The Impact of Open Access in High-Energy Physics: Green & Gold

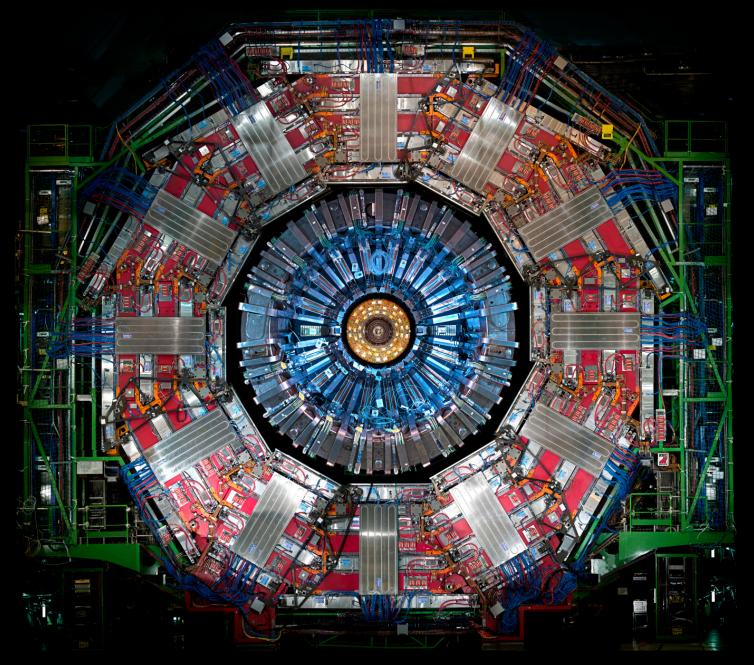


A few words on High-Energy Physics





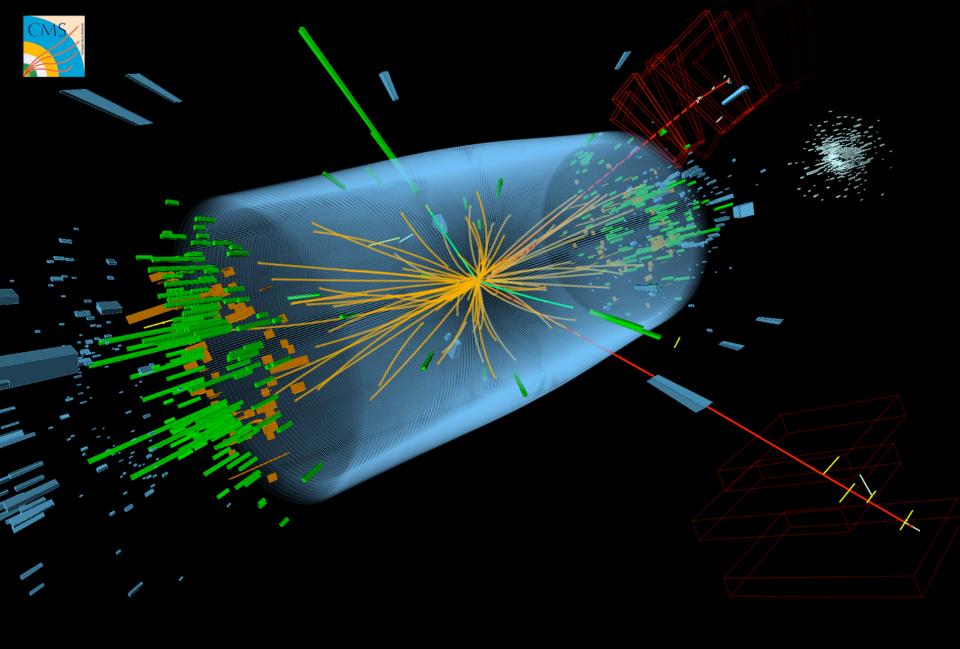
LHC: 27 Km, -271.25°C, 99.999999% speed of light



Four "detectors"



