1'000
IOP Publishing	Chinese Physics C	£ 1'000
IOP Publishing	Journal of Cosmology & Astroparticle Physics	£ 1'400
IOP Publishing	New Journal of Physics	£ 1'200
Jagiellonian University in Krakow	Acta Physica Polonica B	€ 500
Oxford University Press	Progress of Theoretical and Experimental Physics	£ 1'000
Springer	European Physical Journal C	€ 1'500
Springer	Journal of High Energy Physics	€ 1'200

Average effective APC 2014: € 1'042

(SCOAP^3 pays maximum = 2011 #articles, rest free)



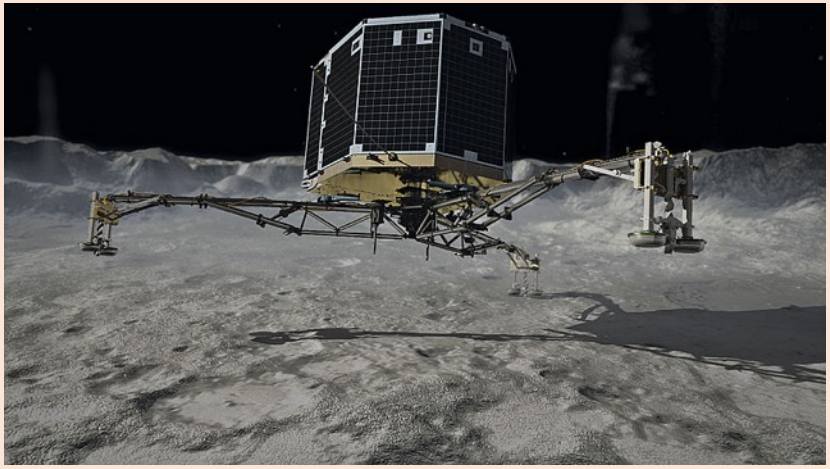
C. Romeu *et al.* (2014) *The SCOAP3 initiative and the Open Access - Article-Processing-Charge market: global partnership and competition improve value in the dissemination of science* DOI: 10.2314/CERN/C26P.W9DT



C. Romeu *et al.* (2014) *The SCOAP3 initiative and the Open Access - Article-Processing-Charge market: global partnership and competition improve value in the dissemination of science* DOI: 10.2314/CERN/C26P.W9DT

