



Connecting Research  
and Researchers

# Identifiers for OA

**4<sup>th</sup> National Open Access Workshop,  
Ankara, 19 October 2015**

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Why do we  
need **IDs**?





# Names are Messy

# Name Ambiguity Is a Problem

- Shared names
- Different versions (full name vs. initials)
- Transliteration
- Accents and other ALT characters
- Name changes
- Multiple family names



**Ted Hart** @DistribEcology

31s

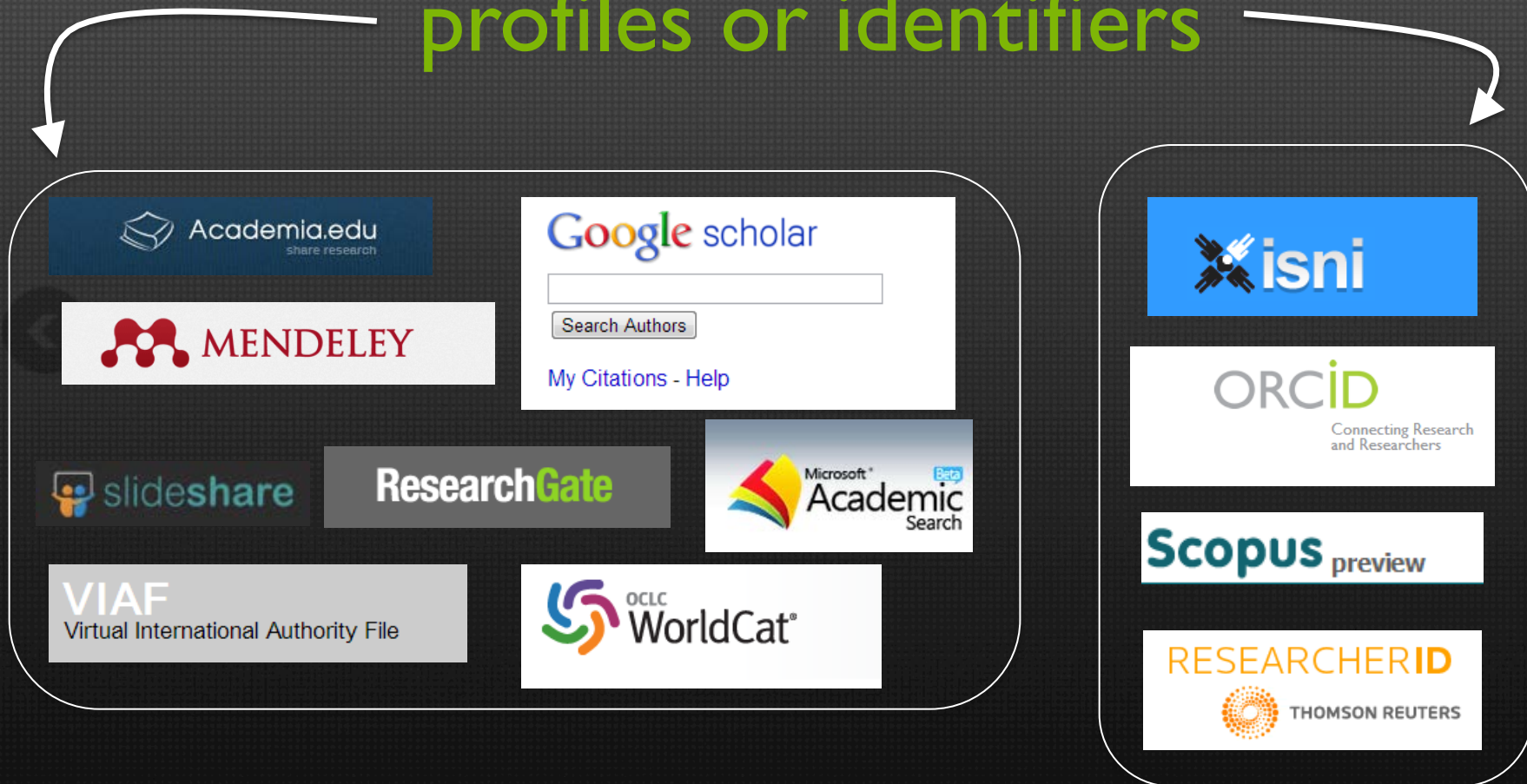
An easy case for just using an ORCID  
as my name is T. Hart, E. Hart and E.  
M. Hart on publications I've  
discovered.

王伟  
王薇  
王维  
王蔚  
汪卫  
汪玮  
汪威  
汪巍



# Identity is complicated

One researcher may have **many**  
**profiles or identifiers**



ORCID provides a **persistent digital identifier** that distinguishes each researcher from all other researchers

ORCID iDs are used in research workflows, like manuscript submission, to **create links between people and their professional activities**



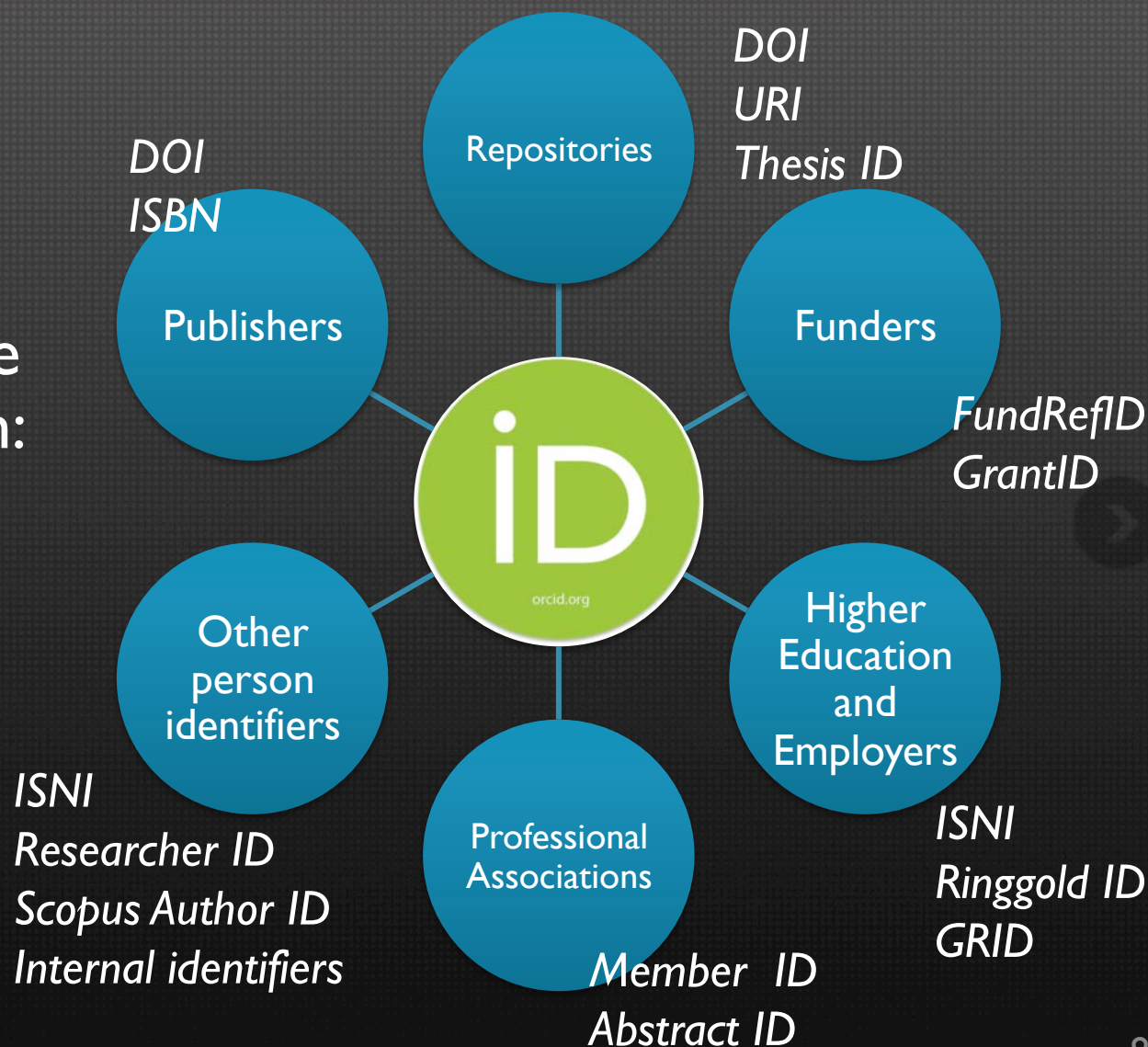
ORCID ID	First name	Last name	Other names
0000-0001-5109-3700	Laurel	Haak	L. L. Haak, L Haak, Laure Haak, Laurela L Hāka

- **Free, non-proprietary registry** of persistent unique public identifiers for researchers
- **Community-led** initiative supported by member fees
- **Open** data, software, APIs, and documentation
- ORCID is **Interdisciplinary** and **International**

## ORCID is a hub

With **other identifiers**,  
ORCID enables  
machine-readable  
connections with:

- works
- organizations
- person IDs





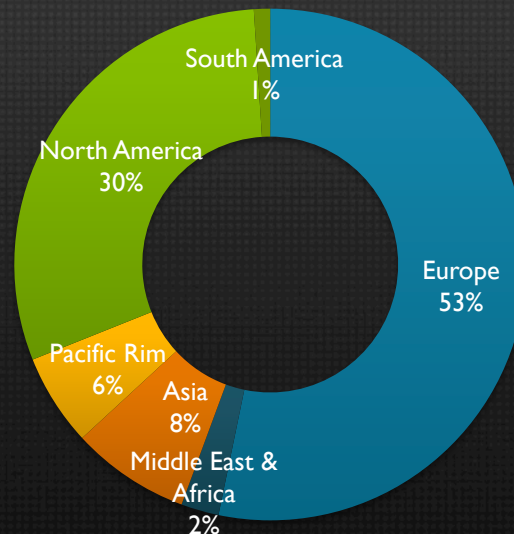
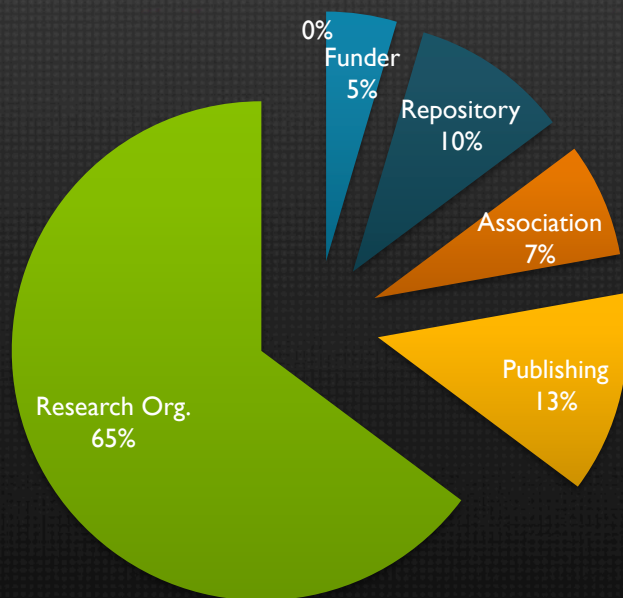
# Who uses ORCID?

- 1.7m live ORCID iDs
  - Associated with 4.3m+ DOIs
  - 285k+ linked to works
  - 341k+ linked to education
  - 327k+ linked to employment



- 400 organizations are members
- 150 members with live integrations
  - 30+ more in development

## Members and integrations across the entire global research community





# National implementations



- Improved author database information
  - Deduplication of records
  - Unambiguous links to other databases
- Accurate attribution of publications and more
  - Peer review
- Simplifies submission process
  - CrossRef and DataCite auto-update
  - Single sign-on for m/s submission systems



- Improved member information
  - Deduplication of records
  - Unambiguous links across all society databases
  - Better understanding of member activities
- And many of the same benefits as publishers

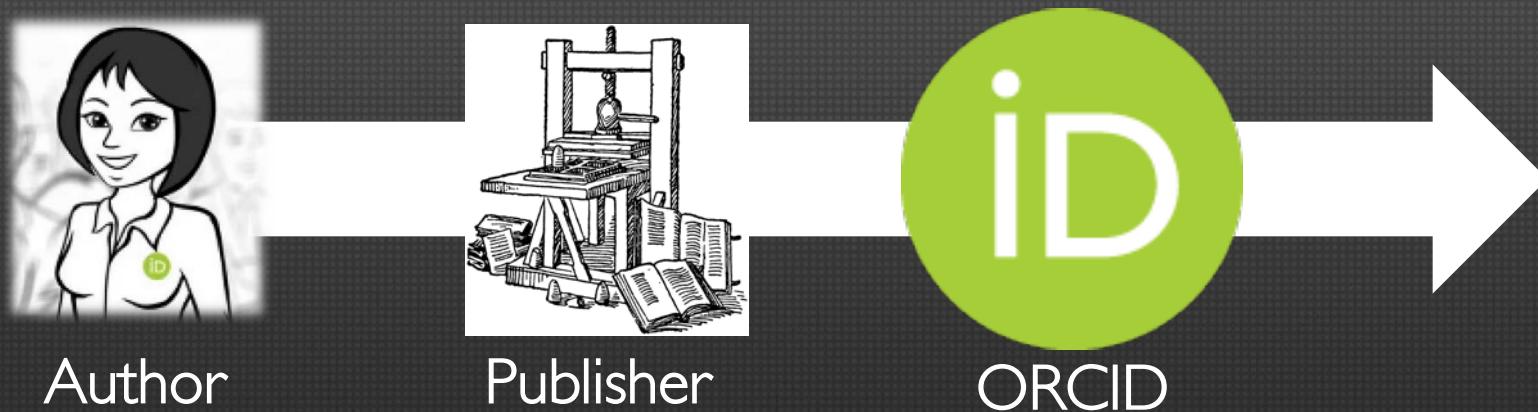
# How can IDs help OA?



# There are many useful IDs



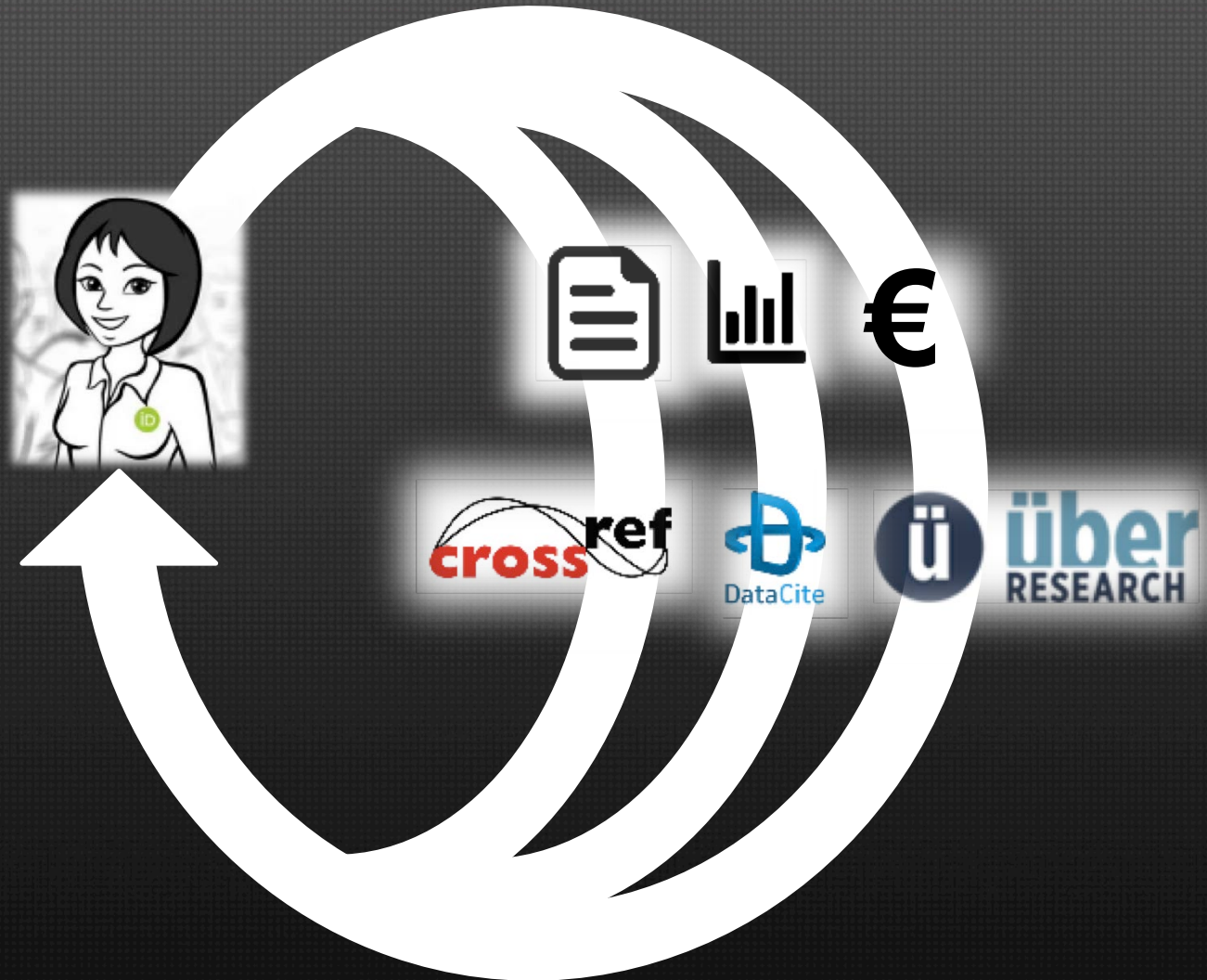
# Notifications via ORCID



Updates could be pushed from  
publishers on **acceptance**



# Automatic updating

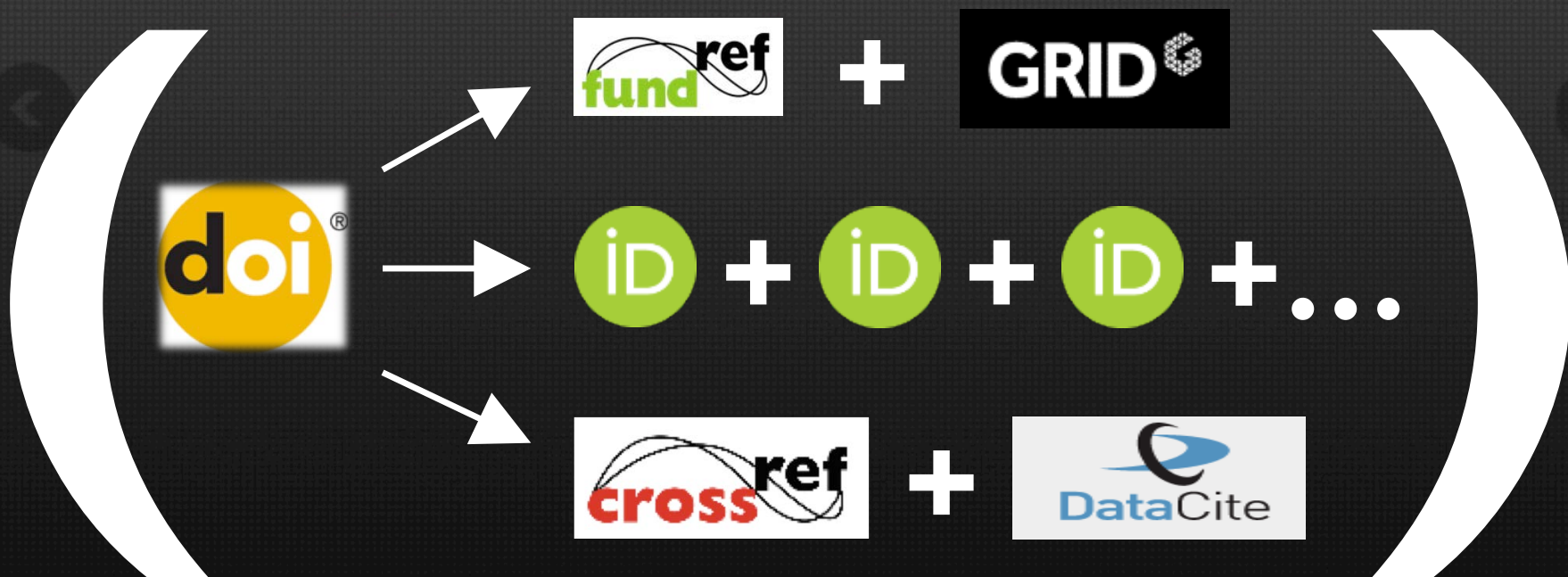


Updates are pushed from the  
ORCID registry to other systems  
(CRIS, repositories etc.) on the  
researcher's behalf