CMS collaboration: 3000 scientists, 85 countries



Discovery of the Higgs boson



Contents lists available at SciVerse ScienceDirect

Physics Letters B

www.elsevier.com/locate/physletb



Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC $^{\mbox{\tiny \pm}}$

CMS Collaboration *

CERN. Switzerland

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

ARTICLE INFO

Article history: Received 31 July 2012 Received in revised form 9 August 2012 Accepted 11 August 2012 Available online 18 August 2012 Editor: W.-D. Schlatter

Keywords CMS Physics Higgs

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 IHC, 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: yy, ZZ, $W^{\dagger}W^{\dagger}$, $z^{\dagger}+z^{\dagger}$, and bb. 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, yy and ZZ; aft to these signals gives a mass of 125.3±0.4(stat.) ±0.5(syst.) GeV. The decay to two photons indicates that the new particle is a boson with spin different from one.

© 2012 CERN. Published by Elsevier B.V. All rights reserved.

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 electromagnetic and weak interactions are unified in the electromagnetic heory. 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 VM 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 $m_{\rm H}$ of the SM Higgs boson is not predicted by theory. However, general considerations [10–13] suggest that

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 $\sqrt{s}=7\,{\rm FeV}$. 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

 $m_{\rm H}$ should be smaller than ~ 1 TeV, while precision electroweak measurements imply that $m_{\rm H} < 152$ 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 $m_{\rm H} > 114.4$ 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.

^{* ©} CERN for the benefit of the CMS Collaboration.

^{*} E-mail address: cms-publication-committee-chair@cern.ch

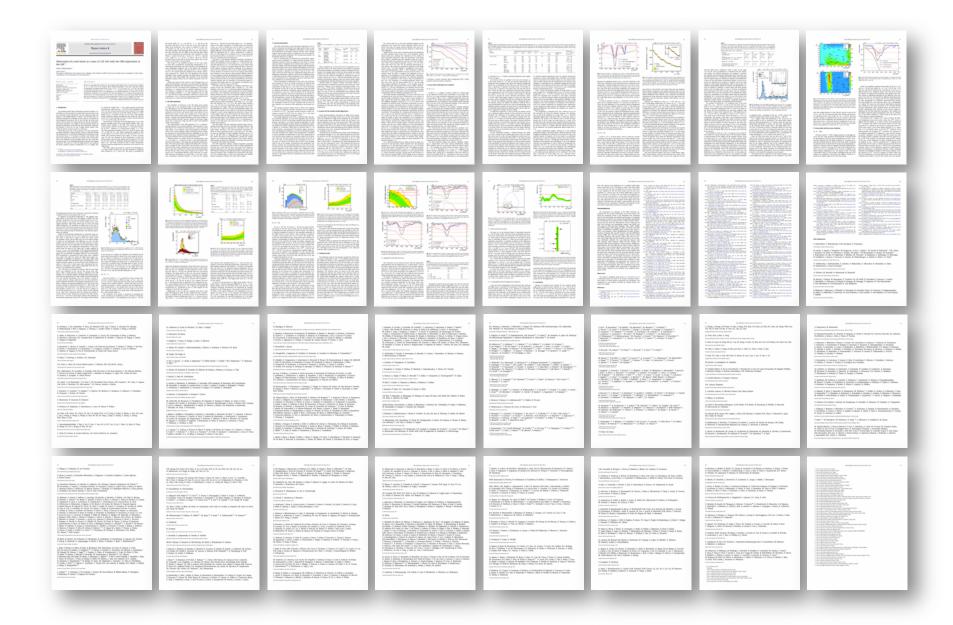
0370-2693/ © 2012 CERN. Published by Elsevier B.V. All rights reserved. http://dx.doi.org/10.1016/j.physletb.2012.08.021