2014

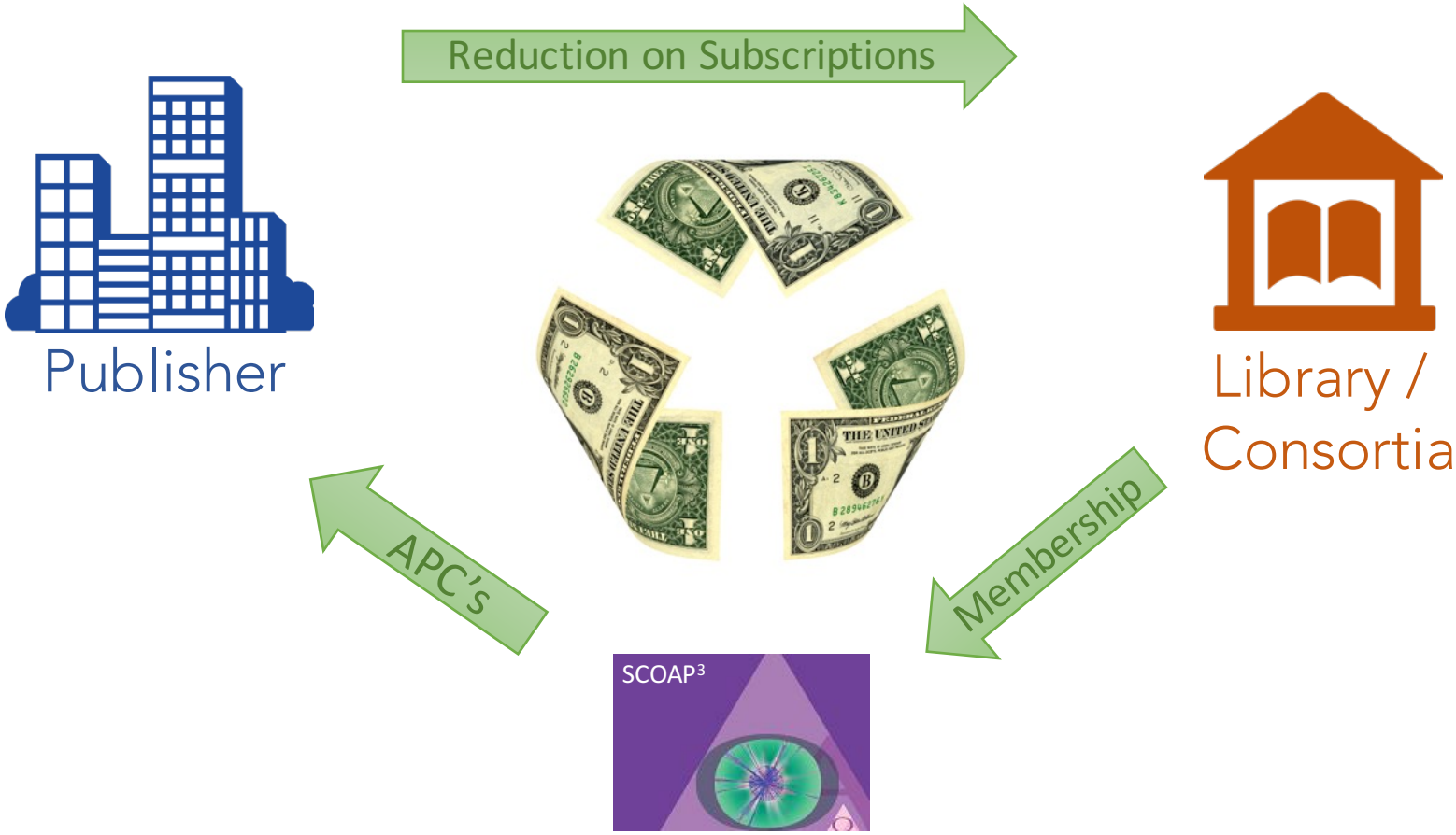
Germany wins the soccer world cup



Philae lands on a comet

Start of SCOAP^3

The SCOAP^3 Business Model



The SCOAP³ Business Model

Reads and Writes

Writes

Reads

Researcher

- No change in behavior
- Retains the copyright
- No costs, no administration

Publisher

Reduction on Subscriptions

Library / Consortia

Open Access

APC's

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- Support OA strategies mostly without fresh money (reusing funds)
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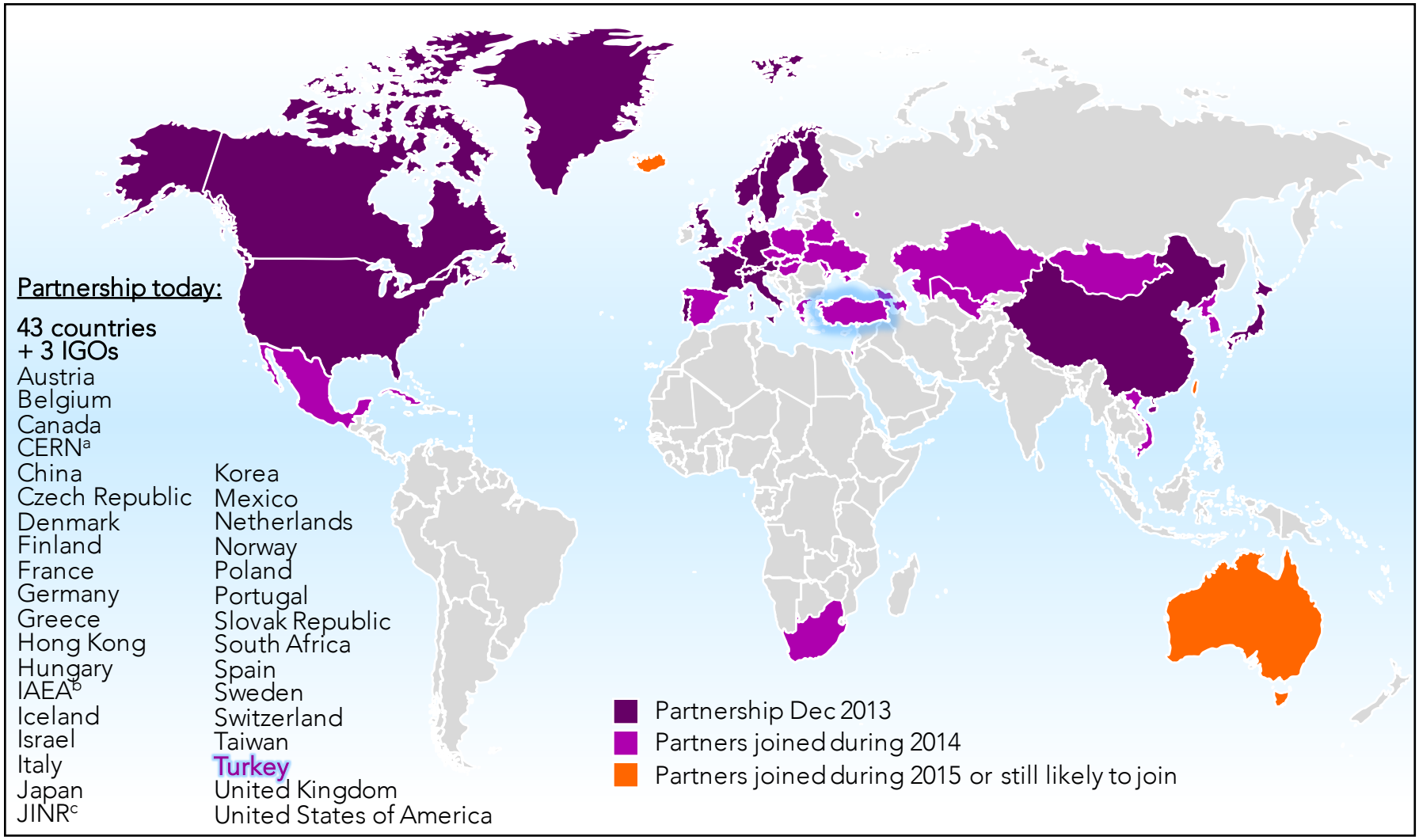
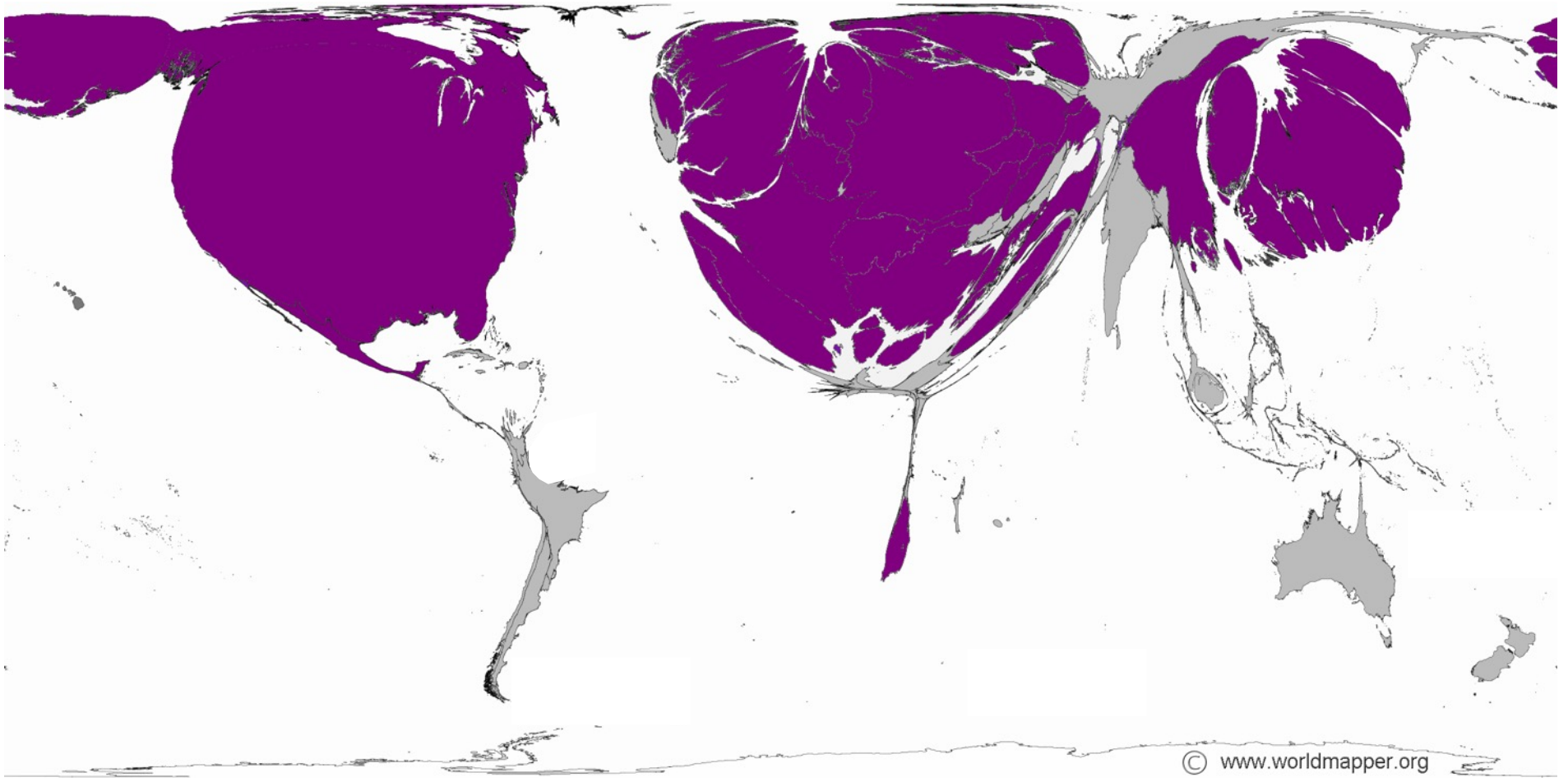
~3,000 libraries, funding agencies and research institutions



a) European Organization for Nuclear Research, Geneva
b) International Atomic Energy Agency, Vienna
c) Joint Institute for Nuclear Research, Dubna representing 12 of its member states

Research intensive countries and SCOAP[3]