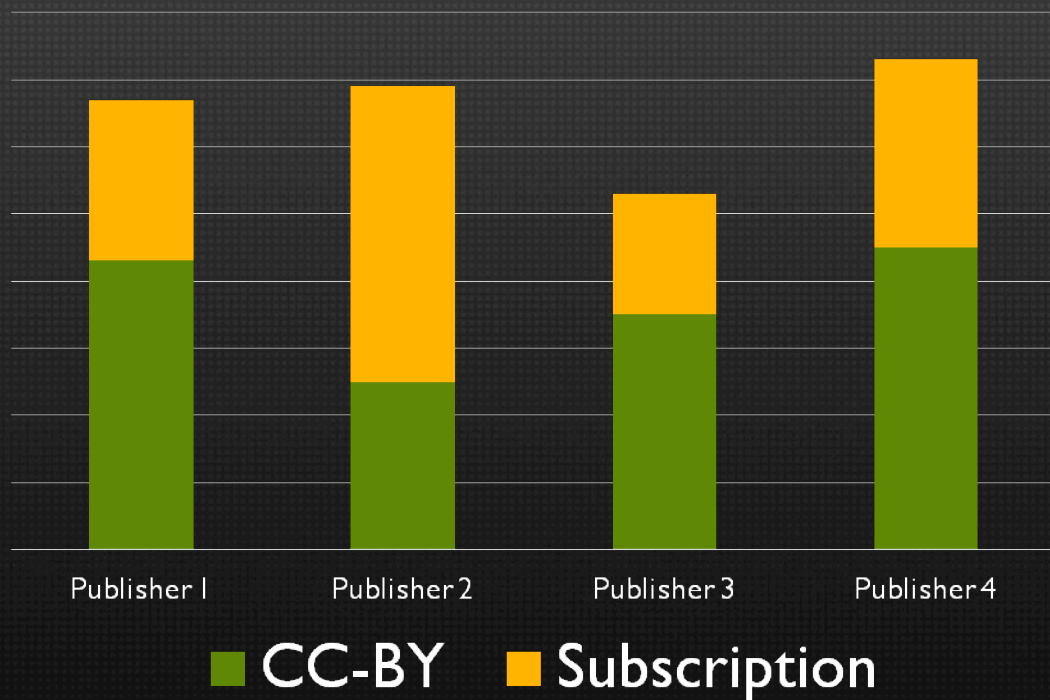
CrossRef and DataCite launching  
this week!



Projects can be described as  
groups of **IDs**



## Consortia and institutions could track **APCs vs subscriptions**





What do  
these ideas  
share?

- **High value:** They could save a lot of time and money
- **Partnership:** They require the whole research community to work together
- **Possible:** They could be implemented now



They **need**  
all of us to  
**work.**

We need  
them to  
work.



Thank you!



Any questions?



**TÜBİTAK**

**4. ULUSAL  
AÇIK ERİŞİM  
ÇALIŞTAYI**

**AE  
2015**

Teşekkürler





**TÜBİTAK**

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Alexander Kohls  
SCOAP3 İşletme Müdürü, CERN

# Evolution of Open Access in High-Energy Physics

*from green to gold...  
...to SCOAP<sup>3</sup>*

Ankara, 19<sup>th</sup> October 2015  
Alexander Kohls, CERN





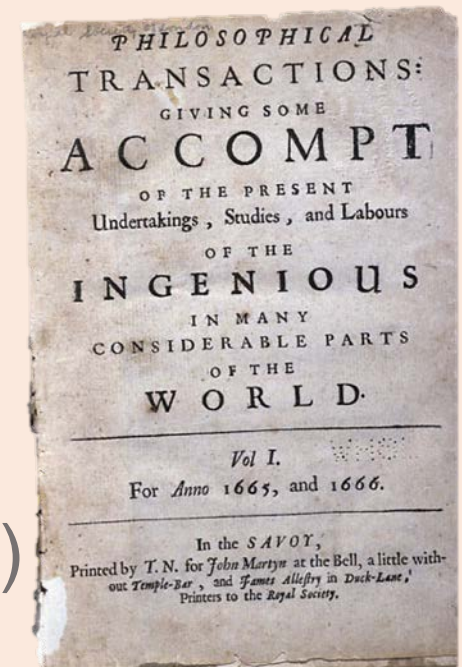
Mid 17<sup>th</sup> century

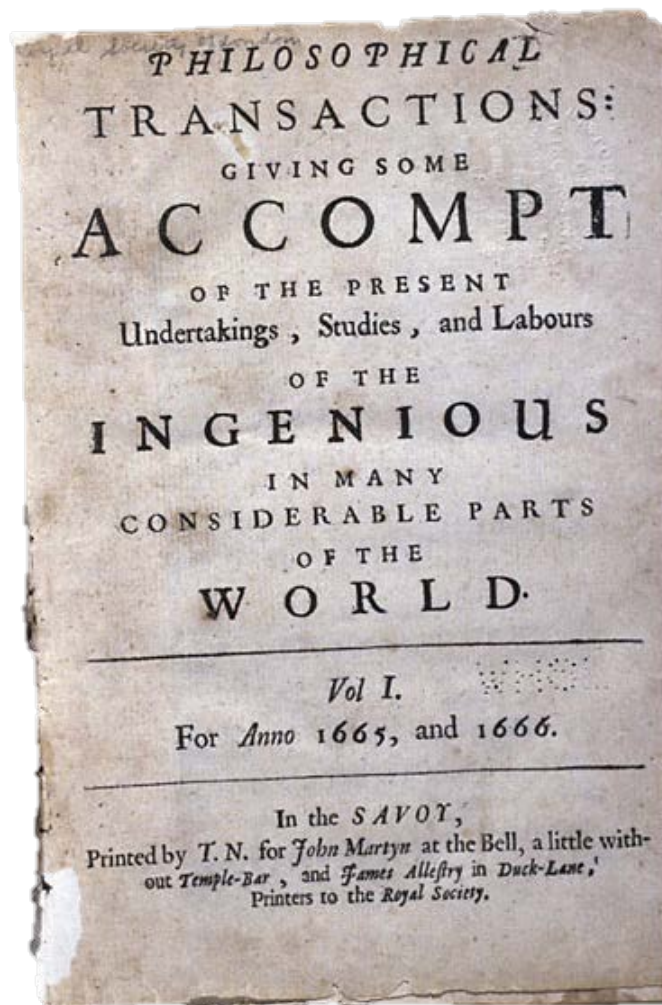
New York has 1,000  
inhabitants



Louis XIV. is  
King of France

First scientific  
Journal (1665)





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

Physics Letters B 716 (2012) 1–29

Contents lists available at SciVerse ScienceDirect

**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<sup>☆</sup>

ATLAS Collaboration<sup>\*</sup>

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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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<sup>−1</sup> collected at  $\sqrt{s} = 7$  TeV in 2011 and 5.8 fb<sup>−1</sup> at  $\sqrt{s} = 8$  TeV in 2012. Individual searches in the channels  $H \rightarrow ZZ^{(*)} \rightarrow 4\ell$ ,  $H \rightarrow \gamma\gamma$  and  $H \rightarrow 4\ell\nu\mu\nu$  in the 8 TeV data are combined with previously published results of searches for  $H \rightarrow ZZ^{(*)}$ ,  $WW^{(*)}$ ,  $b\bar{b}$  and  $\tau^+\tau^-$  in the 7 TeV data and results from improved analyses of the  $H \rightarrow ZZ^{(*)} \rightarrow 4\ell$  and  $H \rightarrow \gamma\gamma$  channels in the 7 TeV data. Clear evidence for the production of a neutral boson with a measured mass of  $126.0 \pm 0.4$  (stat)  $\pm 0.4$  (sys) GeV is presented. This observation, which has a significance of 5.9 standard deviations, corresponding to a background fluctuation probability of  $1.7 \times 10^{-7}$ , 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 115 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 ( $\sigma$ ), 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  $2.7\sigma$  for CDF [14],  $1.1\sigma$  for DØ [15] and  $2.8\sigma$  for their combination [16].

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

The data were recorded with instantaneous luminosities up to  $6.8 \times 10^{31}$  cm<sup>−2</sup>s<sup>−1</sup>; 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  $H \rightarrow ZZ^{(*)} \rightarrow 4\ell$  and  $H \rightarrow \gamma\gamma$  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  $H \rightarrow WW^{(*)} \rightarrow \ell\nu\ell\nu$  channel, the increased pile-up deteriorates the event missing transverse momentum,  $E_T^{\text{miss}}$ , 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

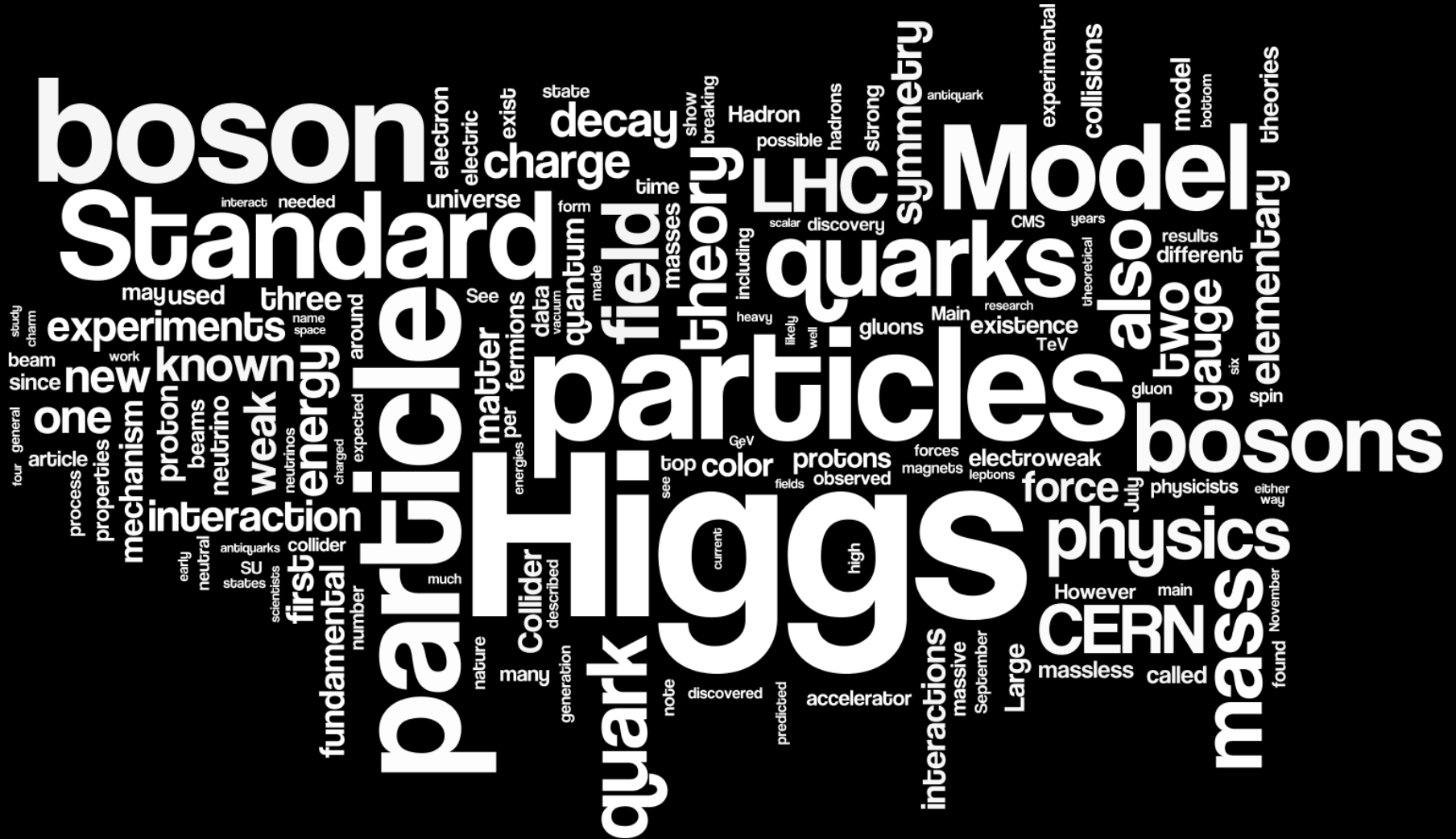
<sup>\*</sup> © CERN for the benefit of the ATLAS Collaboration.

<sup>☆</sup> E-mail address: atlas.publications@cern.ch.

<sup>†</sup> The symbol  $\ell$  stands for electron or muon.



# HEP – High Energy Physics (crawling Wikipedia)





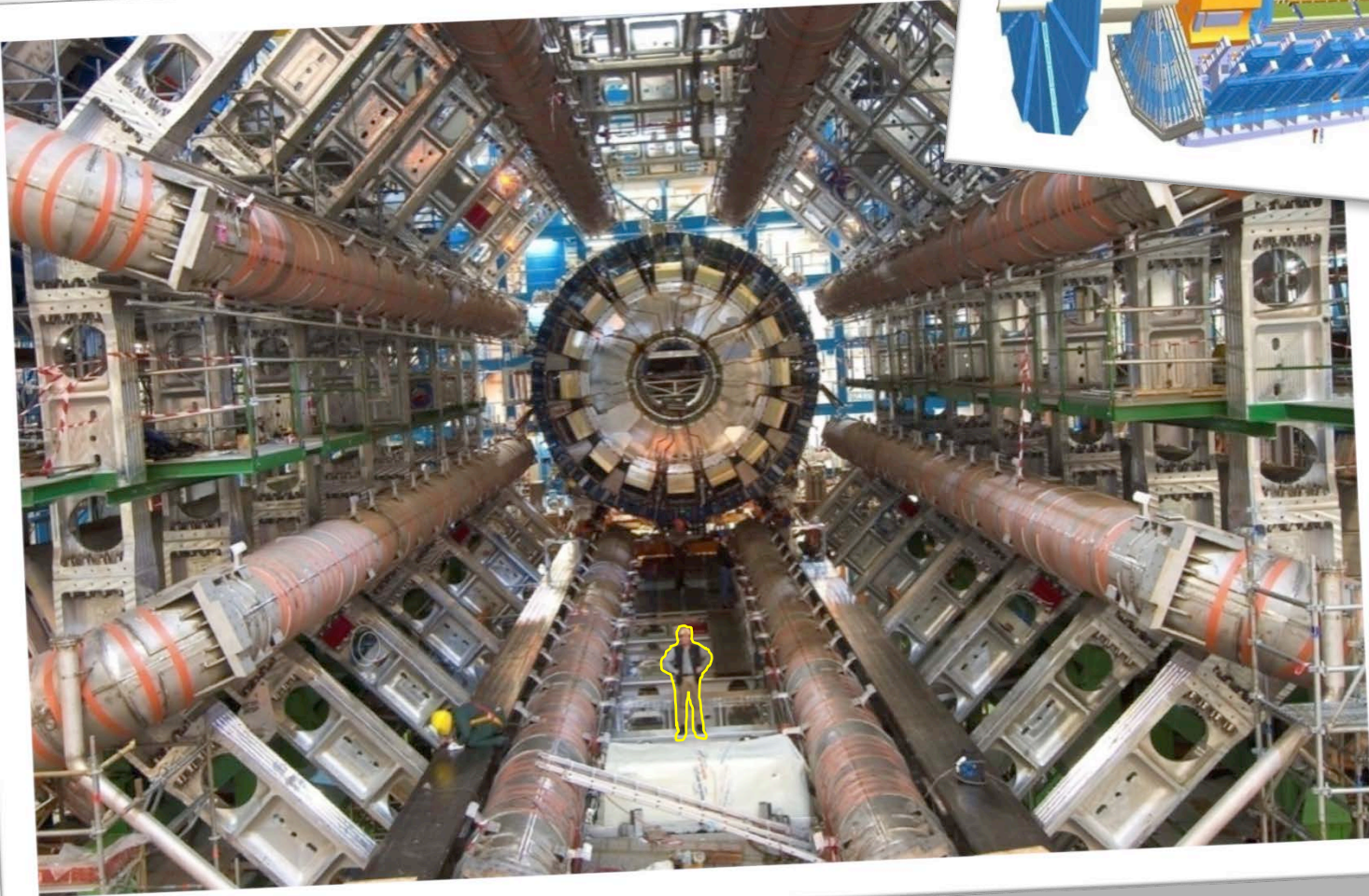
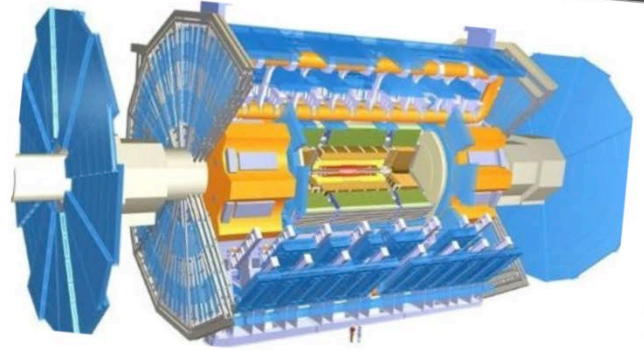
- Super cold! ( $1.9^{\circ}\text{K} = -271^{\circ}\text{C}$ )
- Super hot! (100,000x the sun)
- Super vacuum! (10x the moon)
- Super big! (27 km ring)
- Super fast! (99.9999991% light)

CERNs Large Hadron Collider



# Four Large Detectors

e.g. ATLAS (A Toroidal LHC ApparatuS)