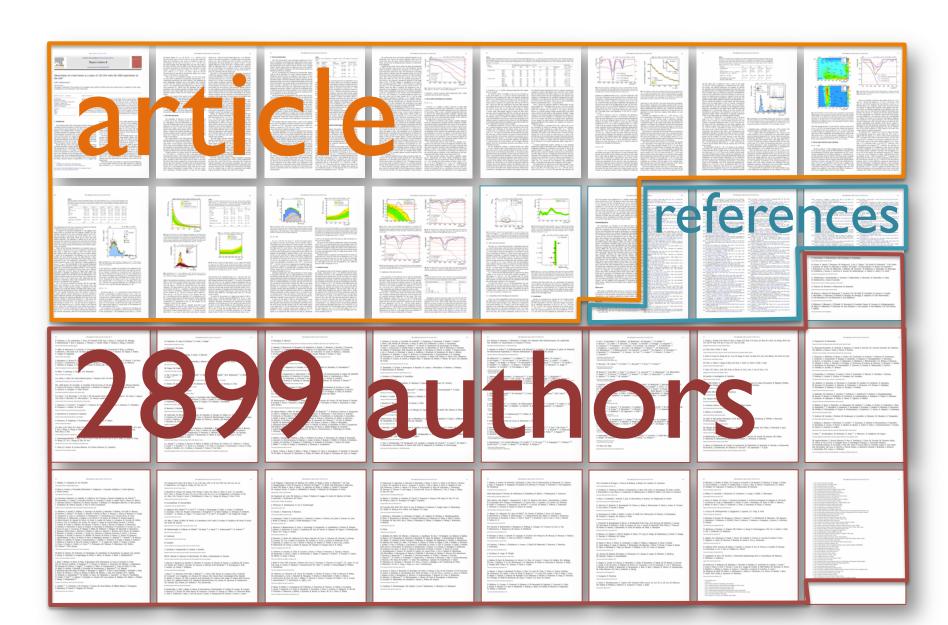
Open access

This article is published Open Access at sciencedirect.com. It is distributed under the terms of the Creative Commons Attribution License 3.0, which permits unrestricted use, distribution, and reproduction in any medium, provided the original authors and source are credited.

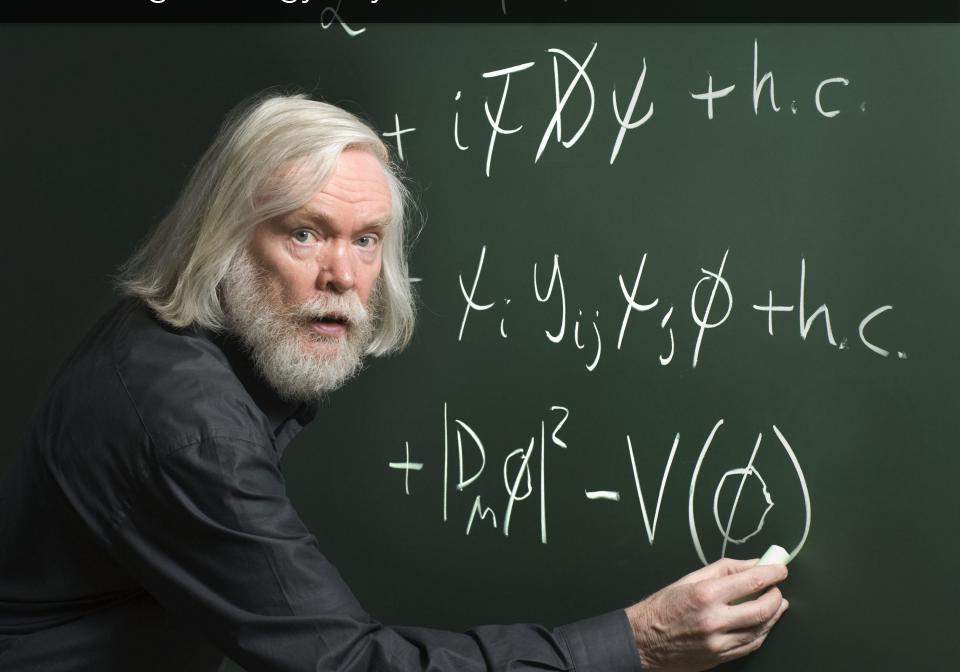
[©] CERN for the benefit of the CMS Collaboration.