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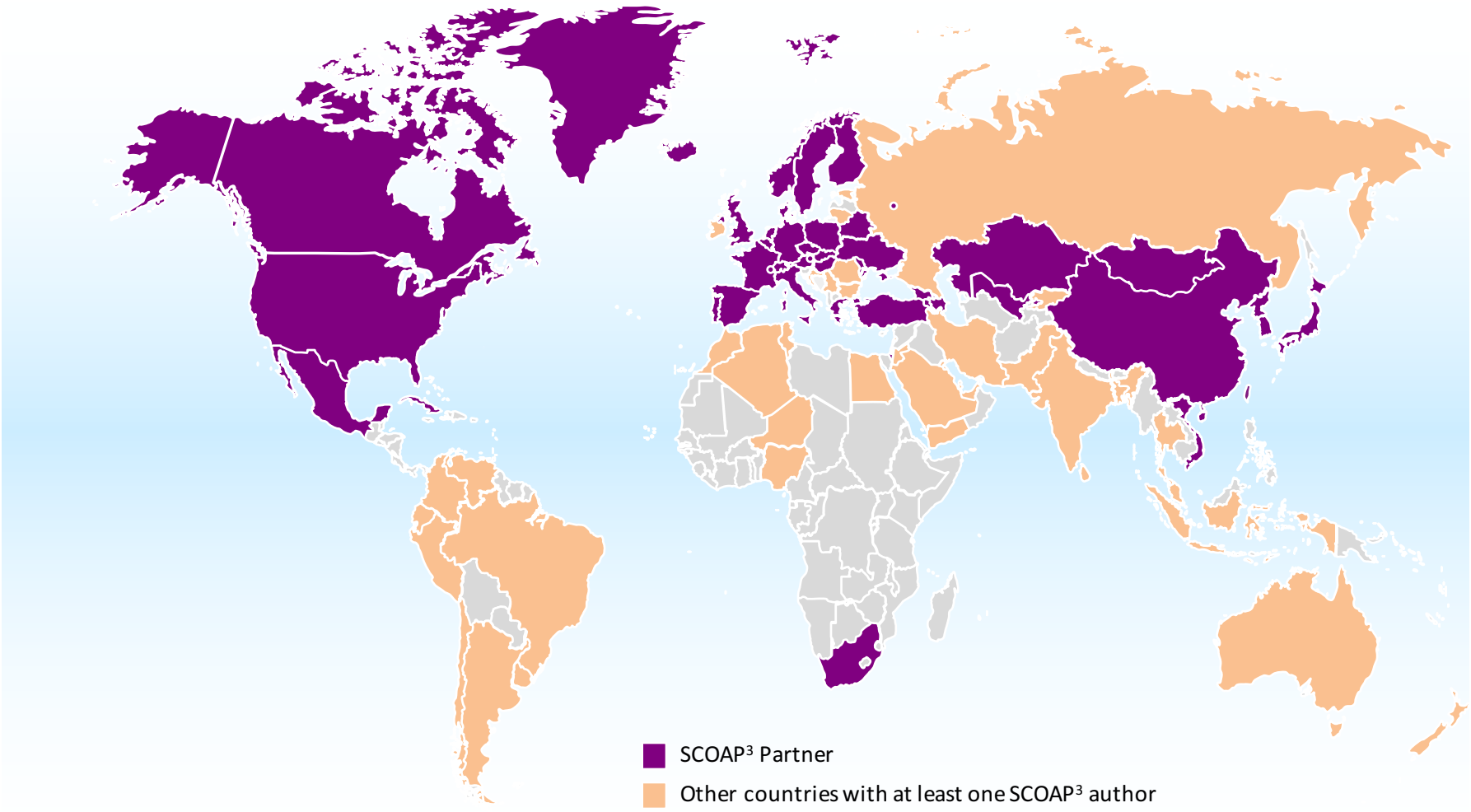
Publisher	Journal	articles
ELSEVIER	Nuclear Physics B	615
ELSEVIER	Physics Letters B	1'628
Hindawi	Advances in High Energy Physics	318
IOP Publishing	Chinese Physics C	44
IOP Publishing	Journal of Cosmology & Astroparticle Physics	403
DPG	New Journal of Physics	15
Jagiellonian University in Krakow	Acta Physica Polonica B	33
Oxford University Press / JPS	Progress of Theoretical & Experimental Physics	139
Springer	European Physical Journal C	1'014
Springer	Journal of High Energy Physics	3'723

Articles as of October 15th 2015: 7'932

incl. articles with at least one Turkish author: 413



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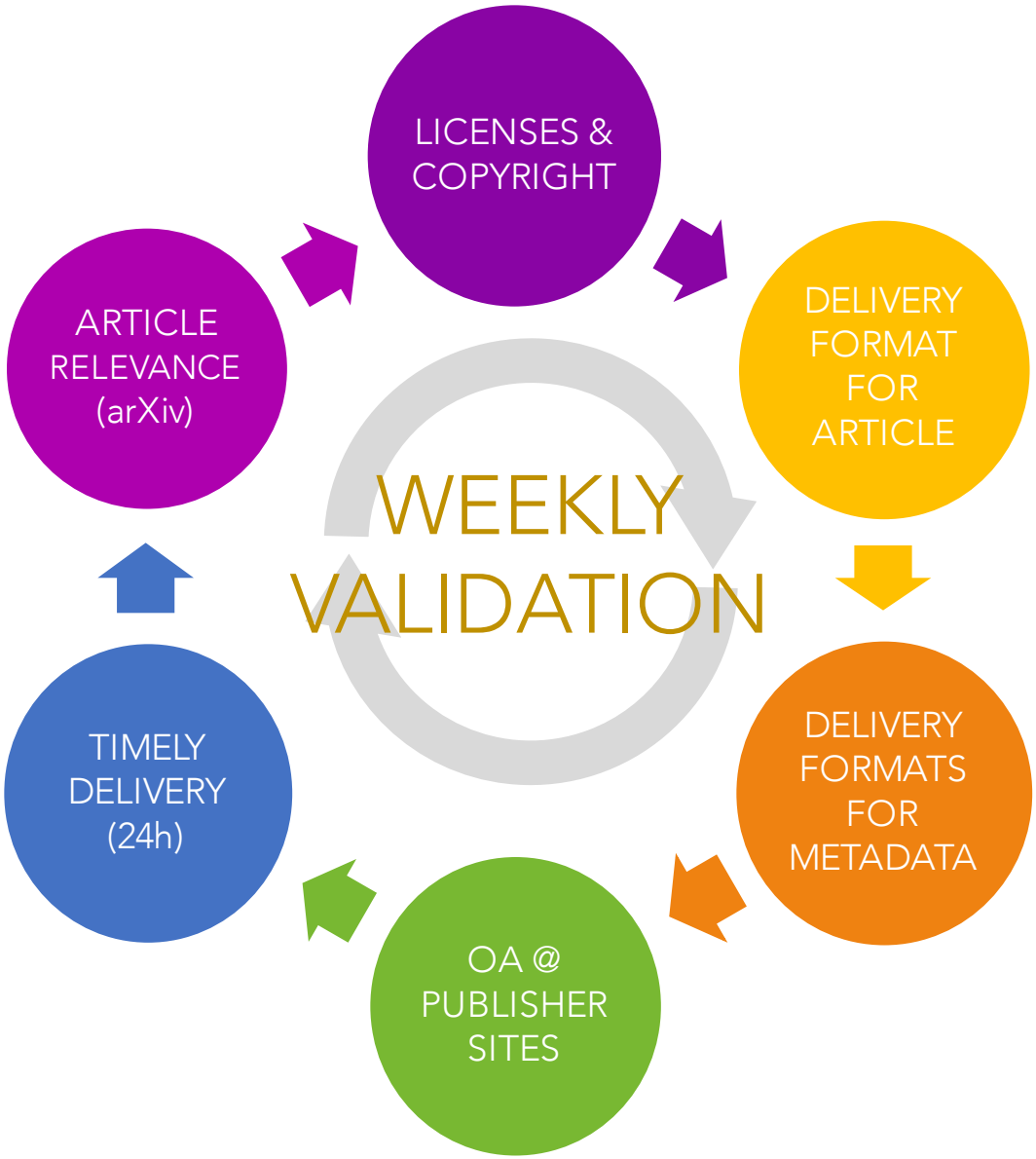

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Article compliance is not a given

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3 MAR, 2015

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tags: Data, Journals, Open Access, Open data, policy, Publishing, Robert Kiley

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Total number of papers with full text in Europe PMC, and CC-BY licence	1565	61%