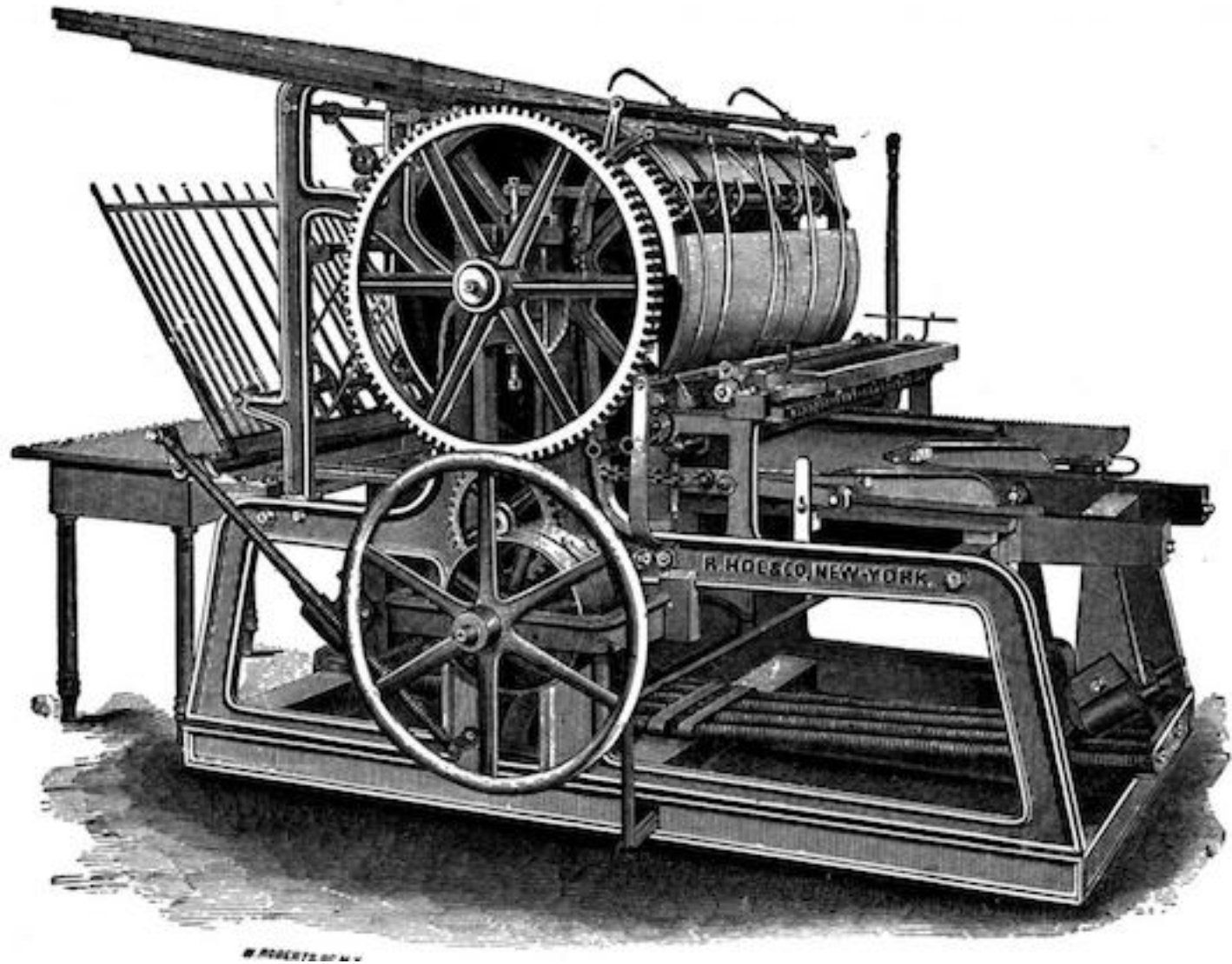
100 million “sensors”, 40 million pictures/second





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





Theories & experimental results are published



# 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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## 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<sup>−1</sup> at 7 TeV and 5.3 fb<sup>−1</sup> 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  $\sim 1$  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<sup>−1</sup> 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<sup>−1</sup> 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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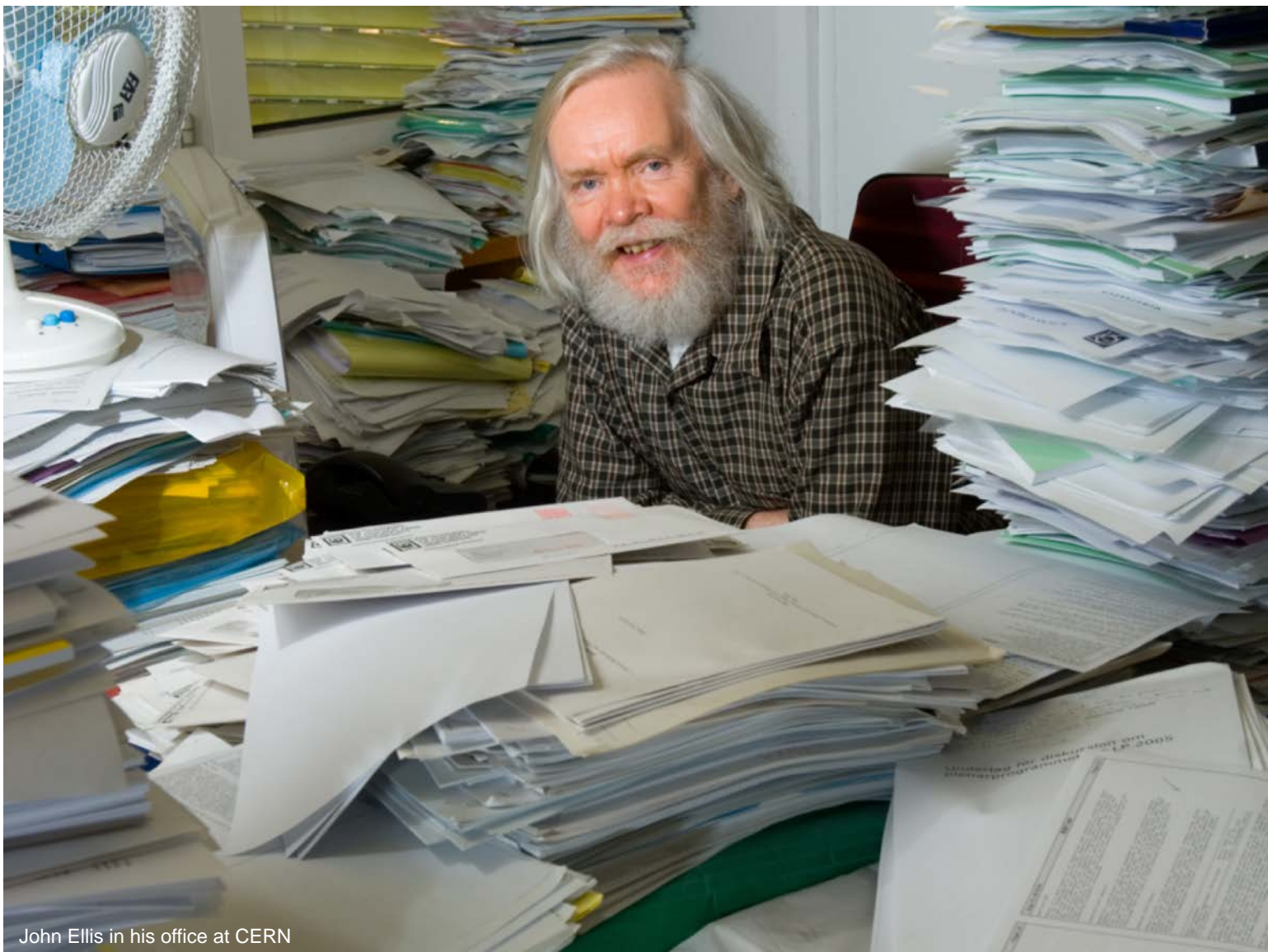
<sup>\*</sup> E-mail address: cms-publication-committee-chair@cern.ch.



# article

# references

# 2899 authors



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...



MAT  
MASSACHUSETTS INSTITUTE OF  
TECHNOLOGY, CAMBRIDGE, RES.

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MIT-LNS-TR  
66  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge.  
Laboratory for Nuclear Science.  
A limit on the branching ratio  $X^* \rightarrow X^* + \gamma$ , by D.  
Friedell, M. Deutsch, D. Cutts, R. Stiening and C. Wiegand.  
December 1967. 10 p.

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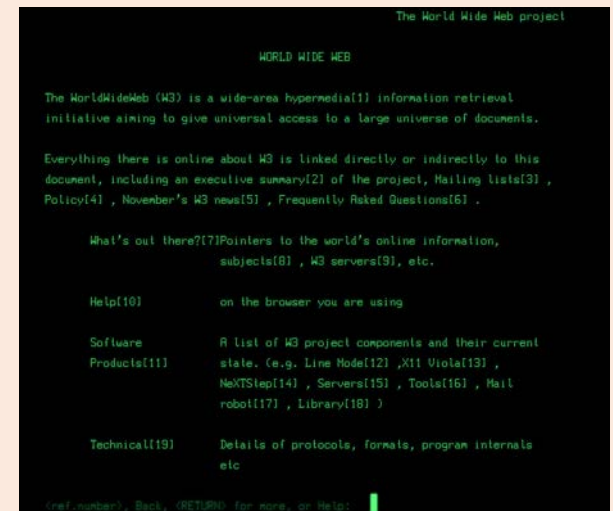
# 1989

## The fall of the Berlin wall

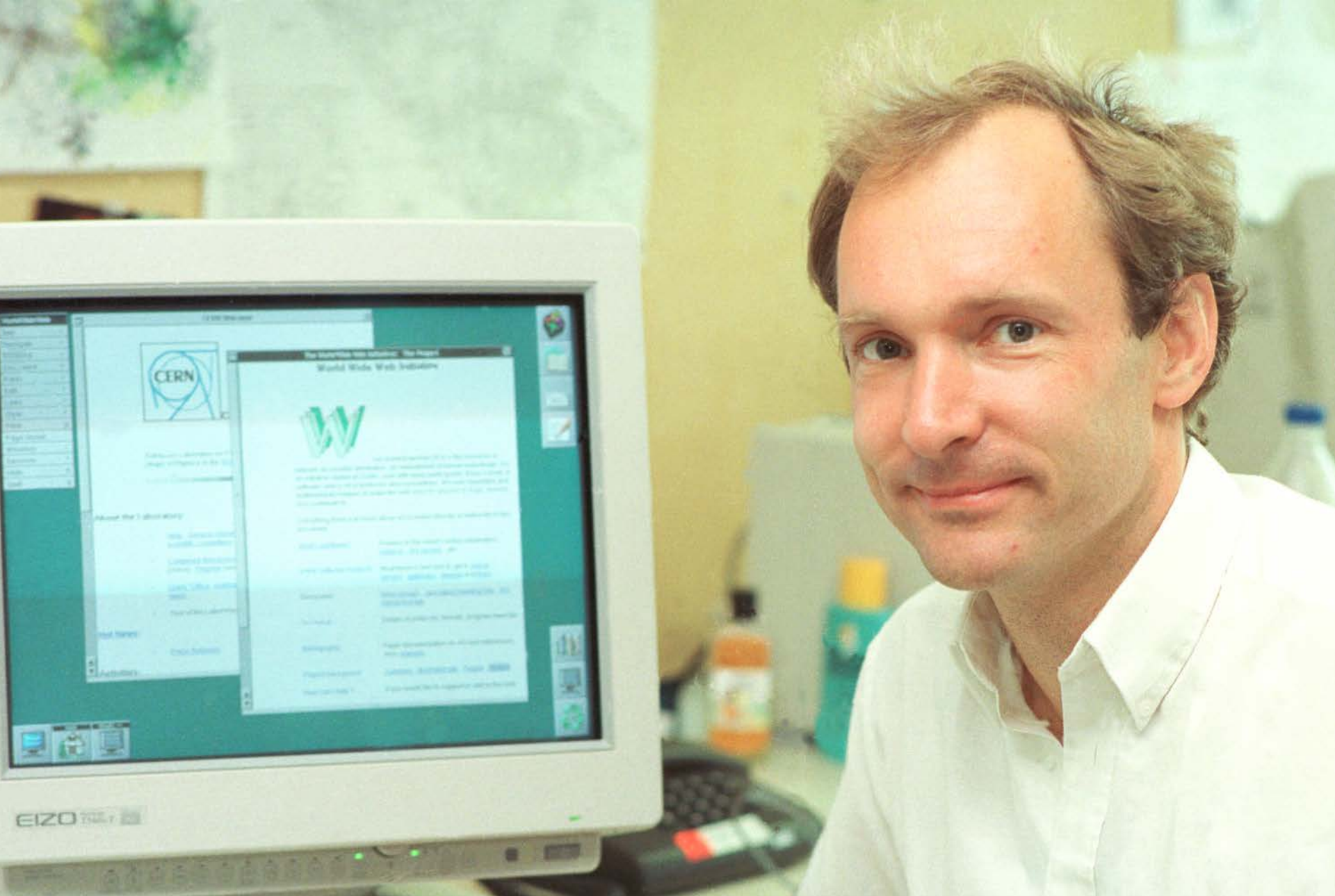


## Boy bands come up

## The web is born!



<http://info.cern.ch>



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





e, CERN/DD

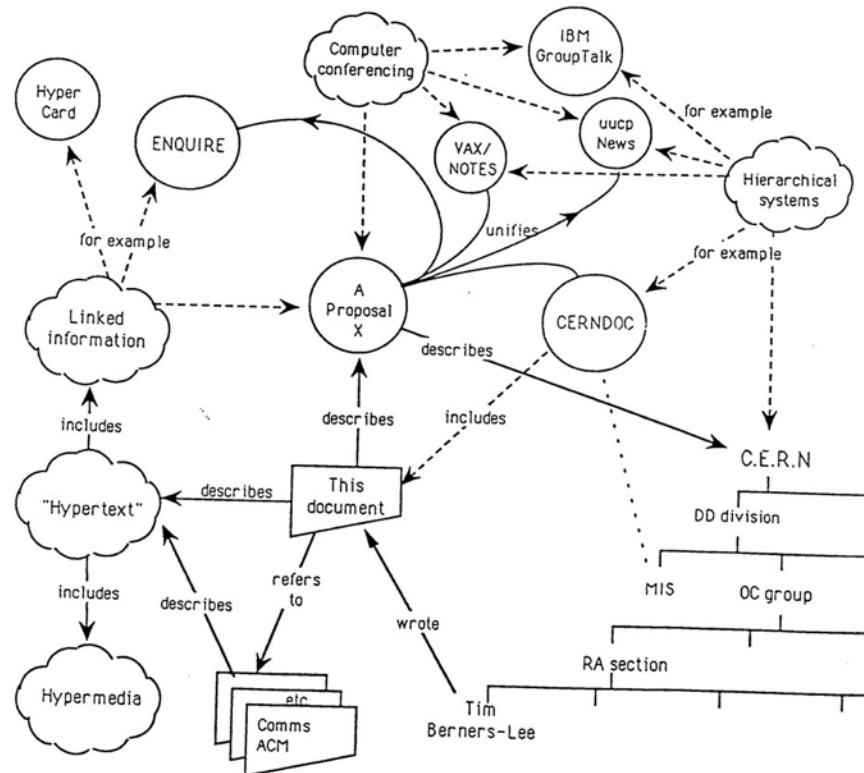
Tim Berners-Lee, CERN/DD

March 1989

## Abstract

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

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High Energy Physics - Experiment

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

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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)

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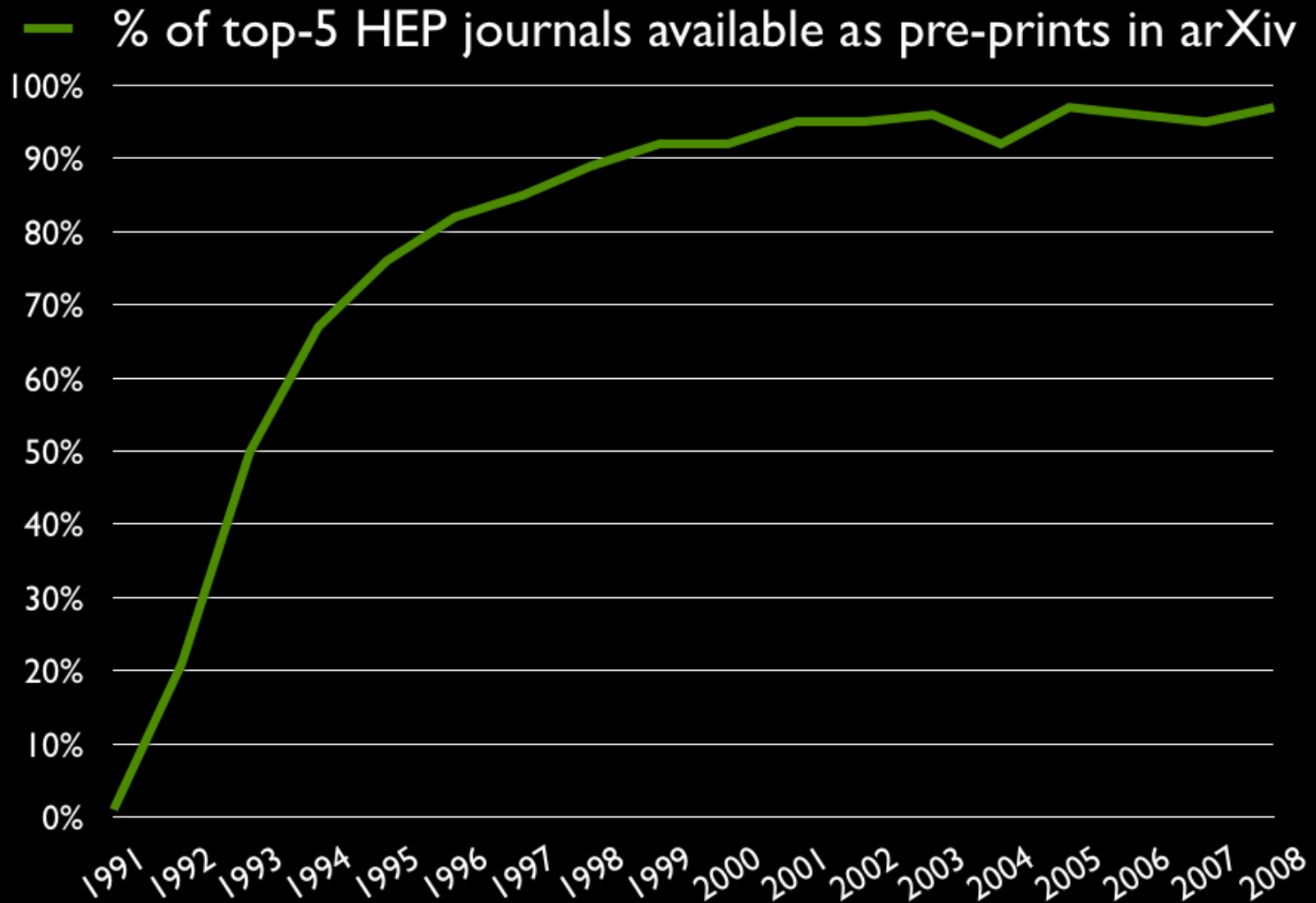
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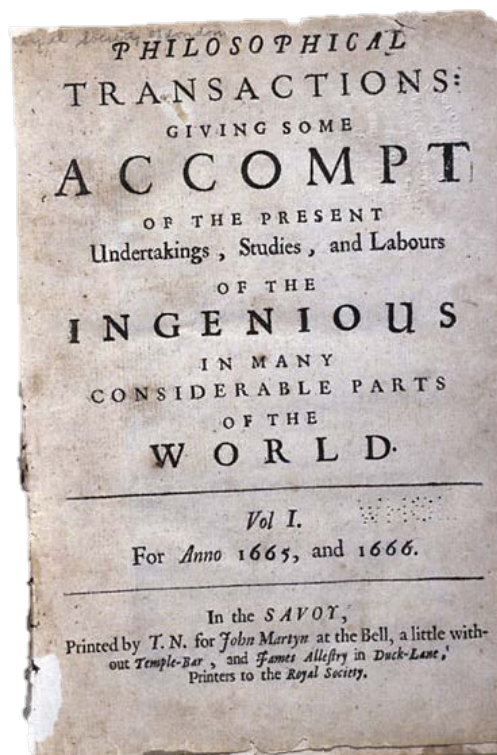
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Physics Letters B 716 (2012) 1-29

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Editor: W.D. Schlatter

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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<sup>-1</sup> collected at sqrt(s) = 7 TeV in 2011 and 5.8 fb<sup>-1</sup> at sqrt(s) = 8 TeV in 2012. Individual searches in the channels H -> ZZ^{(\*)} -> 4l, 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^{(\*)}, b bbar and tau tau -> tau tau in the 7 TeV data and results from improved analyses of the H -> ZZ^{(\*)} -> 4l 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 1.7 x 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 yet 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 (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 160 GeV, apart from some mass regions between 115 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 (sigma), respectively [17,18]. The CD and DD 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 2.0 for CD [14], 1.1 for DD [15] and 2.8 sigma for their combination [16].