^{*} E-mail address: cms-publication-committee-chair@cern.ch.





90% High-Energy Physics articles:<5 authors (theorists)



Physics Letters B 716 (2012) 30-61



Contents lists available at SciVerse ScienceDirect

Physics Letters B

www.elsevier.com/locate/physletb



CMS Collaboration *

CERN, Switzerland

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

ARTICLE INFO

Article history: Received 31 July 2012 Received in revised form 9 August 2012 Accepted 11 August 2012 Available online 18 August 2012 Editor: W.-D. Schlatter

Keywords CMS Physics Higgs

ARSTRACT

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; γy , Z, W^+W^- , $\tau^+\tau^-$, and bb. 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, γy and Z; 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 soin different from one

© 2012 CERN, Published by Elsevier B.V. All rights reserved.

1. Introduction

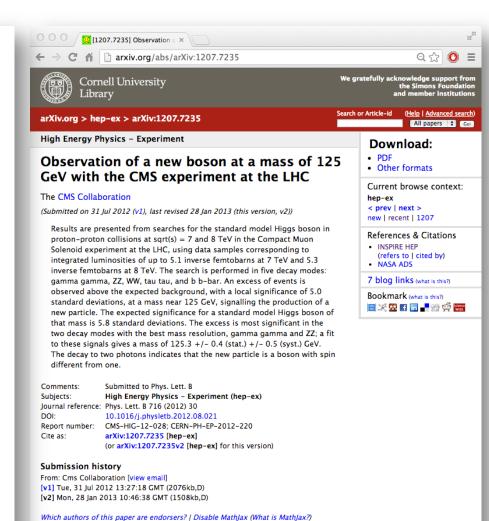
The standard model (SM) of elementary particles provides a remarkably accurate description of results from many accelerator and non-accelerator based experiments. The SM comprises quarks and leptons as the building blocks of matter, and describes their interactions through the exchange of force carriers: 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 VM 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 $m_{\rm H}$ of the SM Higgs boson is not predicted by theory. However, general considerations [10–13] suggest that

0370-2693/ © 2012 CERN. Published by Elsevier B.V. All rights reserved. http://dx.doi.org/10.1016/j.physletb.2012.08.021 $m_{\rm H}$ should be smaller than ~ 1 TeV, while precision electroweak measurements imply that $m_{\rm H} < 152$ 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 $m_{\rm H} > 114.4$ 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 $\sqrt{s} = 7 \, \text{TeV}$. The CMS experiment excluded at 95% CL a range of masses from 127 to 600 GeV [21]. The ATLAS experiment excluded at 95% CL the ranges 111.4–116.6, 119.4–122.1 and 129.2–541 GeV [22]. Within the remaining allowed mass region, an excess of events near 125 GeV was reported by both experiments. In 2012 the proton–proton centre-of-mass energy was increased to 8 TeV and by the end of June an additional integrated luminosity of more than 5 fb^{-1} had been recorded by each of these experiments, thereby enhancing significantly the sensitivity of the search for the Hieres bason.

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



>97% of yearly HEP journal content is in arXiv.org

Link back to: arXiv, form interface, contact.

^{* ©} CERN for the benefit of the CMS Collaboration.

^{*} F-mail address: cms-publication-committee-chair@cern.ch

The preprints story





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



...HEP researchers wrote papers...



...passed them through the cyclostyle...