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Total number of articles which could be found (via Google and a DOI/title search) but are not in Europe PMC	325	97%
Of those 325 papers we could find:		
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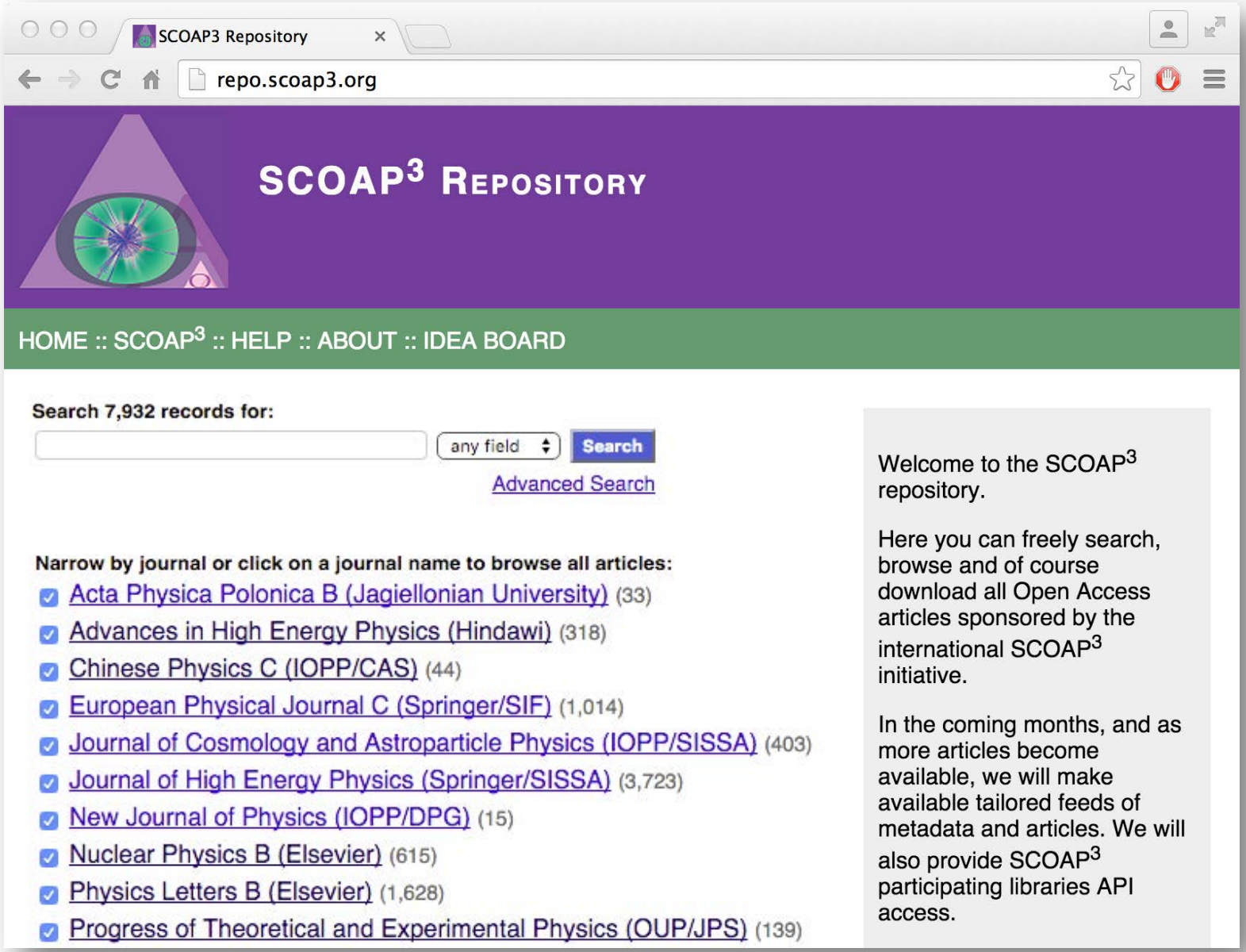
Not OA on the publisher site	17	5%
Of those 308 papers which are OA on the publisher site:		
Early View/Ahead of Print	71	23%
Final published version	237	77%

5% not even OA on publisher site

Publisher	Journal	articles
ELSEVIER	Nuclear Physics B	615
ELSEVIER	Physics Letters B	1'628
Hindawi	Advances in High Energy Physics	318
IOP Publishing	Chinese Physics C	44
IOP Publishing	Journal of Cosmology & Astroparticle Physics	403
DPG	New Journal of Physics	15
Jagiellonian University in Krakow	Acta Physica Polonica B	33
Oxford University Press / JPS	Progress of Theoretical & Experimental Physics	139
Springer	European Physical Journal C	1'014
Springer	Journal of High Energy Physics	3'723

Articles as of October 15th 2015: 7'932

incl. articles with at least one Turkish author: 413



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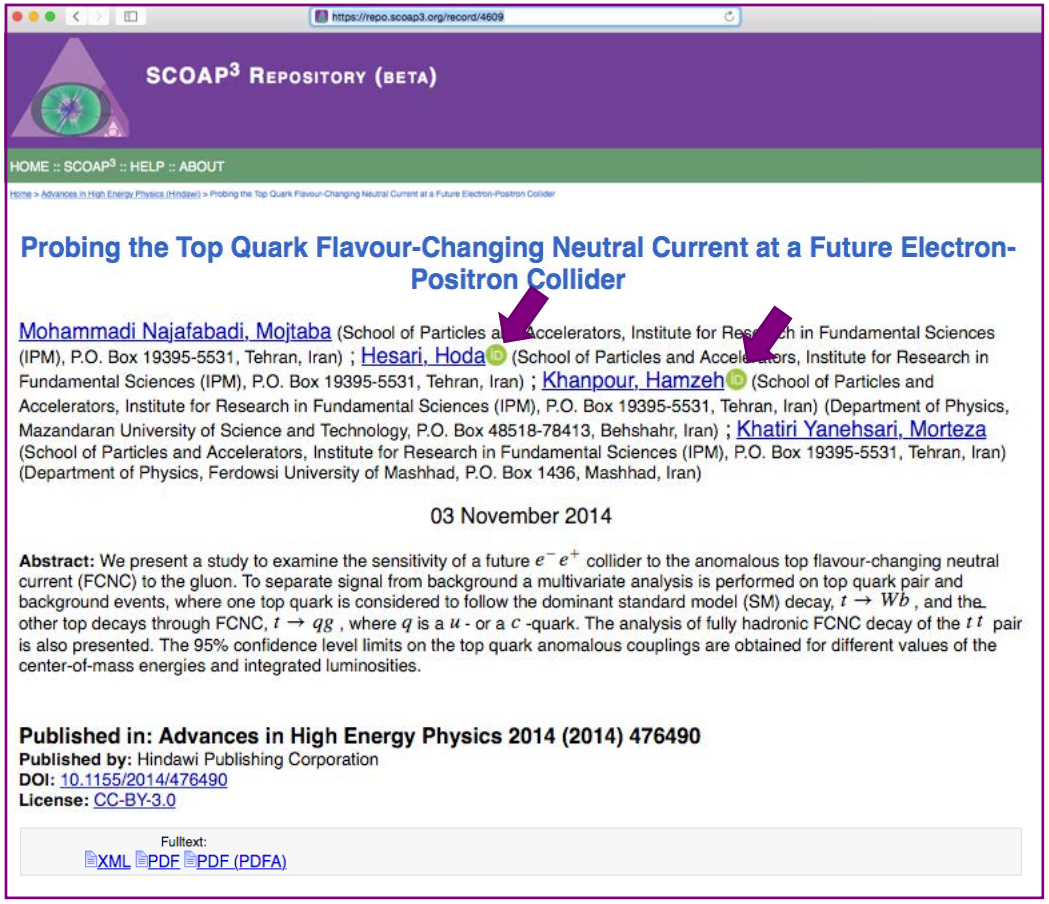
"ORCIDS have to be sent to SCOAP^3 when they are available"

Tender Specification



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Home > Advances in High Energy Physics (Hindawi) > Probing the Top Quark Flavour-Changing Neutral Current at a Future Electron-Positron Collider

Probing the Top Quark Flavour-Changing Neutral Current at a Future Electron-Positron Collider

Mohammadi Najafabadi, Mojtaba (School of Particles a[illegible]Accelerators, Institute for Res[illegible]ch in Fundamental Sciences (IPM), P.O. Box 19395-5531, Tehran, Iran) ; Hesari, Hoda (School of Particles and Accel[illegible]tors, Institute for Research in Fundamental Sciences (IPM), P.O. Box 19395-5531, Tehran, Iran) ; Khanpour, Hamzeh (School of Particles and Accelerators, Institute for Research in Fundamental Sciences (IPM), P.O. Box 19395-5531, Tehran, Iran) (Department of Physics, Mazandaran University of Science and Technology, P.O. Box 48518-78413, Behshahr, Iran) ; Khatiri Yanehsari, Morteza (School of Particles and Accelerators, Institute for Research in Fundamental Sciences (IPM), P.O. Box 19395-5531, Tehran, Iran) (Department of Physics, Ferdowsi University of Mashhad, P.O. Box 1436, Mashhad, Iran)

03 November 2014

Abstract: We present a study to examine the sensitivity of a future $e^- e^+$ collider to the anomalous top flavour-changing neutral current (FCNC) to the gluon. To separate signal from background a multivariate analysis is performed on top quark pair and background events, where one top quark is considered to follow the dominant standard model (SM) decay, $t \to Wb$, and the other top decays through FCNC, $t \to qg$, where q is a u - or a c -quark. The analysis of fully hadronic FCNC decay of the tt pair is also presented. The 95% confidence level limits on the top quark anomalous couplings are obtained for different values of the center-of-mass energies and integrated luminosities.