The previous ATLAS searches in 4.6-4.8 fb<sup>-1</sup> of data at sqrt(s) = 7 TeV are combined here with new searches for H -> ZZ^{(\*)} -> 4l, H -> gamma gamma and H -> WW^{(\*)} -> e nu mu nu in the 8 TeV data taken at sqrt(s) = 8 TeV between April and June 2012. The data were recorded with instantaneous luminosities up to 6.8 x 10^{31} 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 -> ZZ^{(\*)} -> 4l and H -> 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 -> WW^{(\*)} -> l nu l nu channel, the increased pile-up deteriorates the event missing transverse momentum, E\_T^{miss}, resolution, which results in significantly larger Drell-Yan background in the same-flavour final states. Since the tau 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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<sup>b</sup> E-mail address: atlas.publications@cern.ch.

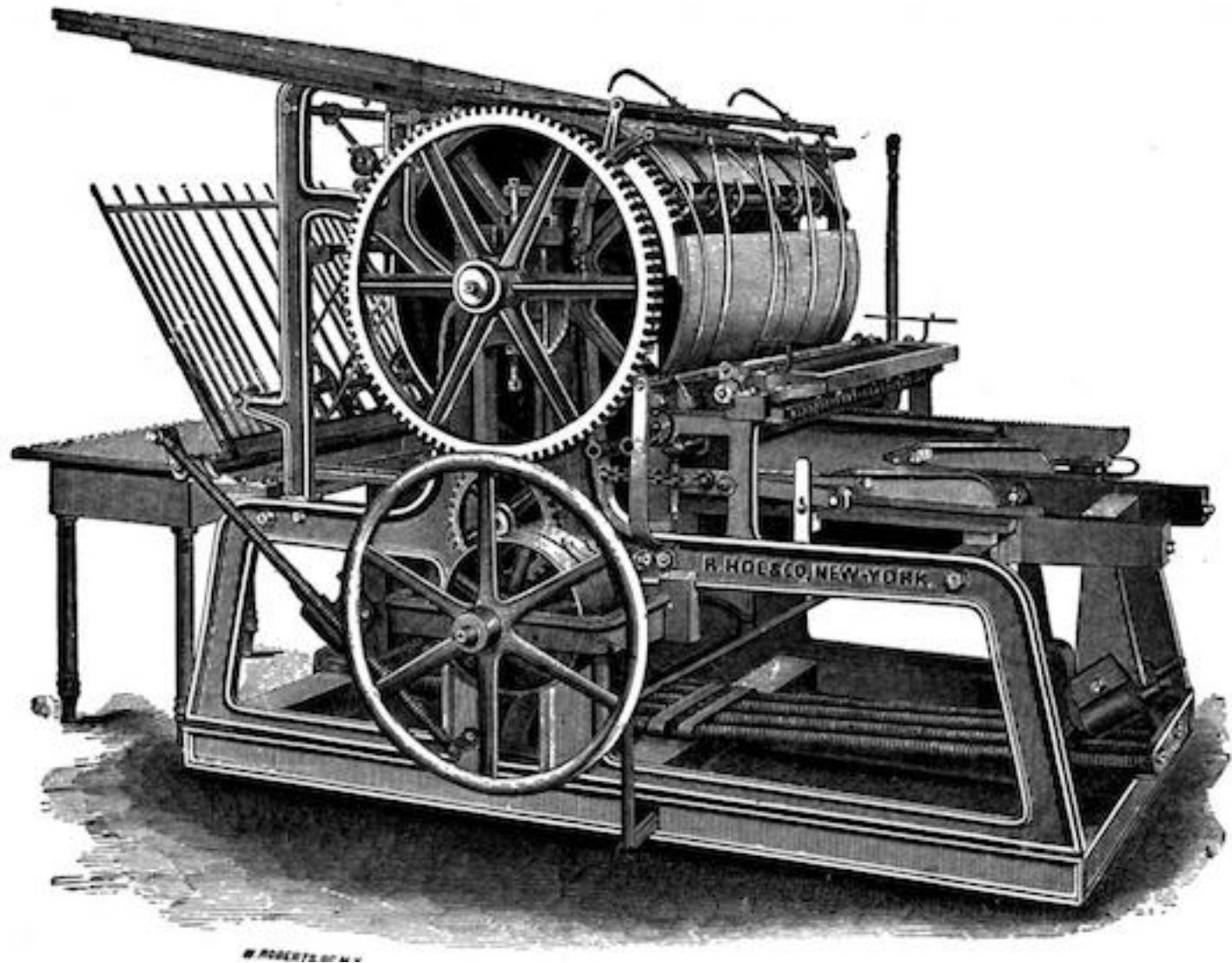
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**Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC**

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  $b\bar{b}$ . 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  $125.3 \pm 0.4$  (stat.)  $\pm 0.5$  (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](https://doi.org/10.1016/j.physletb.2012.08.021)  
**Report number:** CMS-HIG-12-028; CERN-PH-EP-2012-220  
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CMS Collaboration (Serguei Chatrchyan *et al.*) [Show all 2900 authors](#)

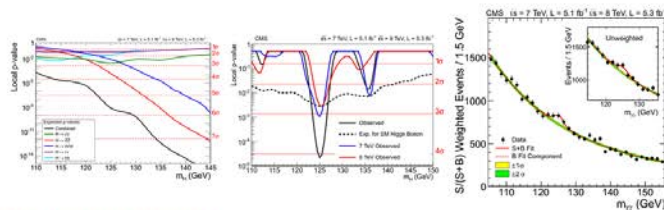
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Phys.Lett. B716 (2012) 30-61  
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DOI: [10.1016/j.physletb.2012.08.021](https://doi.org/10.1016/j.physletb.2012.08.021)  
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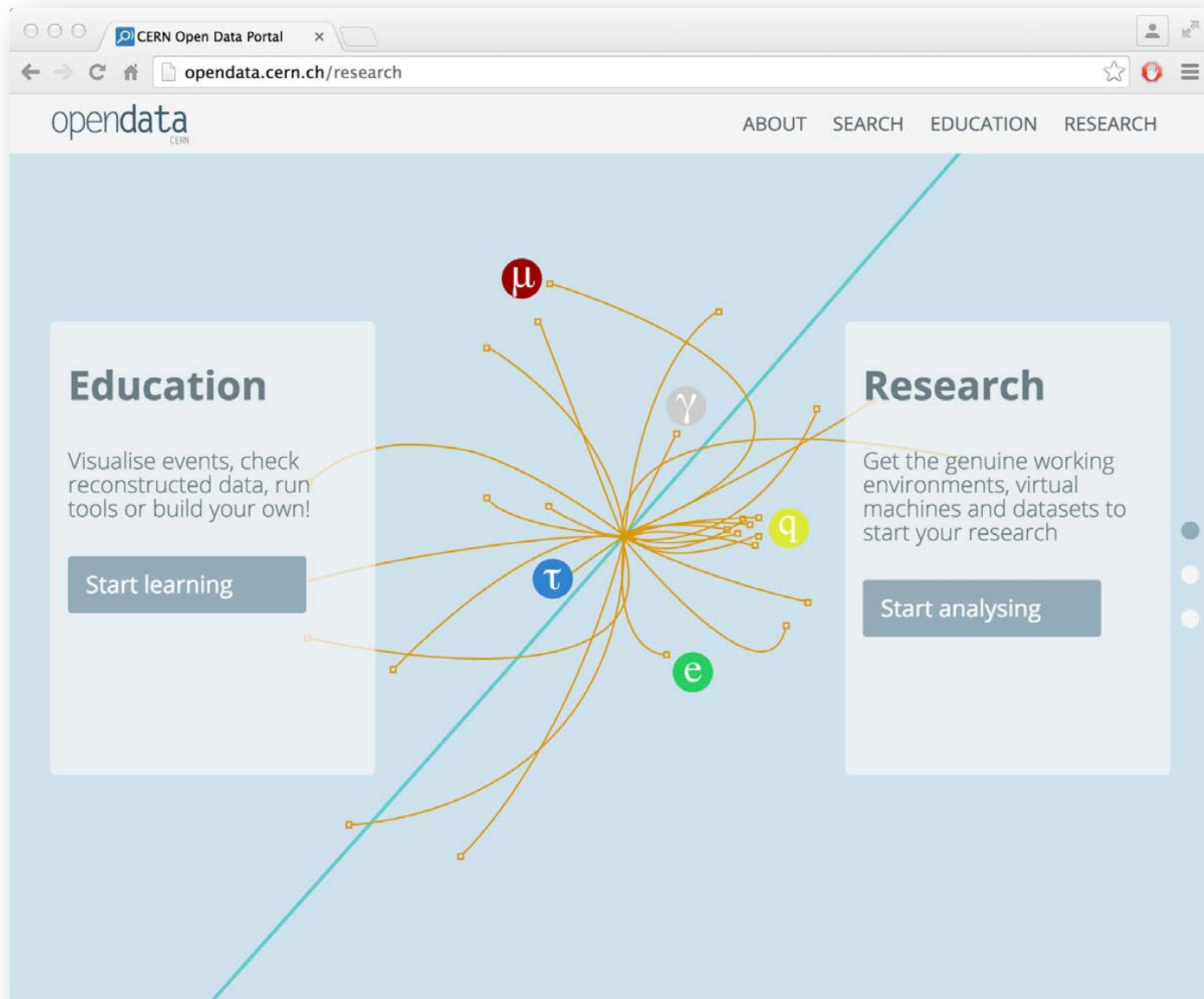
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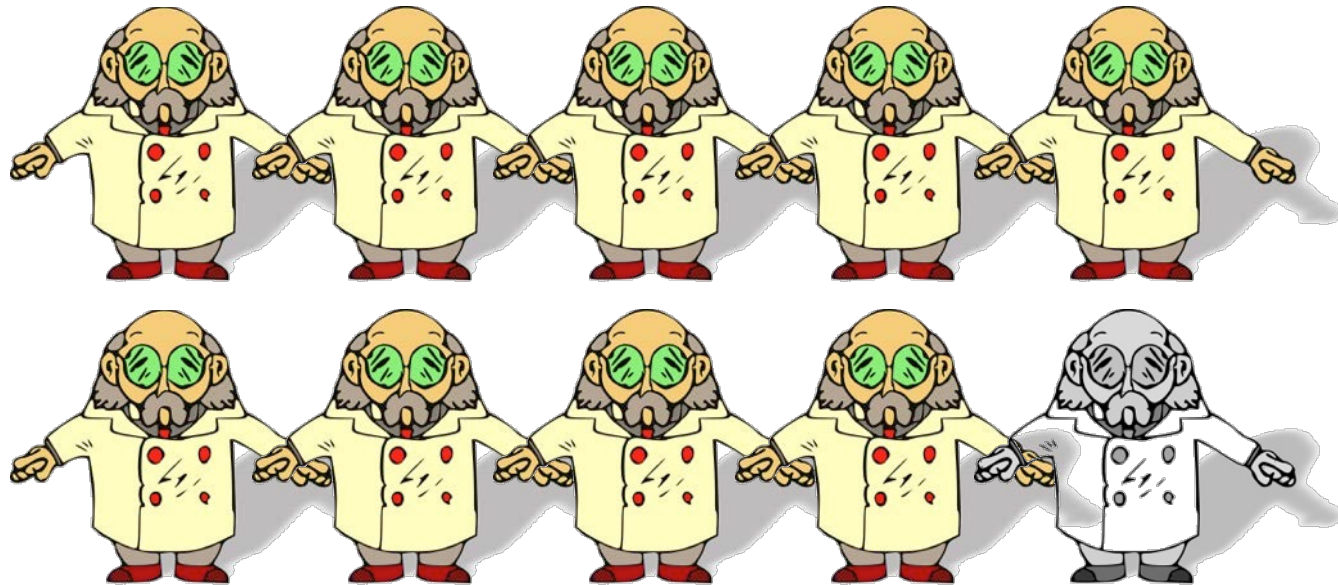


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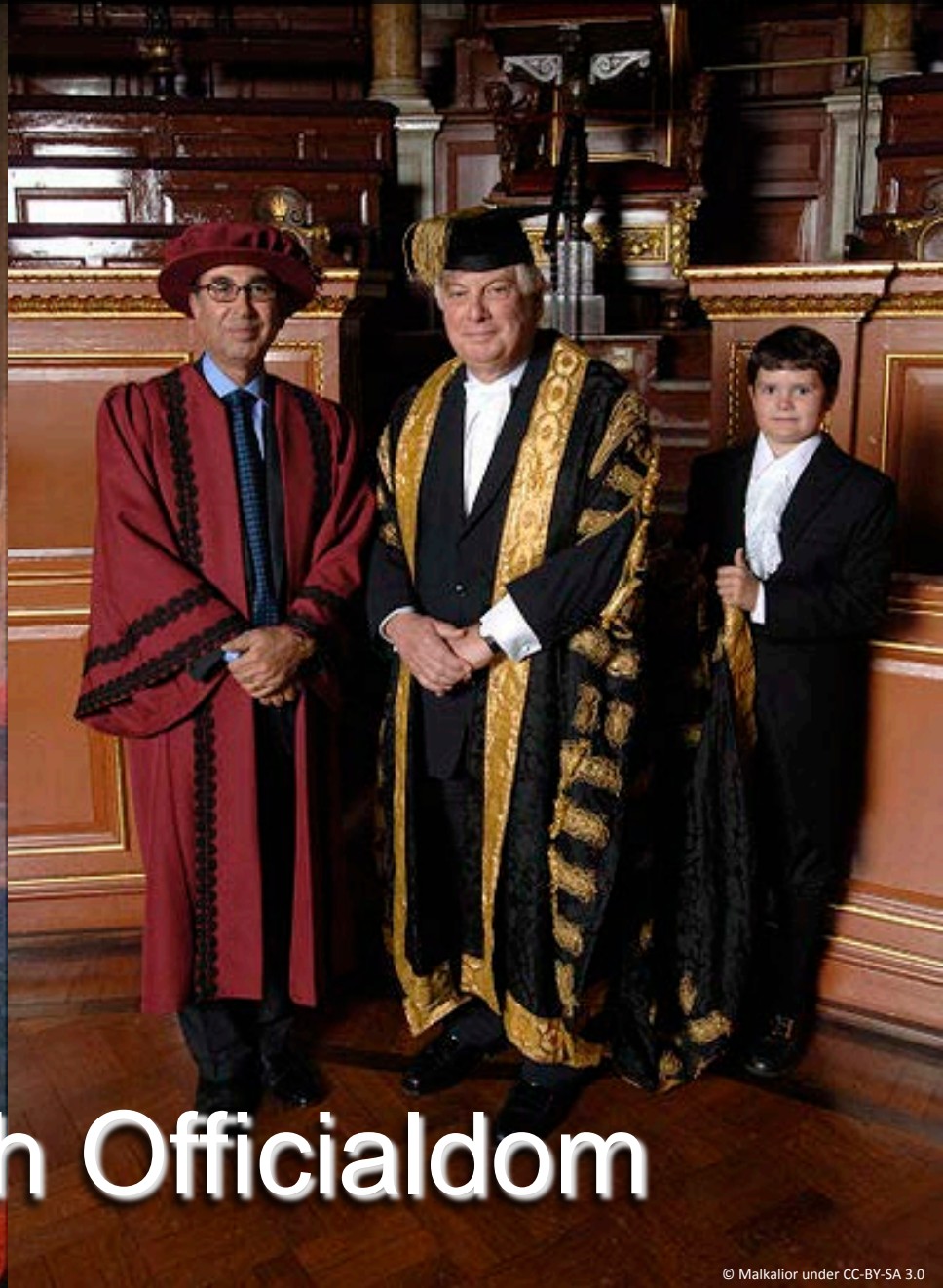
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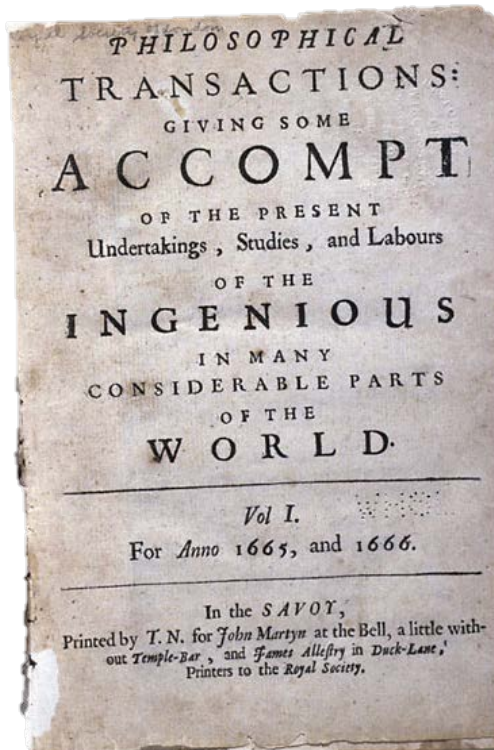
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High Energy Physics - Experiment

**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<sup>-1</sup> collected at sqrt(s) = 7 TeV in 2011 and 5.8 fb<sup>-1</sup> at sqrt(s) = 8 TeV in 2012. Individual searches in the channels H -> ZZ^{(\*)} -> 4l, H -> gamma gamma, H -> WW^{(\*)} -> l nu l nu, H -> WW^{(\*)} -> tau tau, H -> WW^{(\*)} -> e nu e nu, H -> WW^{(\*)} -> e nu mu nu and H -> WW^{(\*)} -> e nu tau nu in the 7 TeV data and results from previously published results of searches for H -> ZZ^{(\*)} -> 4l, H -> gamma gamma, H -> WW^{(\*)} -> l nu l nu, H -> WW^{(\*)} -> tau tau, H -> WW^{(\*)} -> e nu e nu, H -> WW^{(\*)} -> e nu mu nu and H -> WW^{(\*)} -> e nu tau nu in the 8 TeV data are combined with previously published results of searches for H -> ZZ^{(\*)} -> 4l, H -> gamma gamma, H -> WW^{(\*)} -> l nu l nu, H -> WW^{(\*)} -> tau tau, H -> WW^{(\*)} -> e nu e nu, H -> WW^{(\*)} -> e nu mu nu and H -> WW^{(\*)} -> e nu tau nu in the 7 TeV data and results from improved analyses of the H -> ZZ^{(\*)} -> 4l and H -> gamma gamma channels in the 8 TeV data. Clear evidence for the production of a neutral boson with a measured mass of 126.0 +/- 0.4(stat) +/- 0.4(syst) GeV is presented. This observation, which has a significance of 5.9 standard deviations, corresponding to a background fluctuation probability of 1.7 x 10^{-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

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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<sup>1,2</sup>**

ATLAS Collaboration<sup>\*</sup>

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**

**ABSTRACT**

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Indirect limits on the SM Higgs boson mass of m\_H < 156 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 2.0 and 3.1 standard deviations (sigma), respectively [17,18]. The CD0 and D0 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 2.7sigma for CD0 [14], 1.1sigma for D0 [15] and 2.8sigma for their combination [16].