Published in: Advances in High Energy Physics 2014 (2014) 476490
Published by: Hindawi Publishing Corporation
DOI: 10.1155/2014/476490
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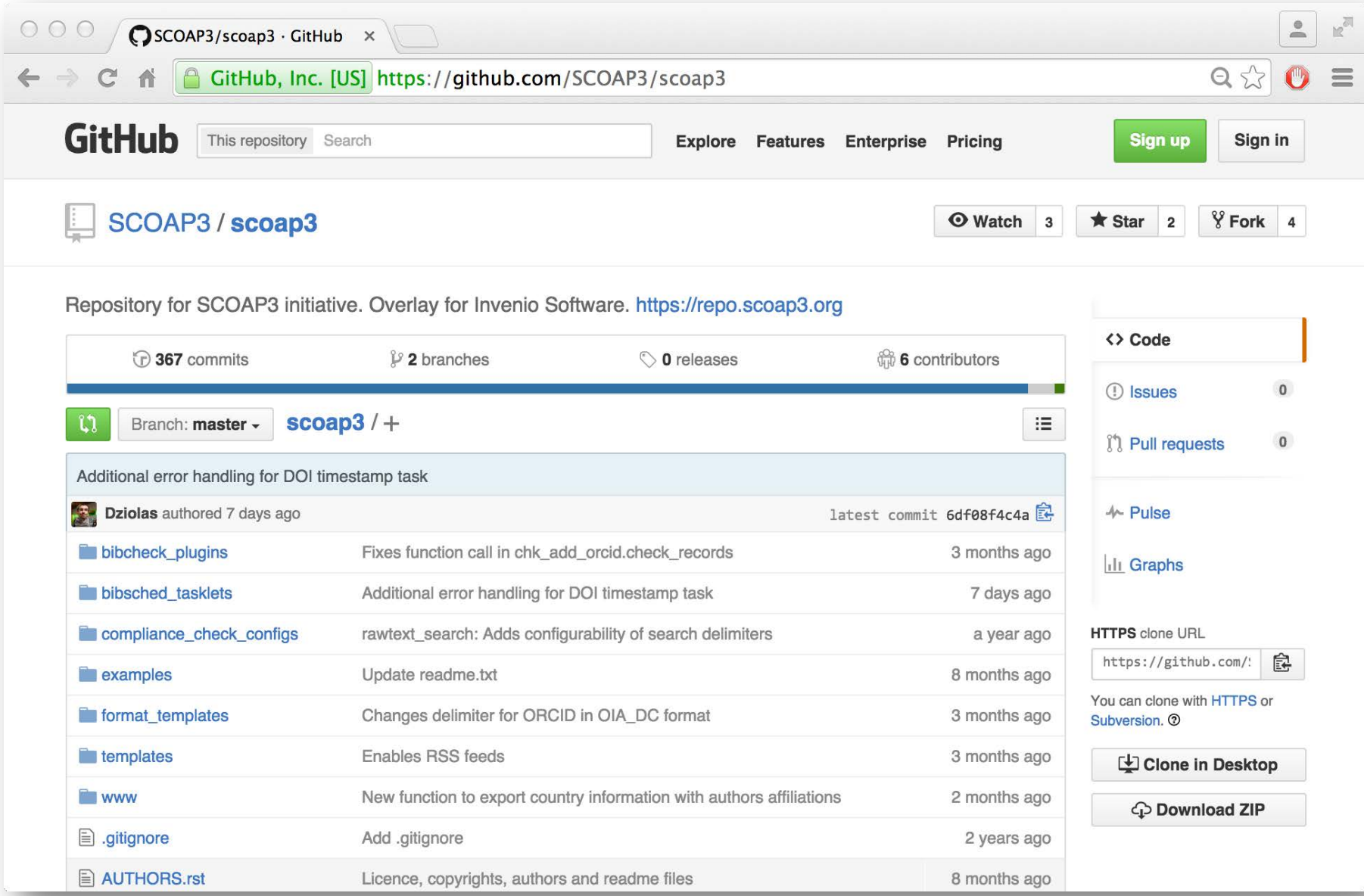
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367 commits 2 branches 0 releases 6 contributors
Branch: master scoap3 / +
Additional error handling for DOI timestamp task
Dziolas authored 7 days ago latest commit 6df08f4c4a
bibcheck_plugins Fixes function call in chk_add_orcid.check_records 3 months ago
bibsched_tasklets Additional error handling for DOI timestamp task 7 days ago
compliance_check_configs rawtext_search: Adds configurability of search delimiters a year ago
examples Update readme.txt 8 months ago
format_templates Changes delimiter for ORCID in OIA_DC format 3 months ago
templates Enables RSS feeds 3 months ago
www New function to export country information with authors affiliations 2 months ago
.gitignore Add .gitignore 2 years ago
AUTHORS.rst Licence, copyrights, authors and readme files 8 months ago
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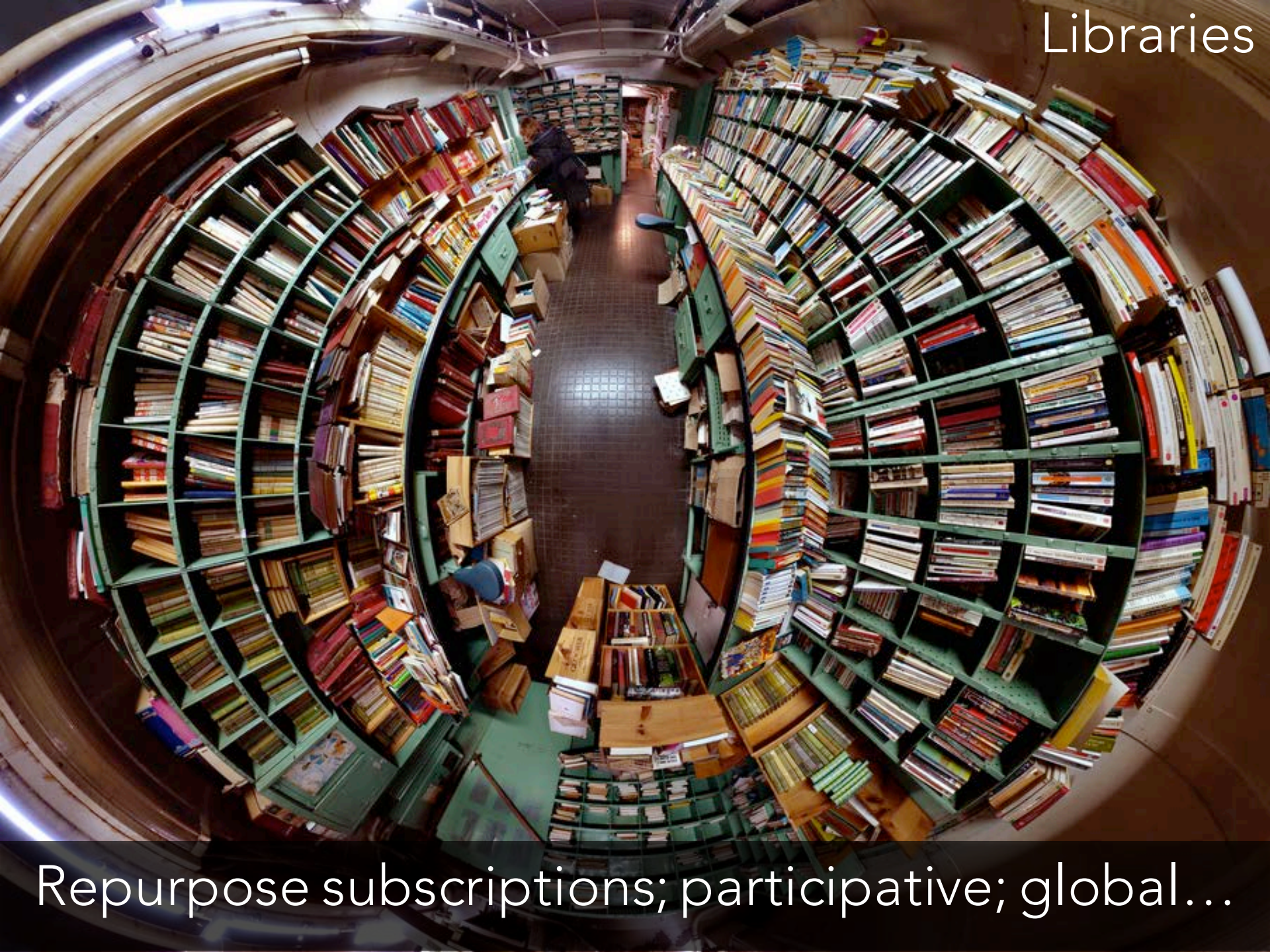
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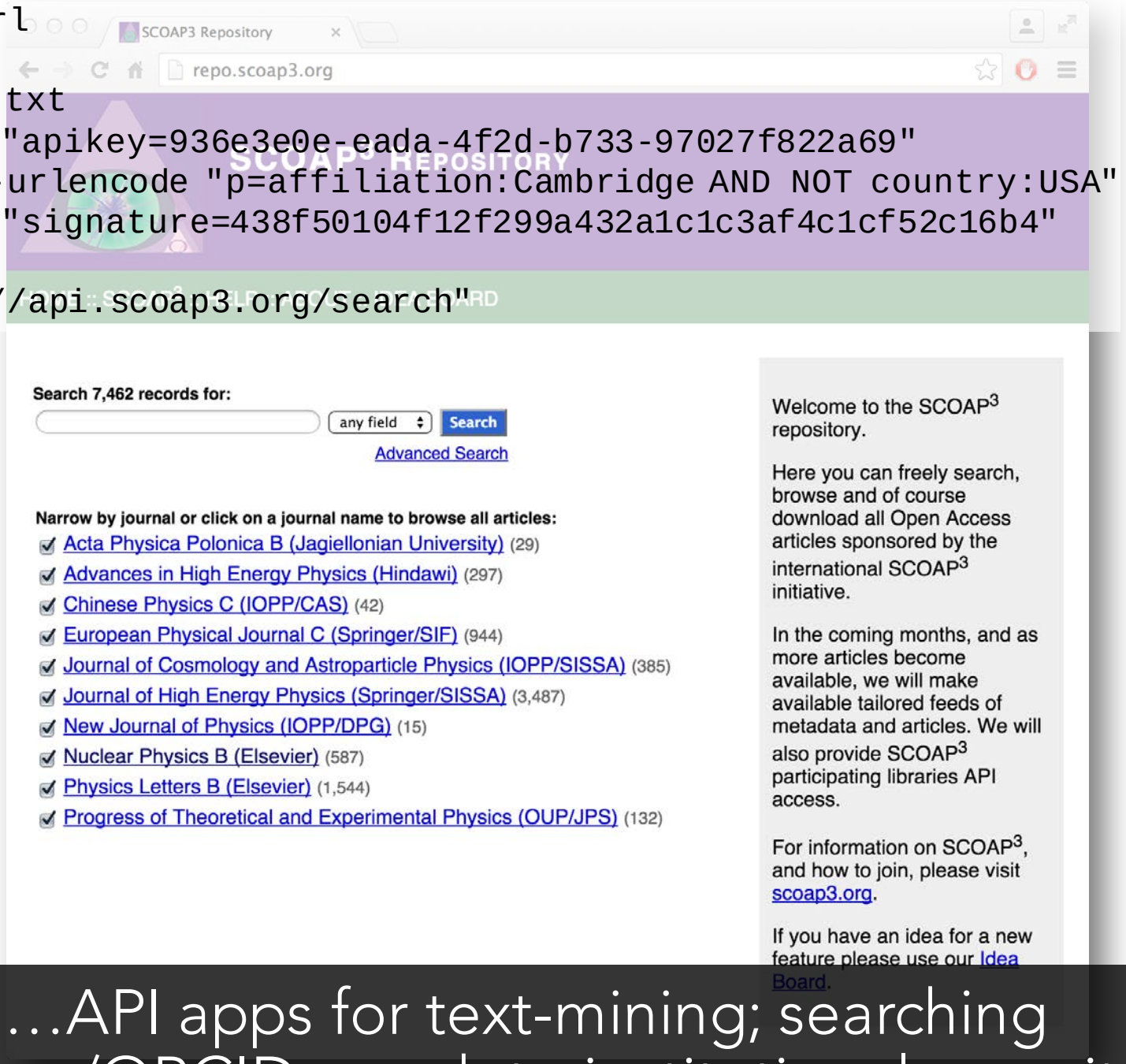
```
user:~$ curl
    -G
    -o out.txt
    --data "apikey=936e3e0e-eada-4f2d-b733-97027f822a69"
    --data-urlencode "p=affiliation:Cambridge AND NOT country:USA"
    --data "signature=438f50104f12f299a432a1c1c3af4c1cf52c16b4"
    -v
    "http://api.scoap3.org/search"
```