The previous ATLAS searches in 4.6-4.8 fb<sup>-1</sup> of data at sqrt(s) = 7 TeV are combined here with new searches for H -> ZZ^{(\*)} -> 4l, H -> gamma gamma and H -> WW^{(\*)} -> l nu l nu in the 5.8-5.9 fb<sup>-1</sup> 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 x 10^{31} 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 -> ZZ^{(\*)} -> 4l and H -> 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 -> WW^{(\*)} -> l nu l nu channel, the increased pile-up deteriorates the event missing transverse momentum, E\_T^{miss}, resolution, which results in significantly larger Drell-Yan background in the same-flavour final states. Since the tau 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

<sup>\*</sup> © CERN for the benefit of the ATLAS Collaboration.  
<sup>1</sup> E-mail address: atlas.publications@cern.ch.

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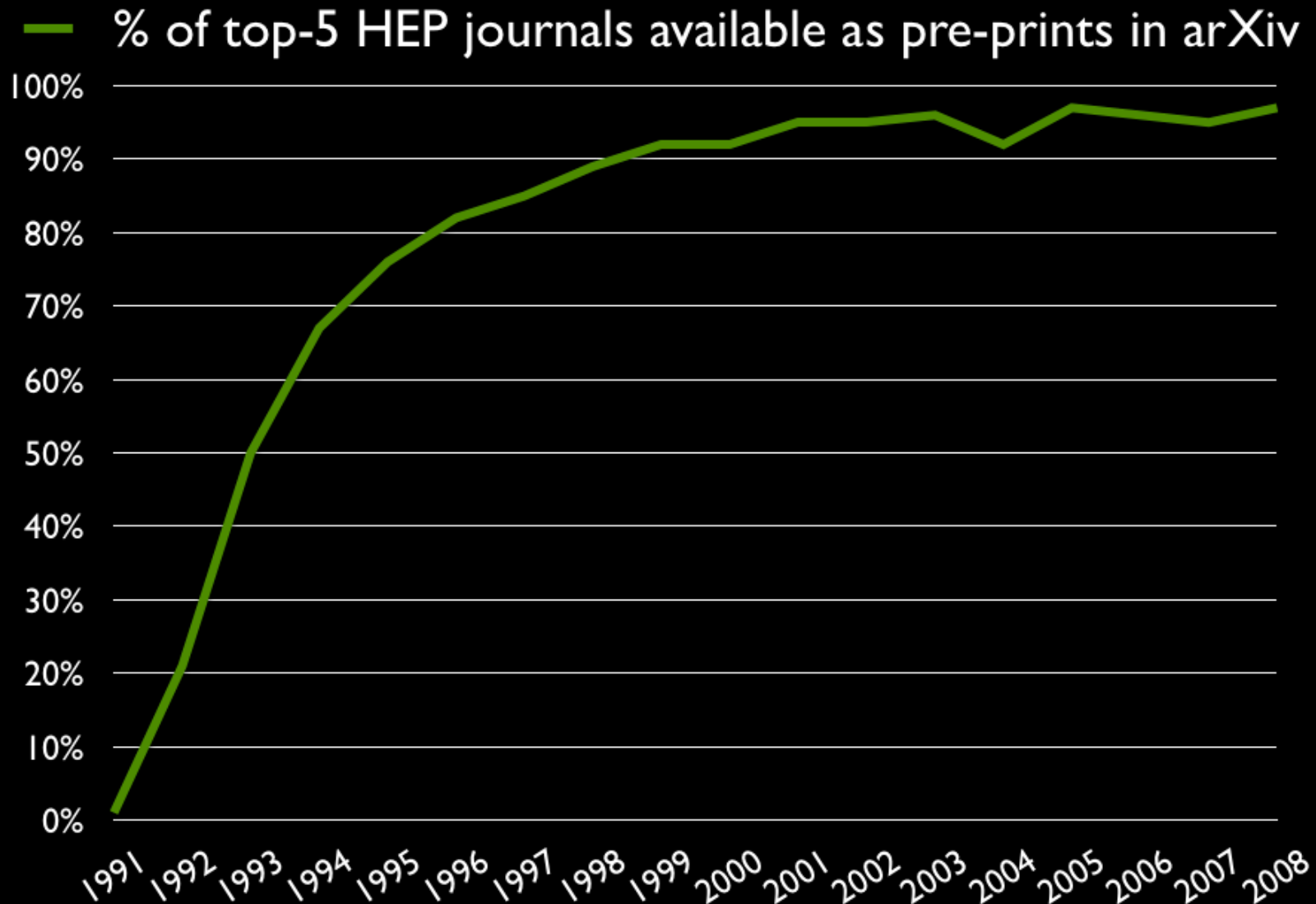


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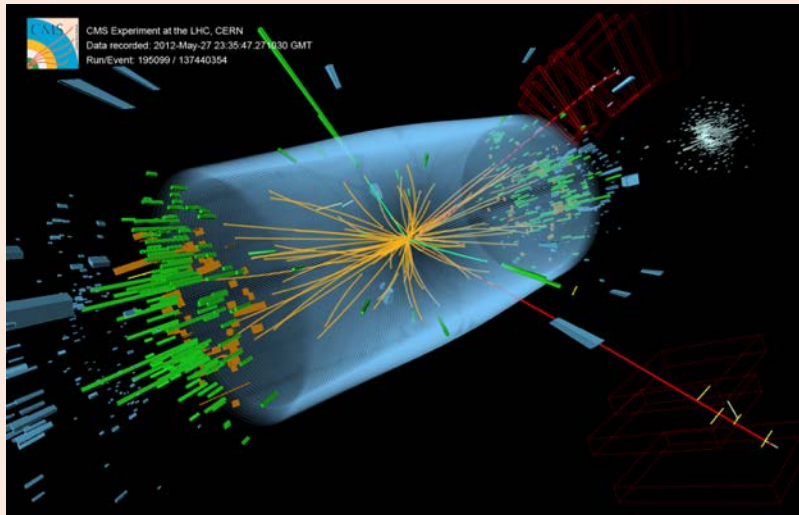


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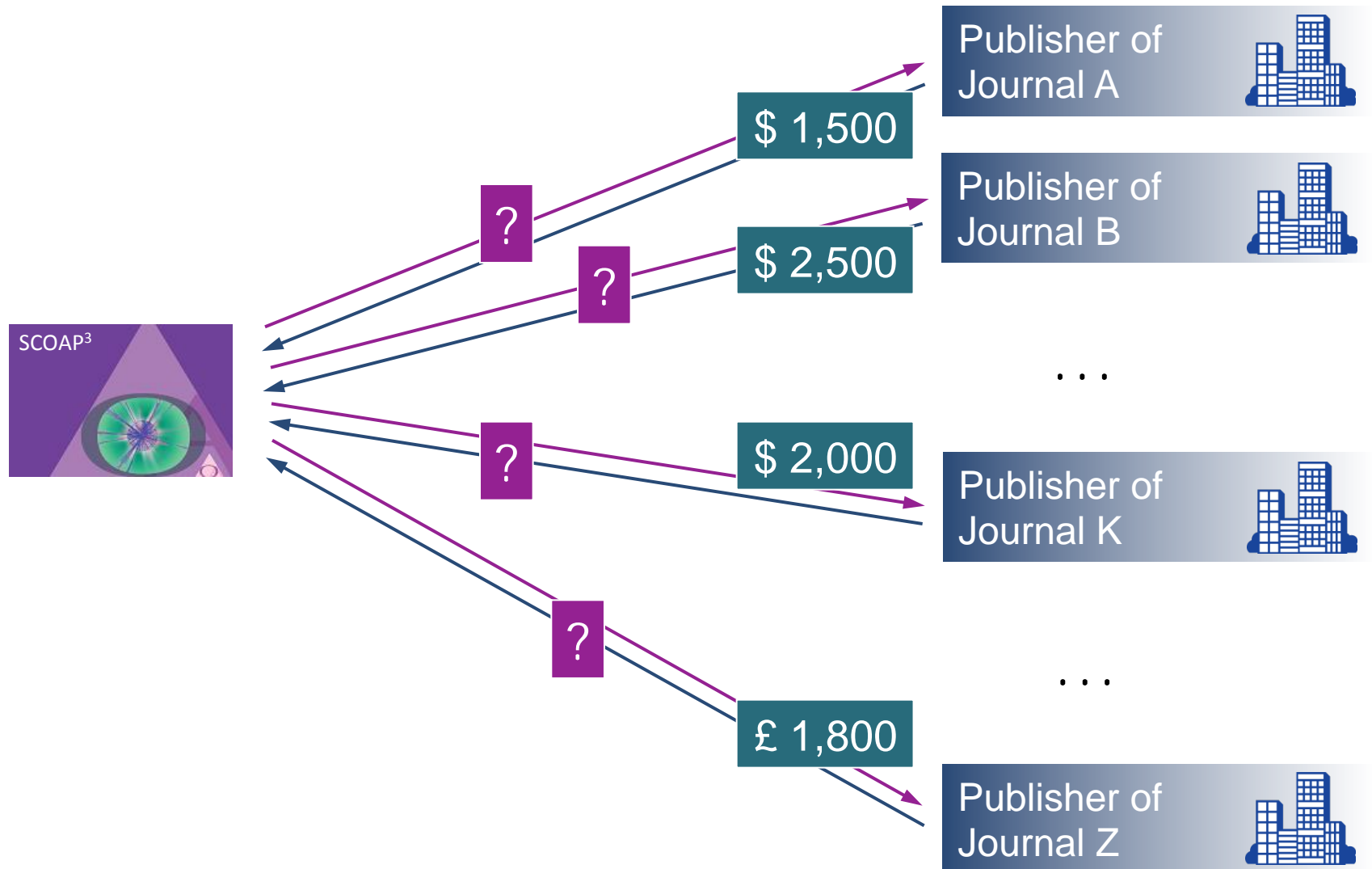
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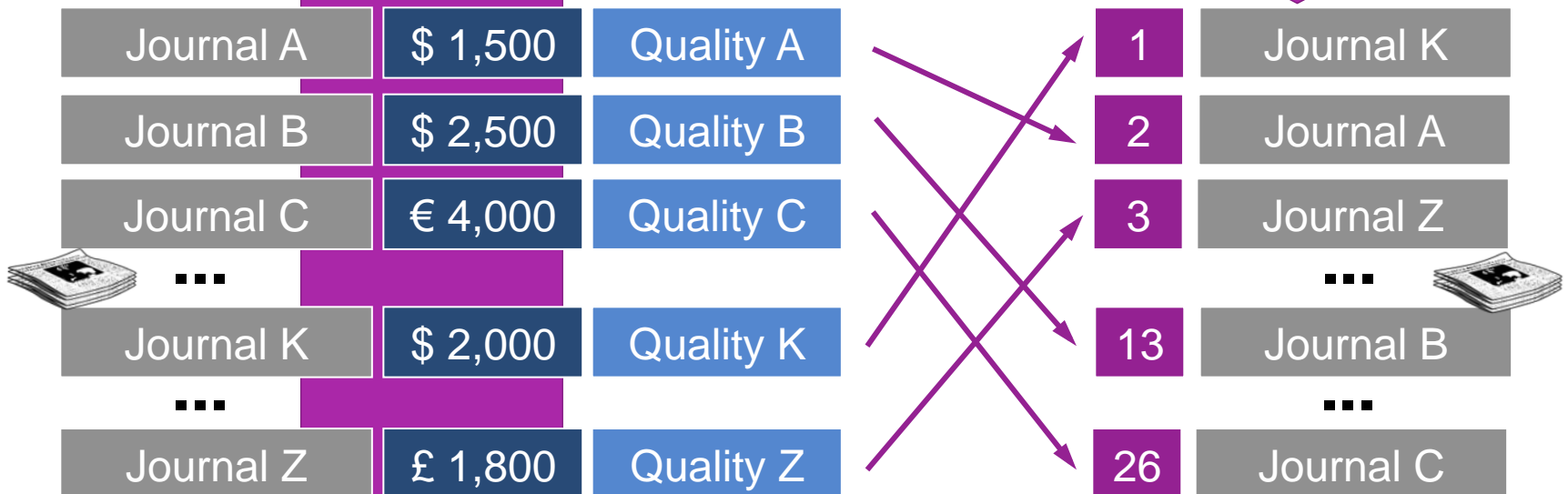
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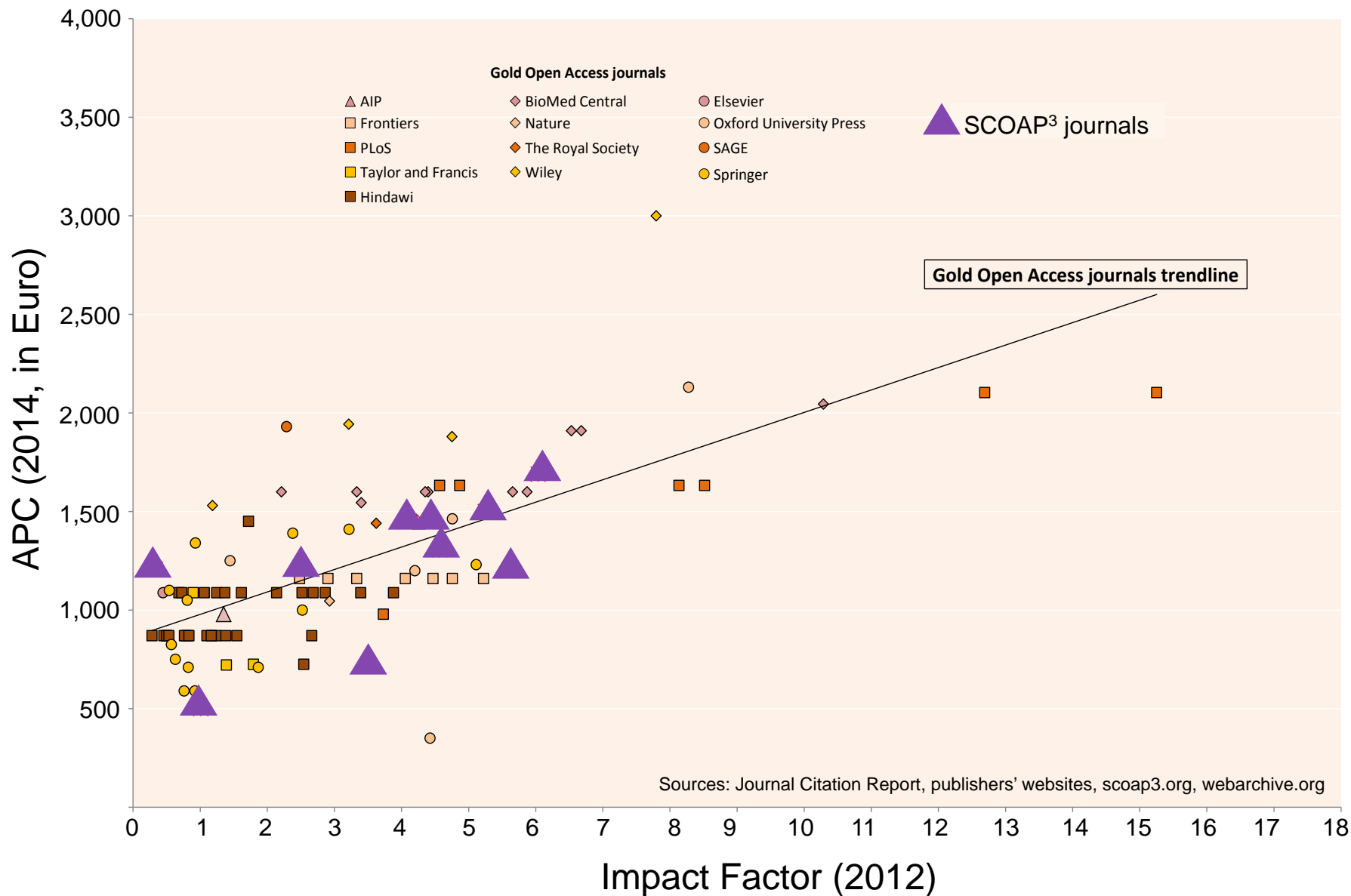
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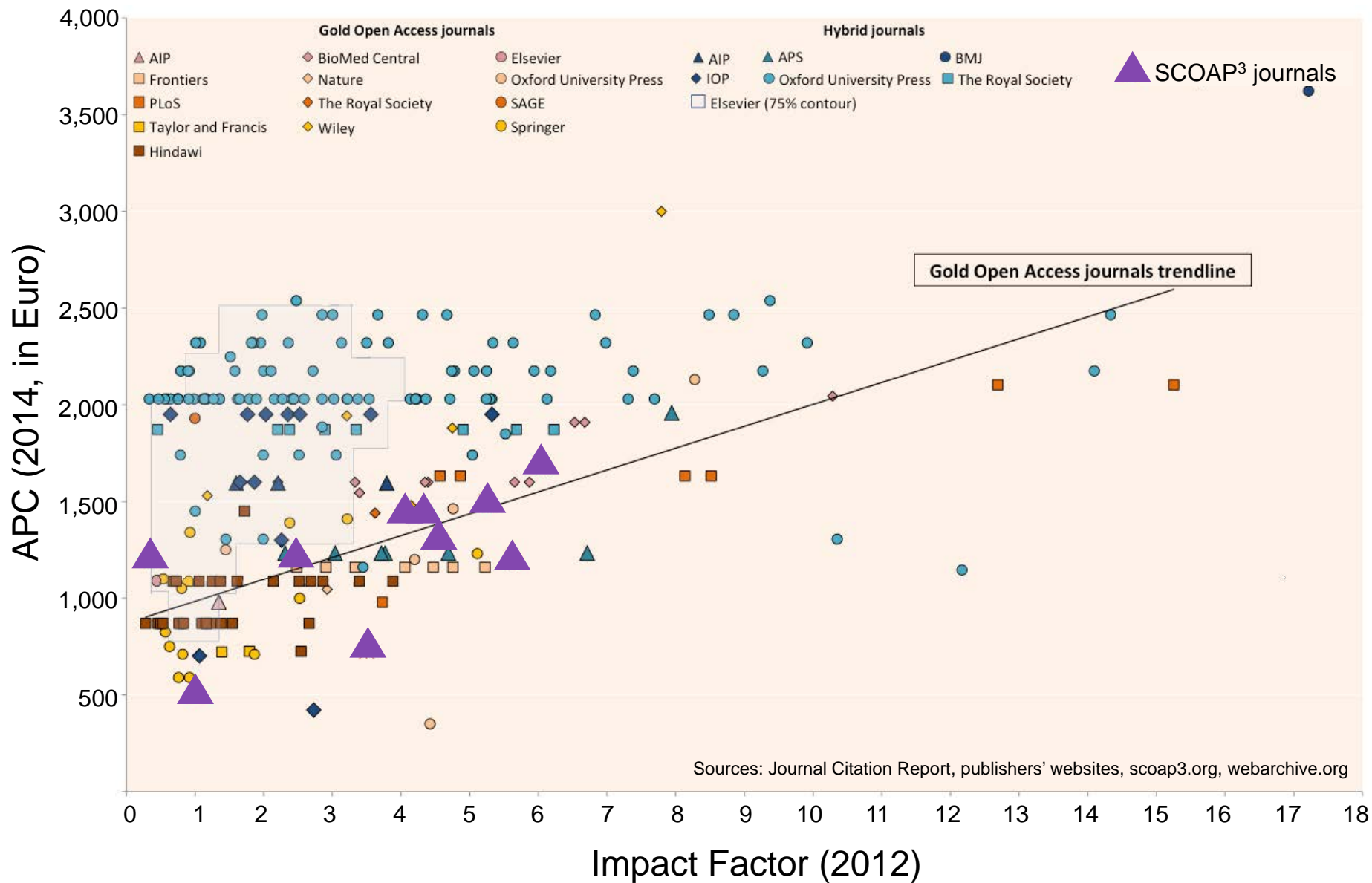
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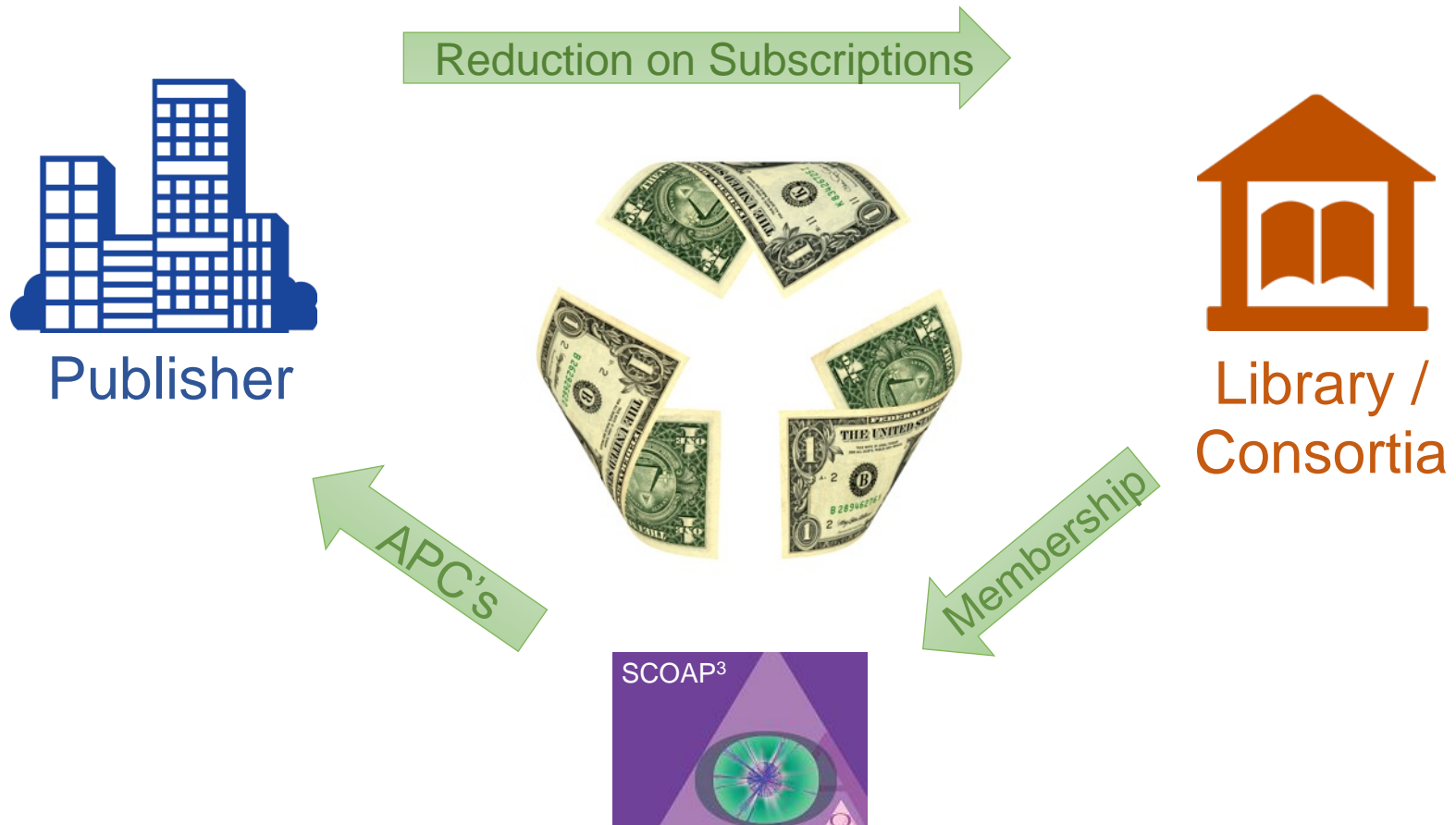
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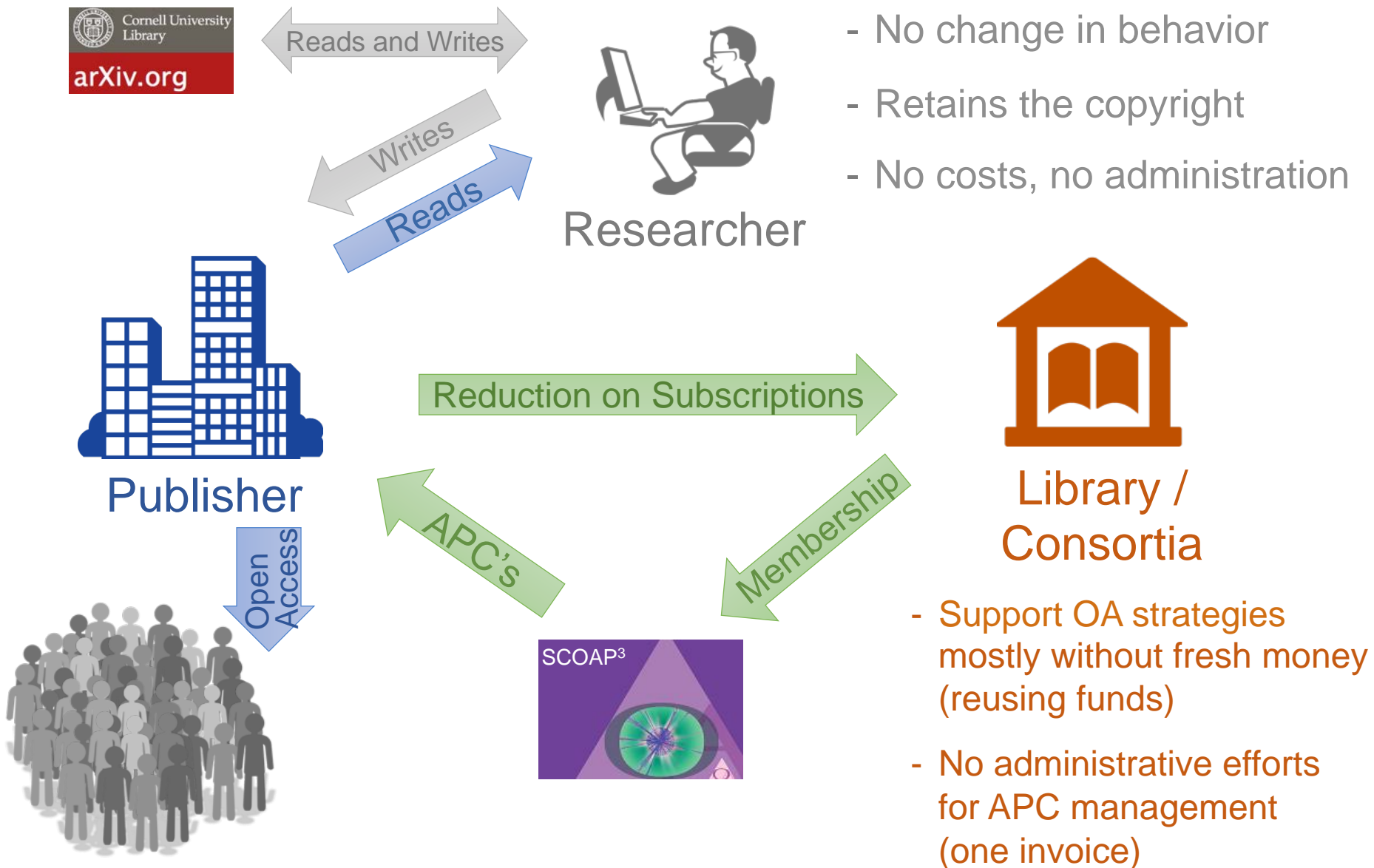