…API apps for text-mining; searching affiliations/ORCIDs; push to institutional repositories

Funding Agencies

Good value for money; low overheads; co-authorship; global

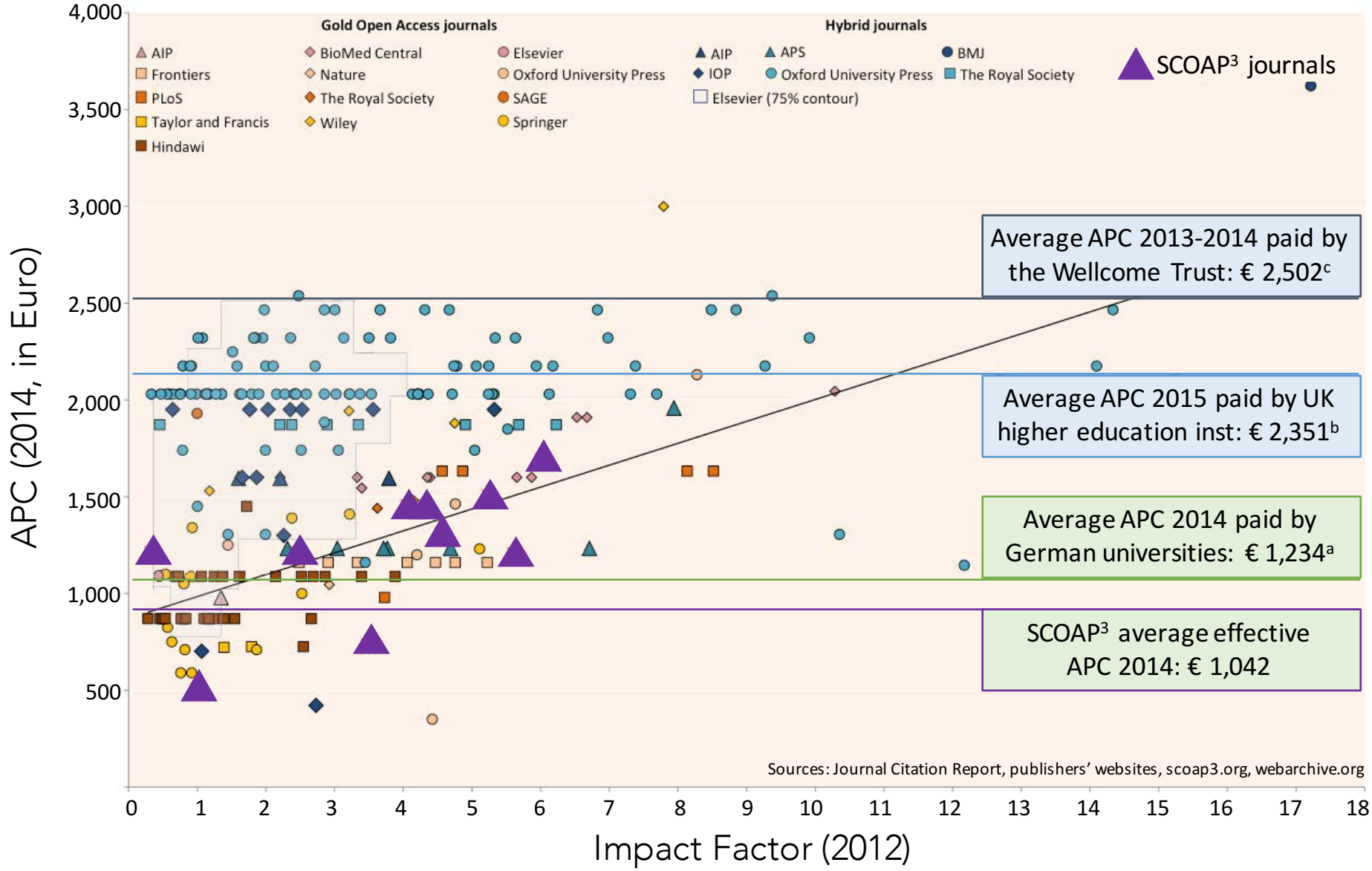


Chart: C. Romeu *et al.* (2014) *The SCOAP3 initiative and the Open Access - Article-Processing-Charge market: global partnership and competition improve value in the dissemination of science* DOI: 10.2314/CERN/C26P.W9DT

a) https://github.com/OpenAPC/openapc-de;
b) http://figshare.com/articles/2015_Jan_June_UK_APC_data_combined/1509860
c) http://blog.wellcome.ac.uk/2015/03/03/the-reckoning-an-analysis-of-wellcome-trust-open-access-spend-2013-14/

ELSEVIER

JAGIELLONIAN UNIVERSITY IN KRAKOW

Hindawi

IOP Publishing

OXFORD UNIVERSITY PRESS

JPS

DPG

Springer

11
Publishers

CERN

on behalf of
SCOAP³

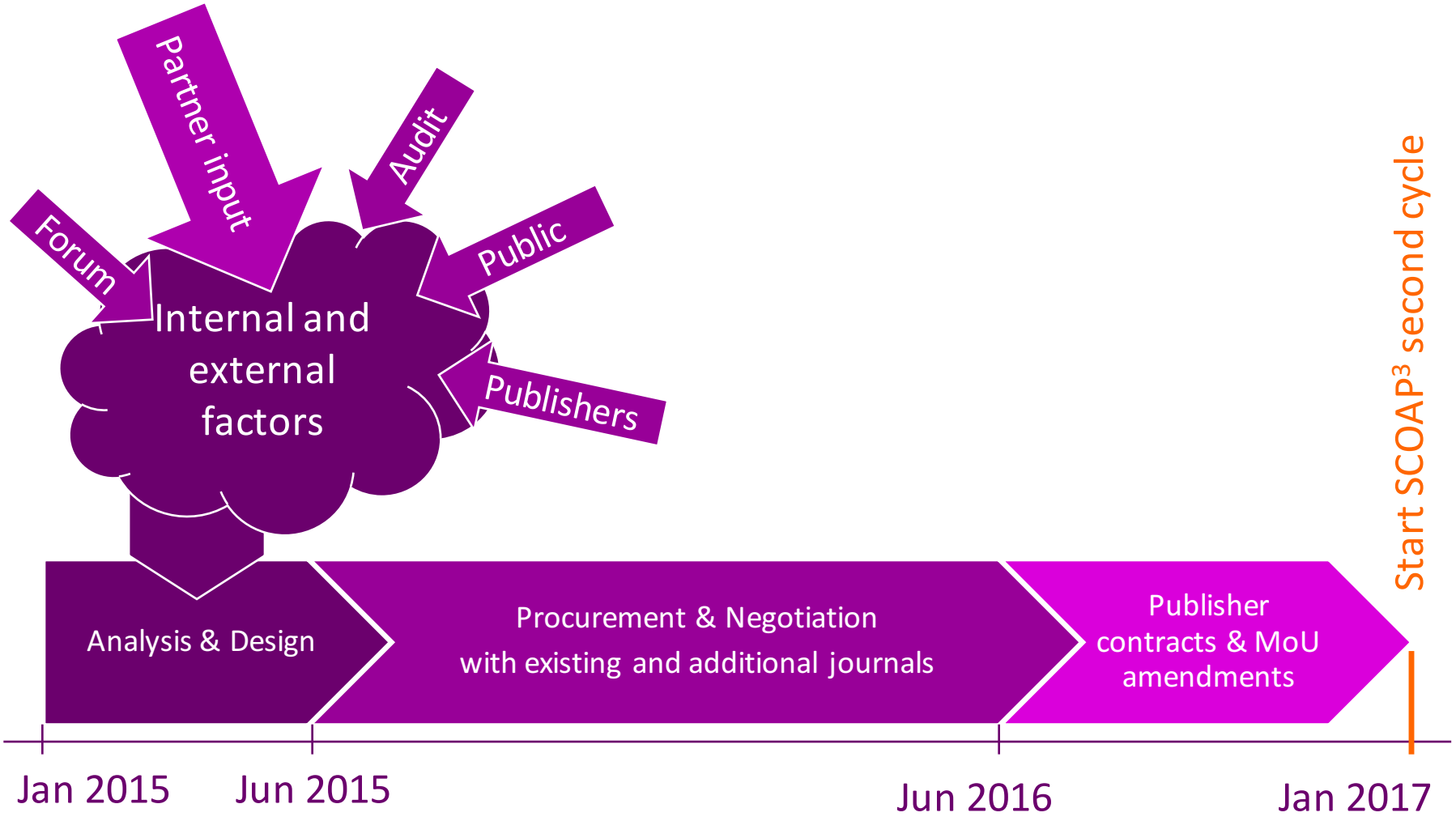
Accounting / payments
SCOAP³ Repository
Governance support
Outreach
Representation
Coordination of partners
Legal framework