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# The SCOAP<sup>3</sup> Business Model

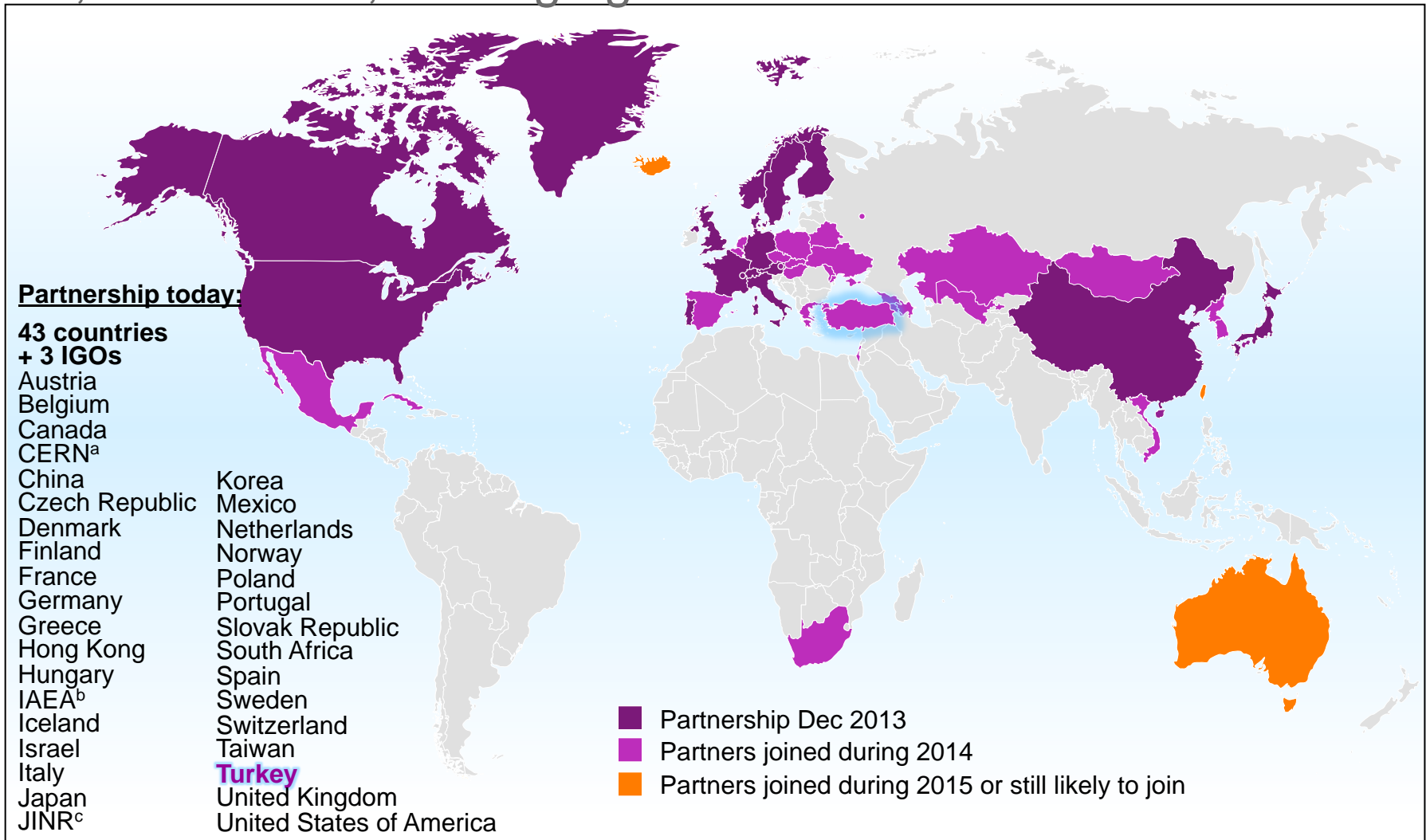




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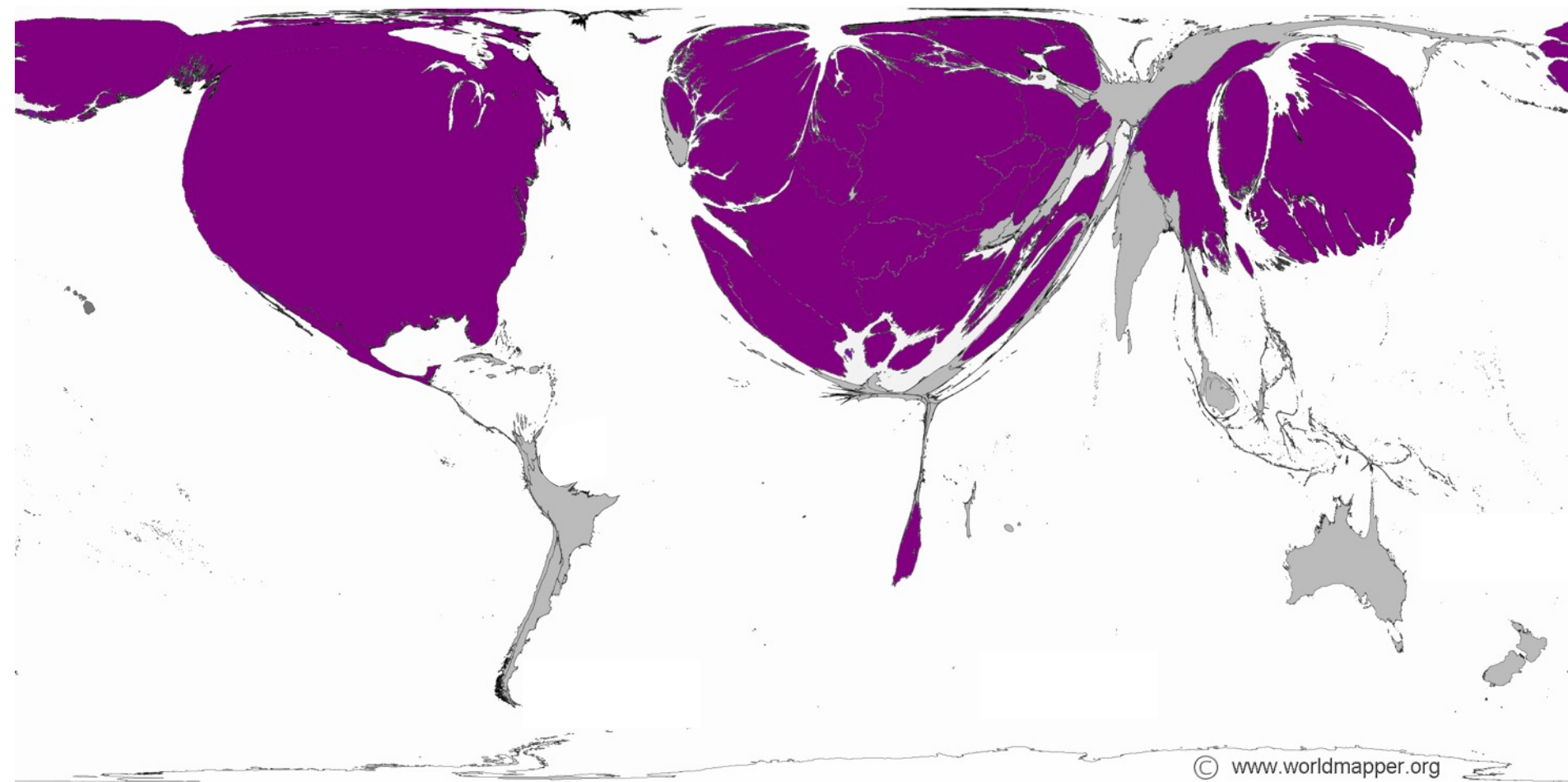
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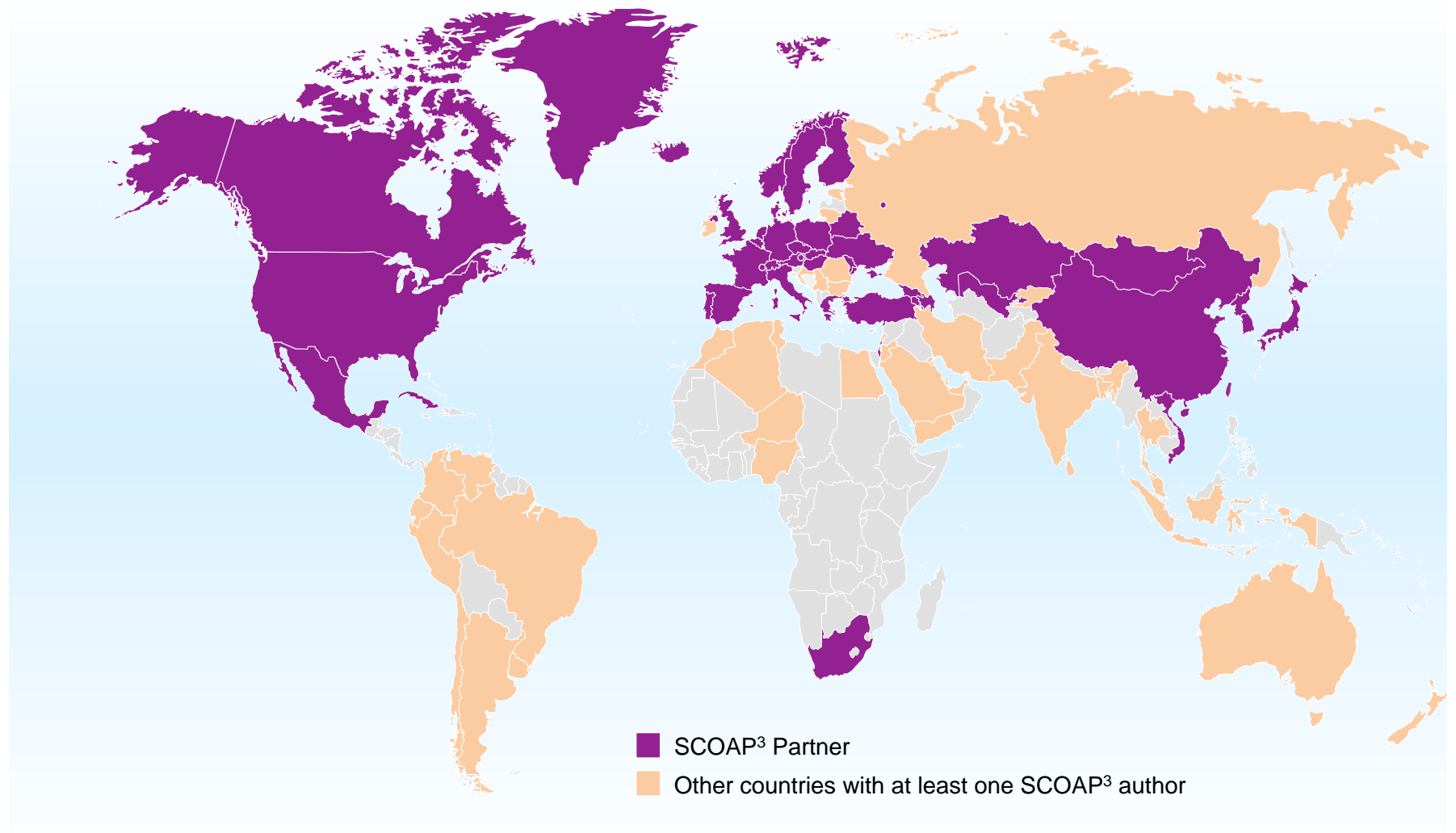


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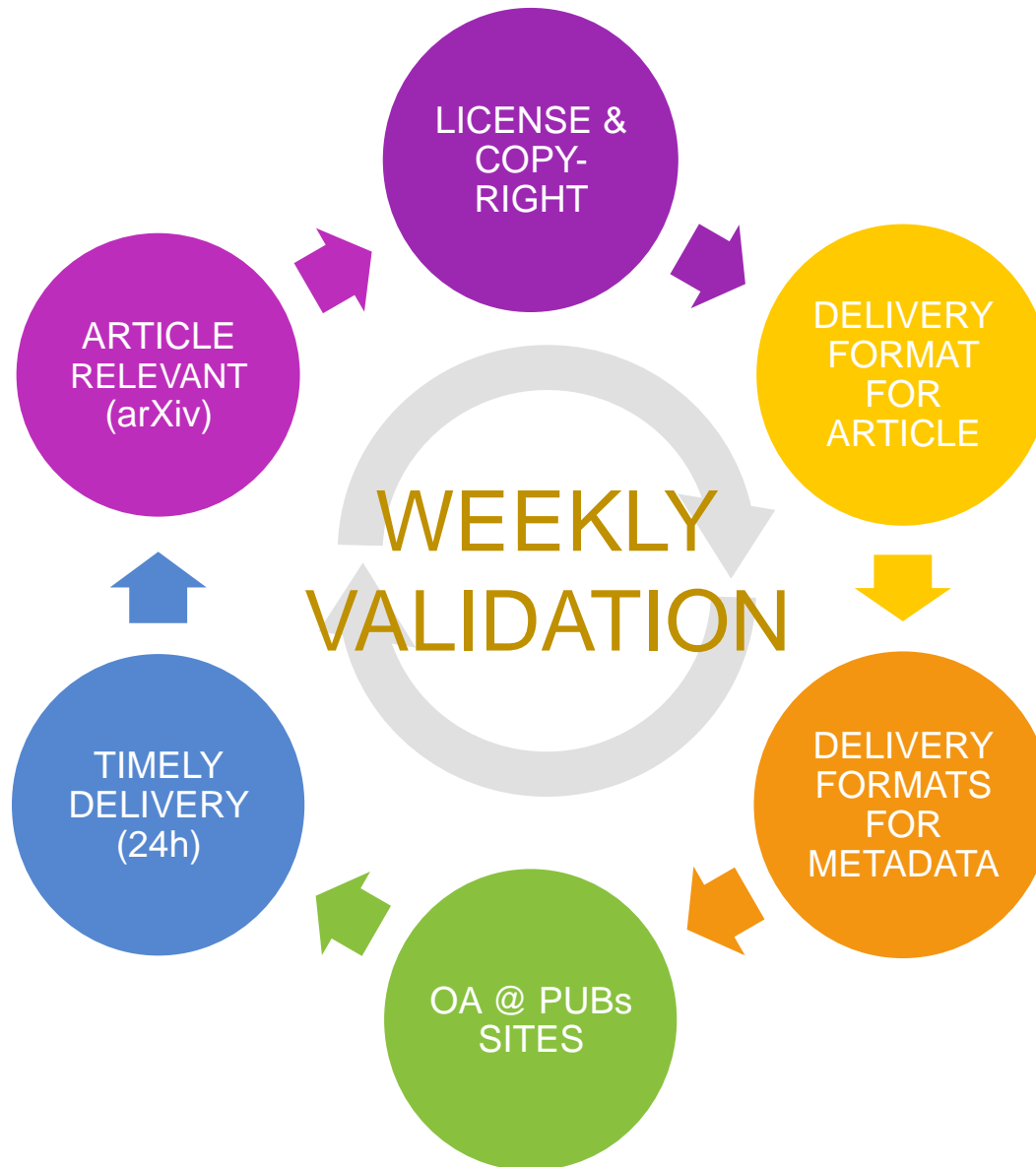
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Number of articles with other licence (or no licence)	877	34%
Full compliance		
Total number of papers with full text in Europe PMC, and CC-BY licence	1565	61%

13% of articles not in repository

Only 66% with CC-BY













Only 61% fully compliant

### Analysis of articles not avail. in Europe PMC

Analysis	Number	Percentage
Total Number of articles not in Europe PMC	335	100
Duplicate articles identified in the dataset supplied by Institutions	3	<1%
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:		
OA on the publisher site	308	95%
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%

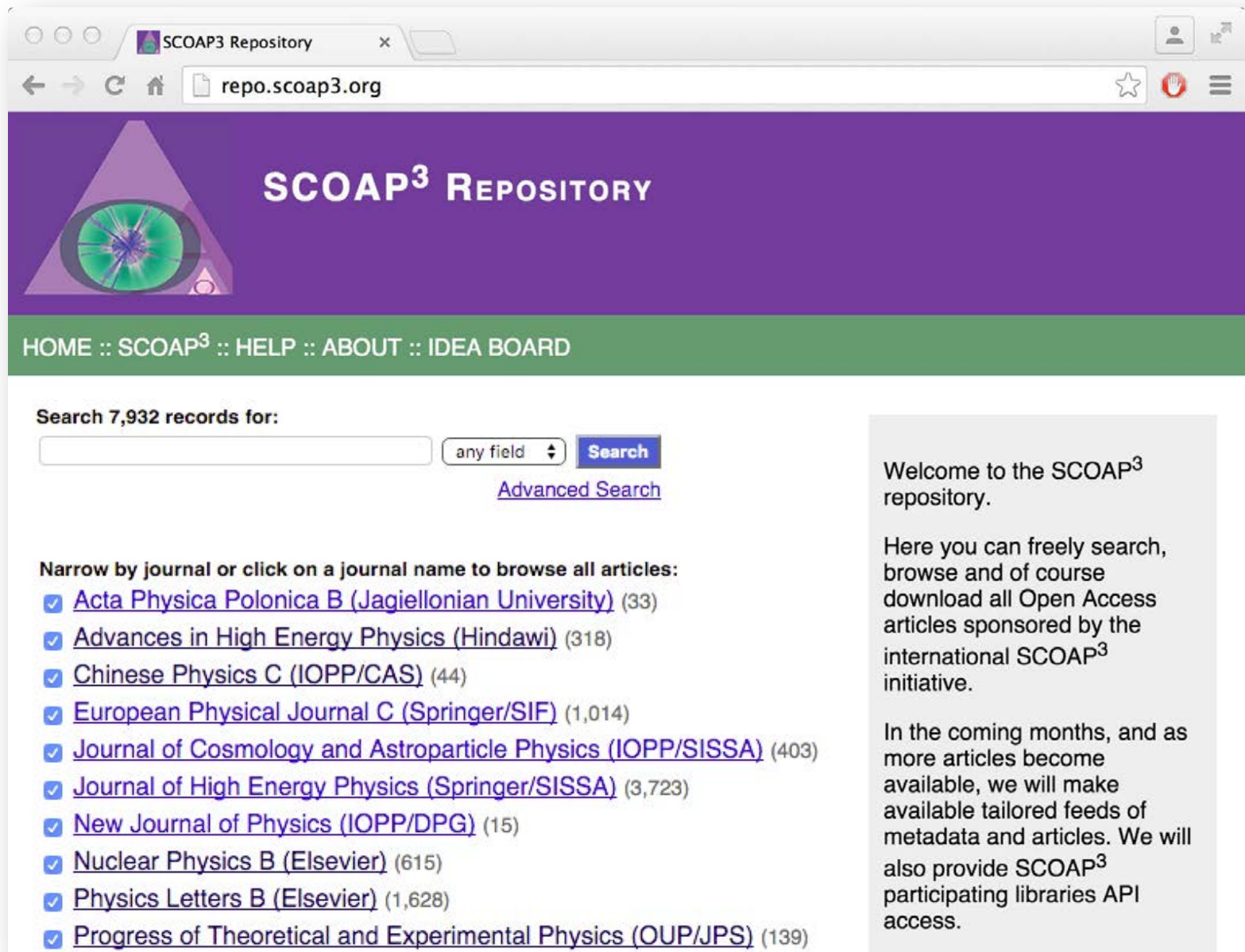
5% not even OA on publisher site



Publisher	Journal	articles
	Nuclear Physics B	615
	Physics Letters B	1'628
 Hindawi	Advances in High Energy Physics	318
	 Chinese Physics C	44
	 Journal of Cosmology & Astroparticle Physics	403
	 New Journal of Physics	15
 JAGIELLONIAN UNIVERSITY IN KRAKOW	Acta Physica Polonica B	33
 OXFORD UNIVERSITY PRESS	 Progress of Theoretical & Experimental Physics	139
	 European Physical Journal C	1'014
	 Journal of High Energy Physics	3'723

Articles as of October 15<sup>th</sup> 2015: 7'932

incl. articles with at least one Turkish author: 413



The screenshot shows a web browser window with the address bar displaying 'repo.scoap3.org'. The page has a purple header with the SCOAP³ logo (a green and blue circular pattern inside a purple triangle) and the text 'SCOAP³ REPOSITORY'. Below the header is a green navigation bar with links: 'HOME :: SCOAP³ :: HELP :: ABOUT :: IDEA BOARD'. The main content area is white and features a search bar with the text 'Search 7,932 records for:'. To the right of the search bar is a dropdown menu set to 'any field' and a blue 'Search' button. Below the search bar is a link to 'Advanced Search'. On the left side, under the heading 'Narrow by journal or click on a journal name to browse all articles:', there is a list of journals with checkboxes and article counts in parentheses. On the right side, there is a grey box containing a welcome message and information about the repository's services.

SCOAP³ REPOSITORY

HOME :: SCOAP³ :: HELP :: ABOUT :: IDEA BOARD

Search 7,932 records for:

any field **Search**

[Advanced Search](#)

**Narrow by journal or click on a journal name to browse all articles:**

- ☒ [Acta Physica Polonica B \(Jagiellonian University\)](#) (33)
- ☒ [Advances in High Energy Physics \(Hindawi\)](#) (318)
- ☒ [Chinese Physics C \(IOPP/CAS\)](#) (44)
- ☒ [European Physical Journal C \(Springer/SIF\)](#) (1,014)
- ☒ [Journal of Cosmology and Astroparticle Physics \(IOPP/SISSA\)](#) (403)
- ☒ [Journal of High Energy Physics \(Springer/SISSA\)](#) (3,723)
- ☒ [New Journal of Physics \(IOPP/DPG\)](#) (15)
- ☒ [Nuclear Physics B \(Elsevier\)](#) (615)
- ☒ [Physics Letters B \(Elsevier\)](#) (1,628)
- ☒ [Progress of Theoretical and Experimental Physics \(OUP/JPS\)](#) (139)

Welcome to the SCOAP³ repository.

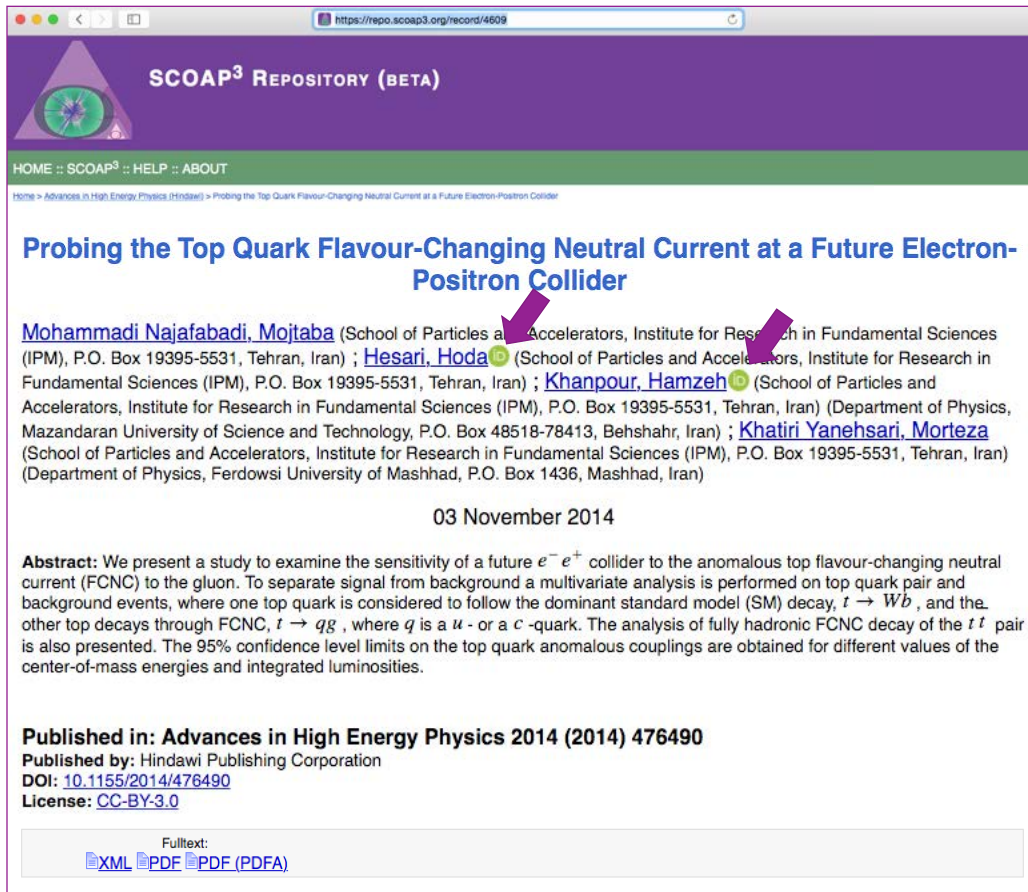
Here you can freely search, browse and of course download all Open Access articles sponsored by the international SCOAP³ initiative.

In the coming months, and as more articles become available, we will make available tailored feeds of metadata and articles. We will also provide SCOAP³ participating libraries API access.

# The SCOAP³ Repository

# ORCID in SCOAP<sup>3</sup>

“ORCIDS have to be sent to SCOAP<sup>3</sup> when they are available”  
*Tender Specification*



SCOAP<sup>3</sup> REPOSITORY (BETA)

HOME :: SCOAP<sup>3</sup> :: HELP :: ABOUT

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 and Accelerators, Institute for Research in Fundamental Sciences (IPM), P.O. Box 19395-5531, Tehran, Iran) ; [Hesari, Hoda](#) (School of Particles and Accelerators, 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,  $t \rightarrow Wb$ , and the other top decays through FCNC,  $t \rightarrow qg$ , where  $q$  is a  $u$ - or a  $c$ -quark. The analysis of fully hadronic FCNC decay of the  $t\bar{t}$  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](https://doi.org/10.1155/2014/476490)  
**License:** [CC-BY-3.0](#)

Fulltext:  
[XML](#) [PDF](#) [PDF \(PDFA\)](#)

Already ~7% of articles in the repository have ORCIDs.

SCOAP<sup>3</sup> partners advised to promote ORCIDs with their authors, to later easily query the repository.



SCOAP3/scoap3 · GitHub

← → ↺ 🏠 🔒 GitHub, Inc. [US] https://github.com/SCOAP3/scoap3 🔍 ☆ 🛑 ☰

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Repository for SCOAP3 initiative. Overlay for Invenio Software. <https://repo.scoap3.org>

📄 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

<> Code

🔔 Issues 0

🔗 Pull requests 0

📡 Pulse

📊 Graphs

HTTPS clone URL

https://github.com/! 📄

You can clone with [HTTPS](#) or [Subversion](#). ⓘ

📄 Clone in Desktop

☁ Download ZIP

I   
SCOAP3





Libraries

Repurpose subscriptions; participative; global...



```
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"
```

The screenshot shows a web browser window with the address bar displaying 'repo.scoap3.org'. The page has a purple header with the 'SCOAP3 REPOSITORY' logo. Below the header, there is a search bar with the text 'Search 7,462 records for:' and a dropdown menu set to 'any field'. A blue 'Search' button is next to the search bar. Below the search bar, there is a link to 'Advanced Search'. The main content area is titled 'Narrow by journal or click on a journal name to browse all articles:' and lists several journals with checkboxes and article counts:

- ✓ [Acta Physica Polonica B \(Jagiellonian University\)](#) (29)
- ✓ [Advances in High Energy Physics \(Hindawi\)](#) (297)
- ✓ [Chinese Physics C \(IOPP/CAS\)](#) (42)
- ✓ [European Physical Journal C \(Springer/SIF\)](#) (944)
- ✓ [Journal of Cosmology and Astroparticle Physics \(IOPP/SISSA\)](#) (385)
- ✓ [Journal of High Energy Physics \(Springer/SISSA\)](#) (3,487)
- ✓ [New Journal of Physics \(IOPP/DPG\)](#) (15)
- ✓ [Nuclear Physics B \(Elsevier\)](#) (587)
- ✓ [Physics Letters B \(Elsevier\)](#) (1,544)
- ✓ [Progress of Theoretical and Experimental Physics \(OUP/JPS\)](#) (132)

On the right side of the page, there is a grey box containing a welcome message:

Welcome to the SCOAP<sup>3</sup> repository.