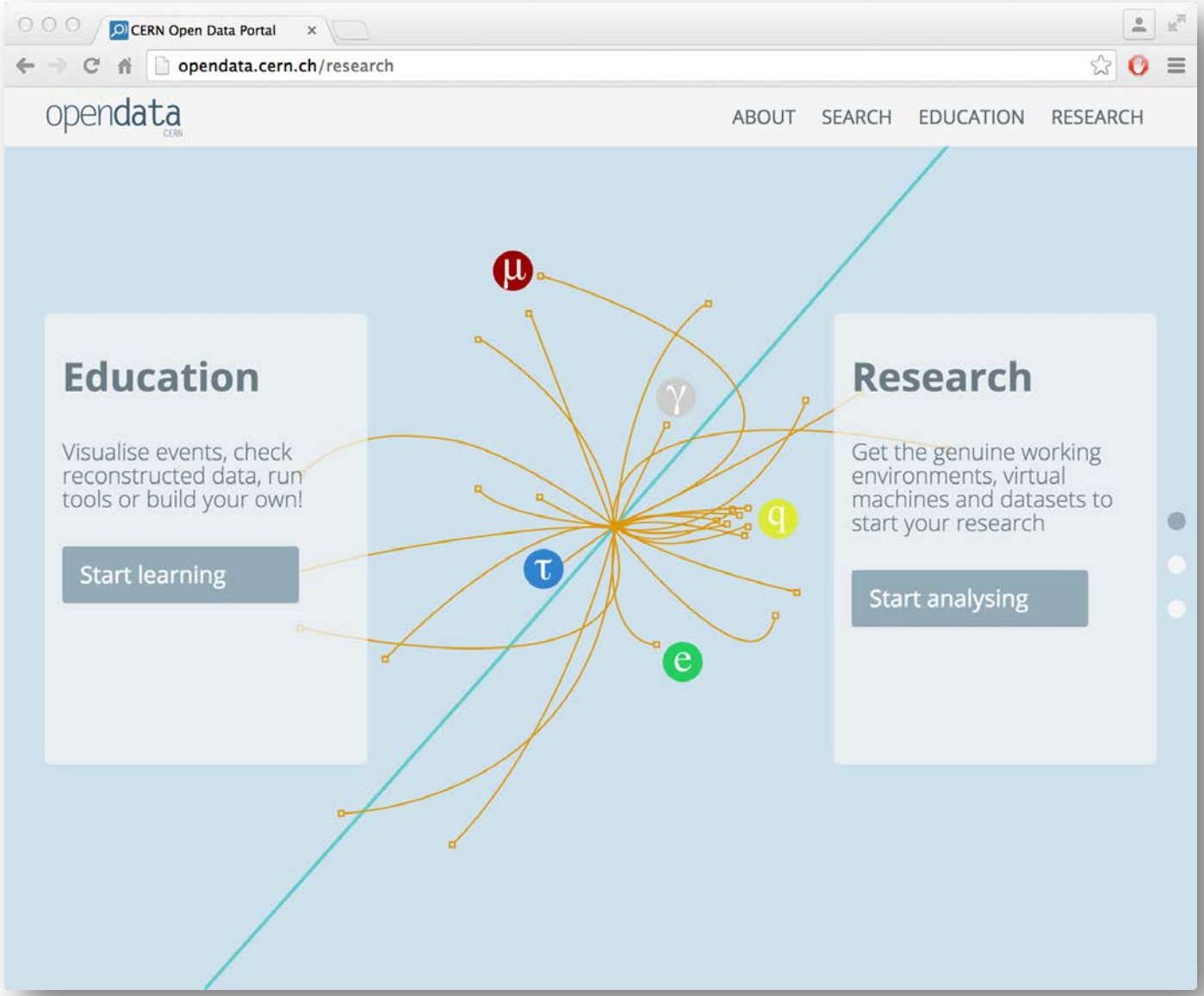
46
Countries

3'000 Libraries


Scientists
No costs; no administration; no change

Roadmap for SCOAP³ second cycle





opendata.cern.ch – moving beyond publications

Research

To analyse CMS data, a Virtual Machine with the CMS analysis environment is provided. The data can be accessed directly through the VM. In the primary datasets, no selection nor identification criteria have been applied. For this release, no simulated Monte Carlo datasets are provided.

Explore CMS >

According to the ALICE data preservation strategy, reconstructed data and Monte Carlo data as well as the analysis software and documentation needed to process them will be made available on a time scale of 5 years (for 10% of the data). Thus, the first release of ALICE research data will happen in 2018.

According to the ATLAS Data Access Policy, reconstructed data and accompanying tools will be released after reasonable embargo periods.

According to the LHCb External Data Access Po
and accompanying tools will be released after r
periods.

For research purposes, specific software environments and tools need to be deployed to analyse these complex primary data. In addition to the data below, you will find instructions for setting up your working environments here

Install your Virtual Machine >

Education

The CMS (Compact Muon Solenoid) experiment is one of two large general-purpose detectors built on the Large Hadron Collider (LHC). Its goal is to investigate a wide range of physics such as the characteristics of the Higgs boson, extra dimensions or dark matter.

Explore CMS >

ALICE (A Large Ion Collider Experiment) is a heavy-ion detector designed to study the physics of strongly interacting matter at extreme energy densities, where a phase of matter called quark-gluon plasma forms. More than 1000 scientists are part of the collaboration.

Explore ALICE >

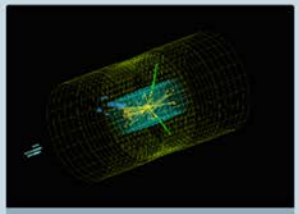
The ATLAS (A Toroidal LHC ApparatuS) experiment is a general purpose detector exploring topics like the properties of the Higgs-like particle, extra dimensions of space, unification of fundamental forces, and evidence for dark matter candidates in the Universe.

Explore ATLAS >

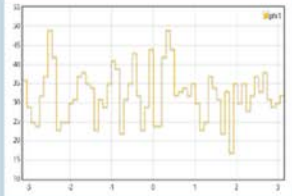
The LHCb (Large Hadron Collider beauty) experiment aims to record the decay of particles containing b and anti-b quarks, known as B mesons. The detector is designed to gather information about the identity, trajectory, momentum and energy of each particle.

Explore LHCb >

For education purposes, the complex primary data need to be processed into a format (examples below) that is good for simple applications. Get in touch if you wish to build your own applications similar to those shown here



Visualise events >

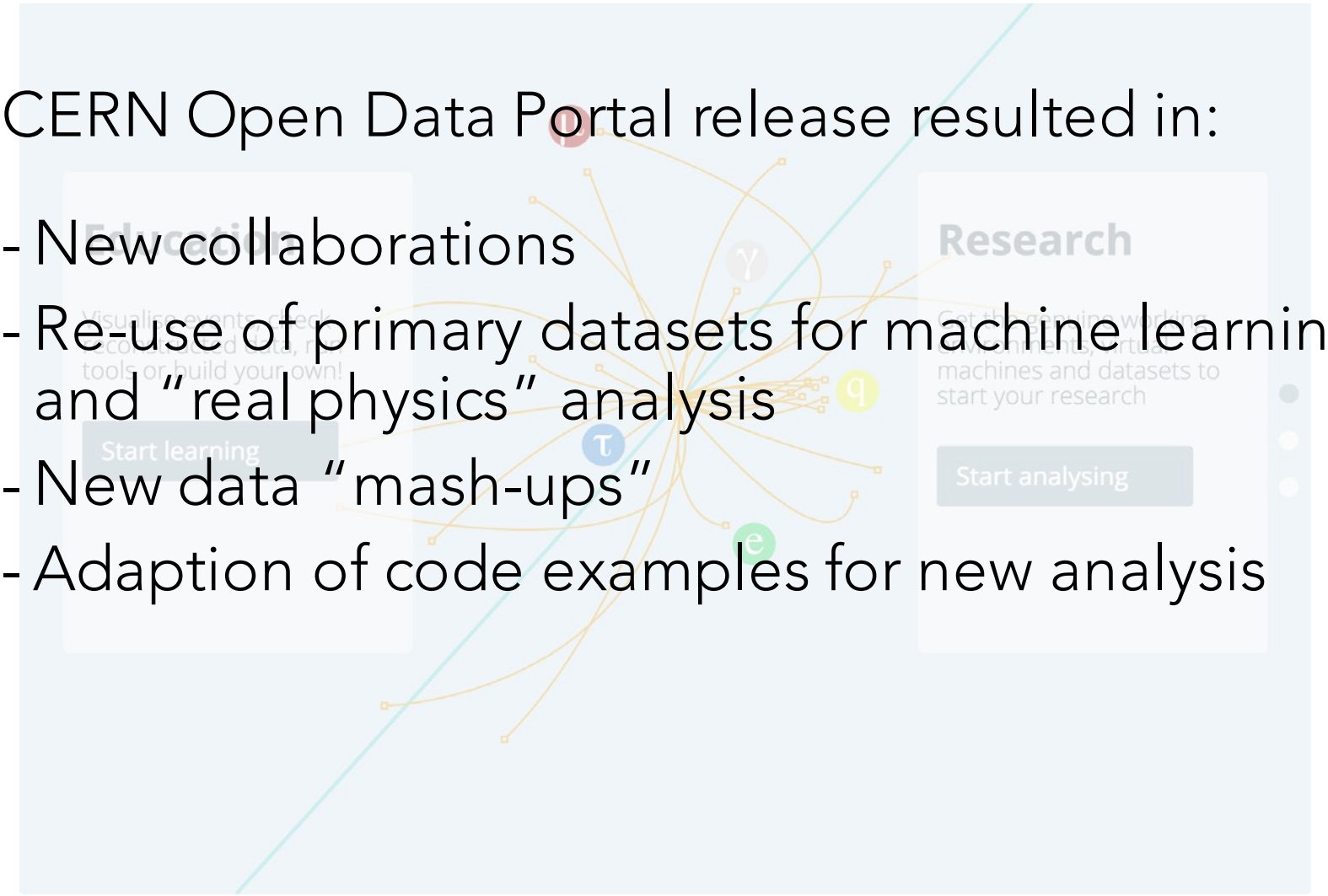


Visualise histograms >

Learning Resources >

CERN Open Data Portal release resulted in:

- New collaborations
- Re-use of primary datasets for machine learning and "real physics" analysis
- New data "mash-ups"
- Adaption of code examples for new analysis



- ✓ Evolved from CERN/HEP collaborative model
- ✓ Result of a long journey
- ✓ Lowest APCs in the market for established high-quality journals
- ✓ Reuse of subscription money
- ✓ 100% compliance, nimble operation, easy administration for partners
- ✓ Based on global consensus building via participative governance
- ✓ Supported by Open Science initiatives

Target

arXiv: HEP

Path

CERN procurement

Funding

shared, re-direction