Here you can freely search, browse and of course download all Open Access articles sponsored by the international SCOAP<sup>3</sup> initiative.

In the coming months, and as more articles become available, we will make available tailored feeds of metadata and articles. We will also provide SCOAP<sup>3</sup> participating libraries API access.

For information on SCOAP<sup>3</sup>, and how to join, please visit [scoap3.org](http://scoap3.org).

If you have an idea for a new feature please use our [Idea Board](#).

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

# Funding Agencies



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

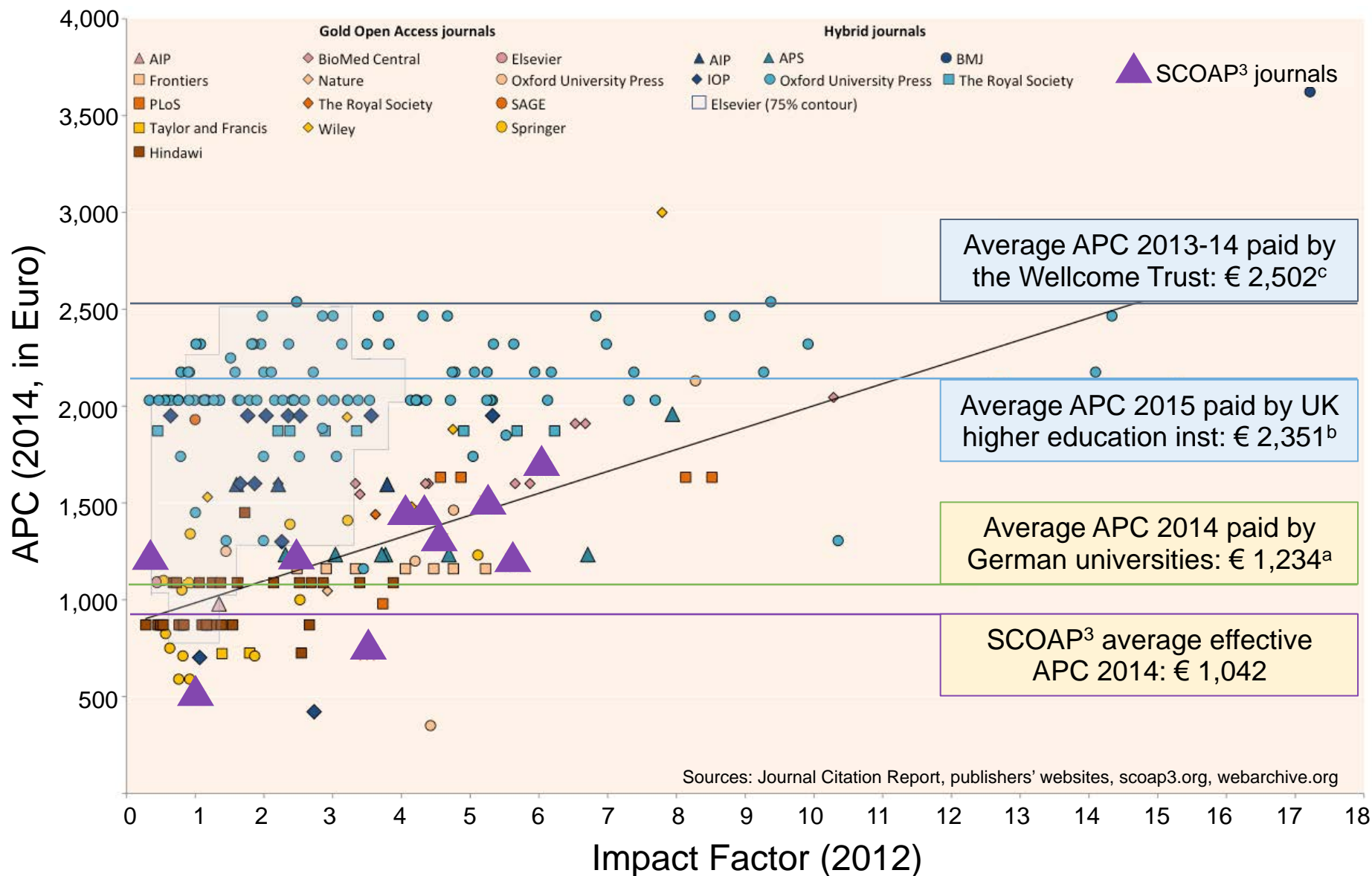


Chart: C. Romeu *et al.* (2014) *The SCOAP3 initiative and the Open Access - Article-Processing-Charge market: global partnership and competition improve value in the dissemination of science* DOI: 10.2314/CERN/C26P.W9DT

- a) <https://github.com/OpenAPC/openapc-de;>
- b) [http://figshare.com/articles/2015\\_Jan\\_June\\_UK\\_APC\\_data\\_combined/1509860](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/>





11  
Publishers



on behalf of  
SCOAP<sup>3</sup>

Accounting / payments  
SCOAP<sup>3</sup> Repository  
Governance support  
Outreach  
Representation  
Coordination of partners  
Legal framework



46  
Countries

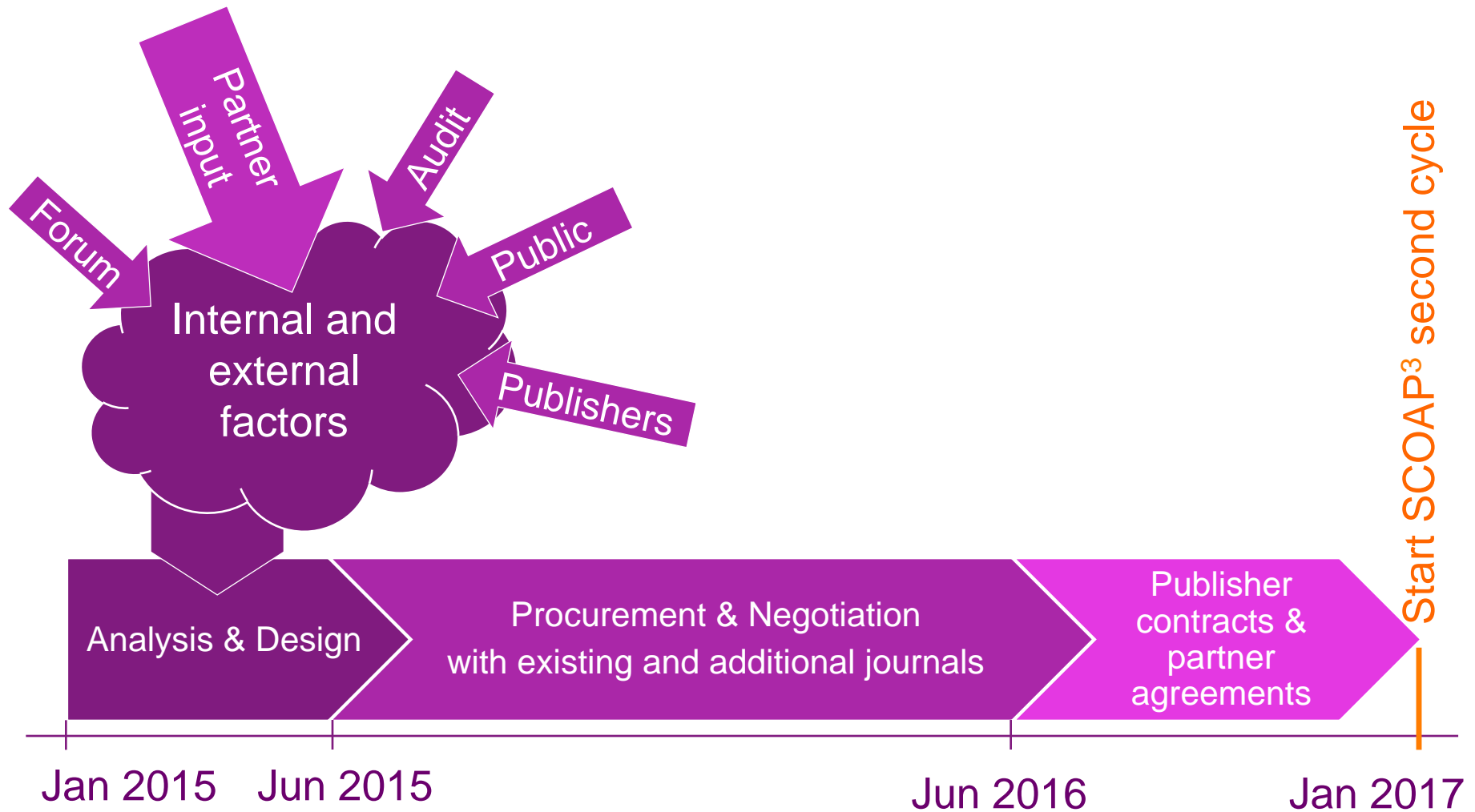
3'000 Libraries

A group of scientists, mostly men and women in their 30s and 40s, are shown in a state of high excitement. They are wearing lanyards with ID badges, suggesting a conference or meeting. The man in the foreground is shouting with his mouth wide open and his arm raised. Behind him, a woman is also shouting with her mouth open and hands raised. To the right, another man is cheering with his mouth open and hands raised. The background shows other people, some looking on and others also appearing to be part of the celebration. The overall atmosphere is one of joy and triumph.

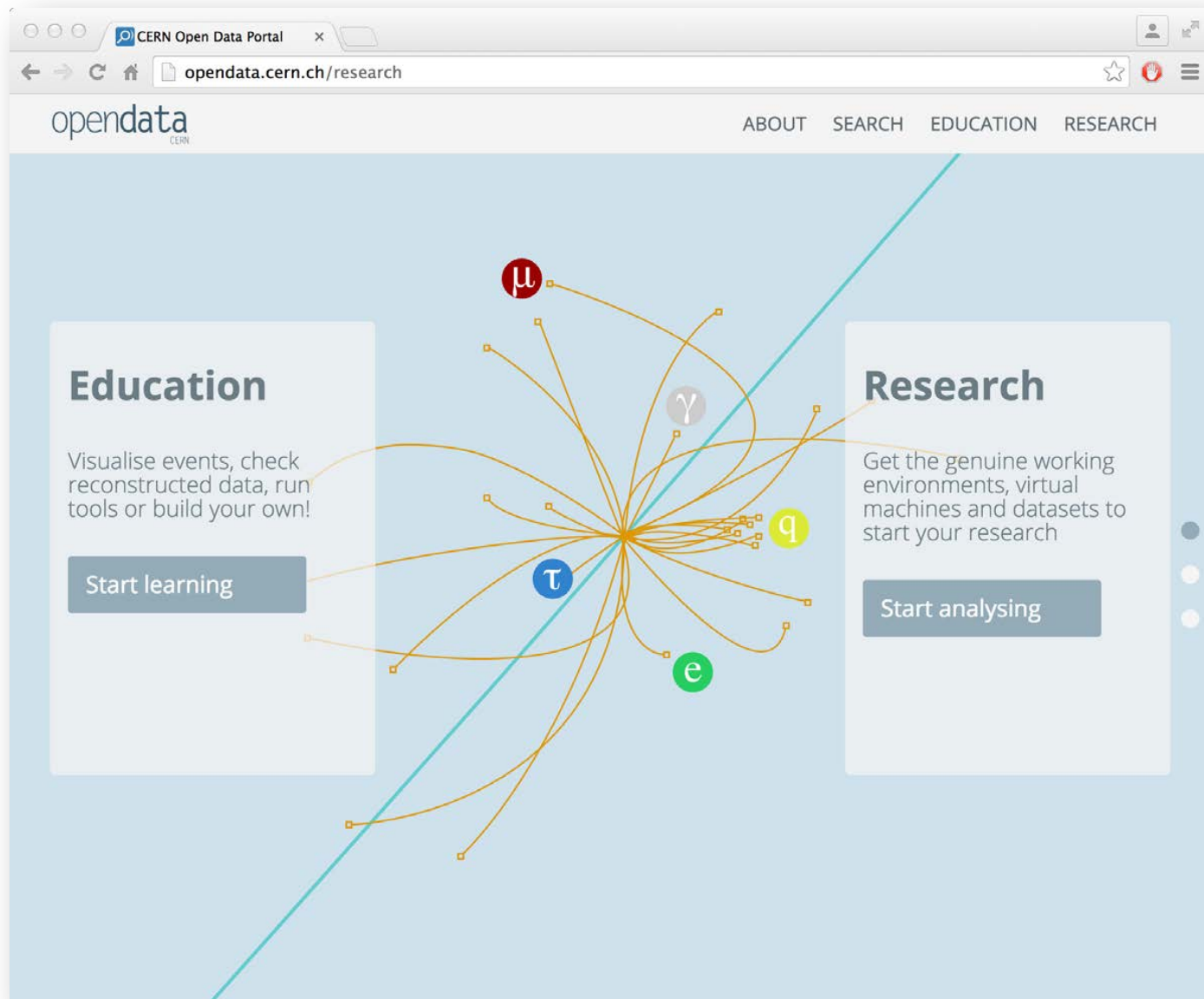
Scientists

No costs; no administration; no change

# Roadmap for SCOAP<sup>3</sup> 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 Policy, reconstructed data and accompanying tools will be released after reasonable embargo 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.

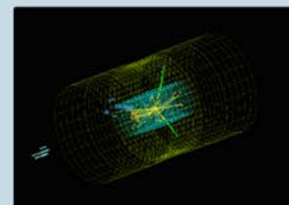
[Explore ATLAS >](#)



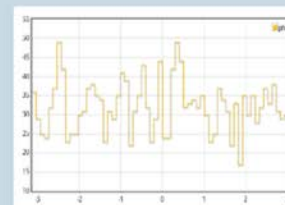
The LHCb (Large Hadron Collider beauty) experiment aims to record the decay of particles containing b and anti-b quarks, known as B mesons. The detector is designed to gather information about the identity, trajectory, momentum and energy of each particle.

[Explore LHCb >](#)

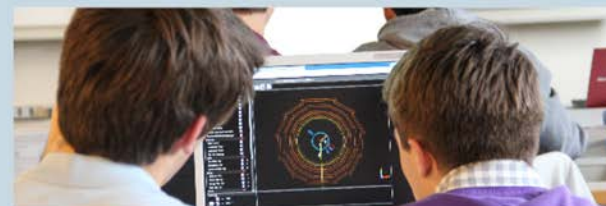
For education purposes, the complex primary data need to be processed into a format (examples below) that is good for simple applications. Get in touch if you wish to build your own applications similar to those shown here



[Visualise events >](#)



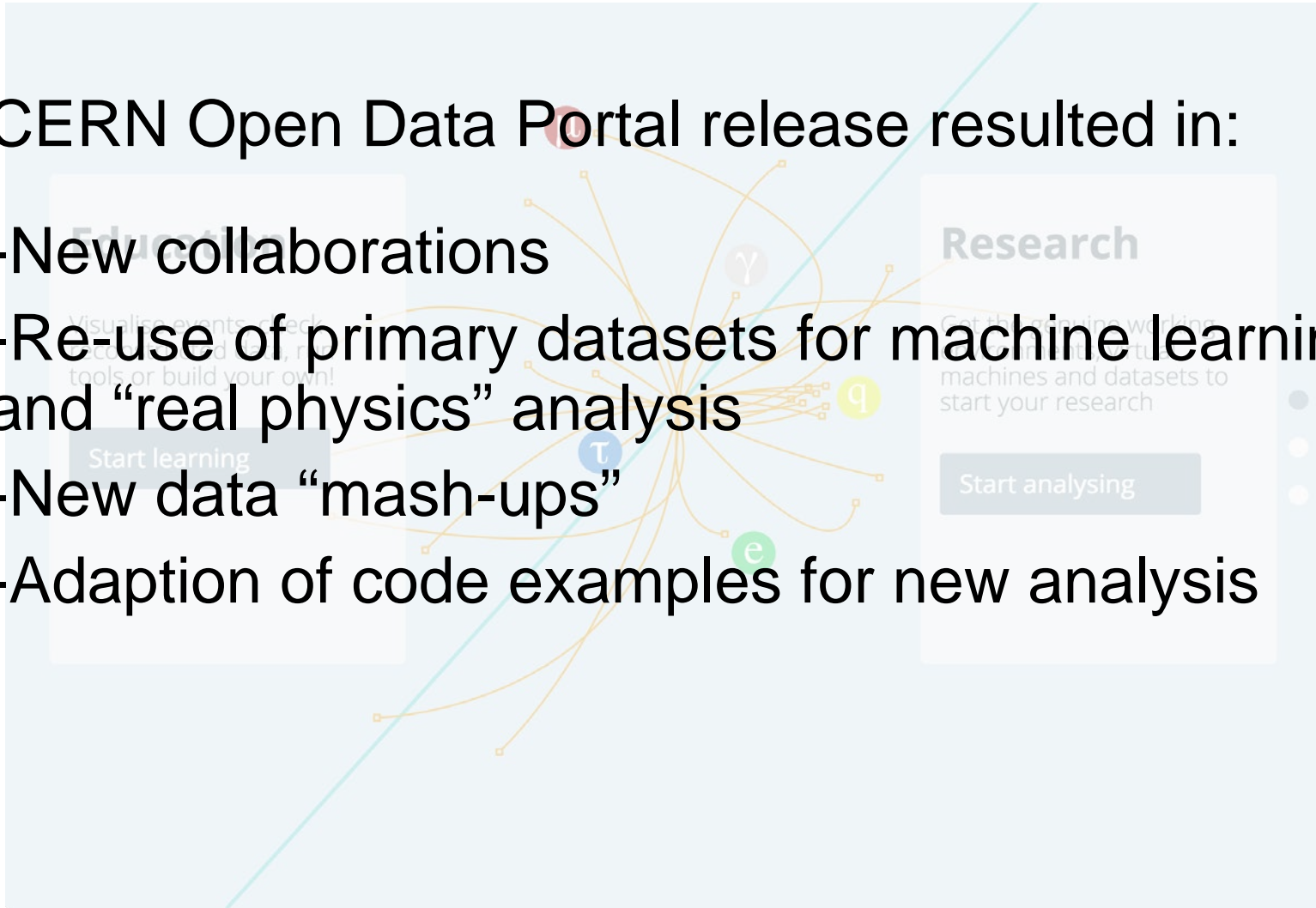
[Visualise histograms >](#)



[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