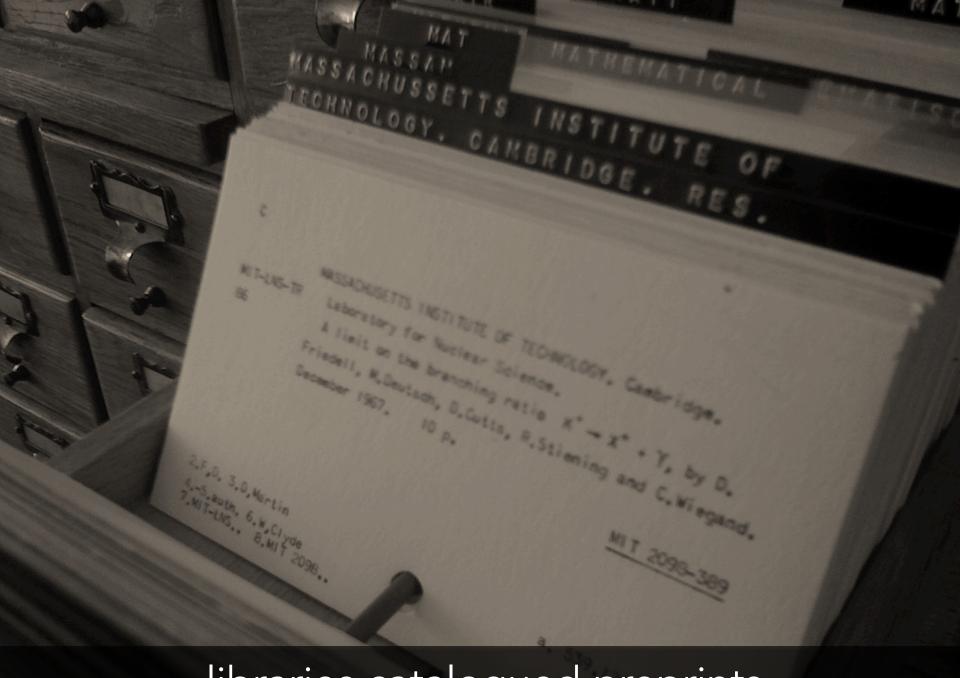
...then mailed them to journals AND colleagues...



...other scientists read these preprints...



...in the year(s) it took to review, print, ship journals...



...libraries catalogued preprints...



... into (physical) Open Access repositories...



...and computerized lists of preprints...

CERN DD/OC

Tim Berners-Lee, CERN/DD

Information Management: A Proposal

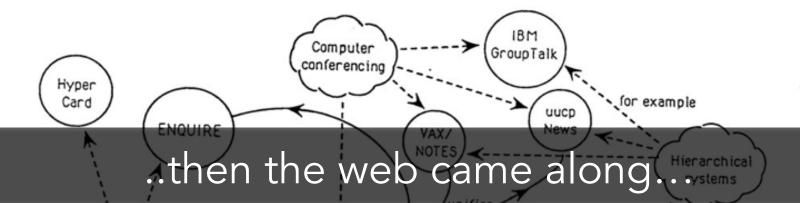
March 1989

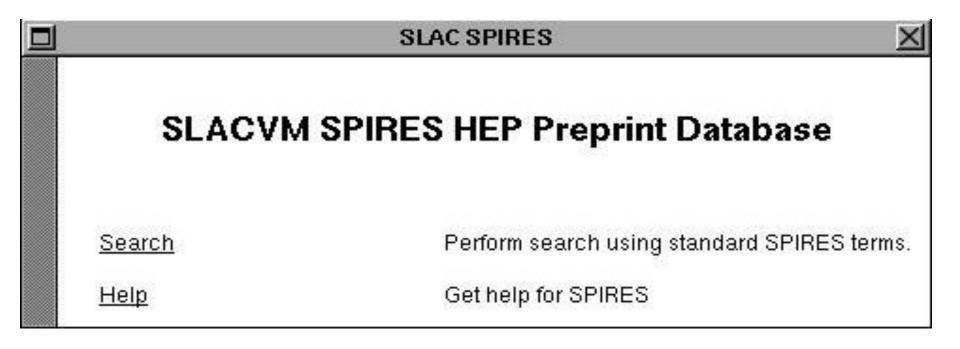
Information Management: A Proposal

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 system.

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

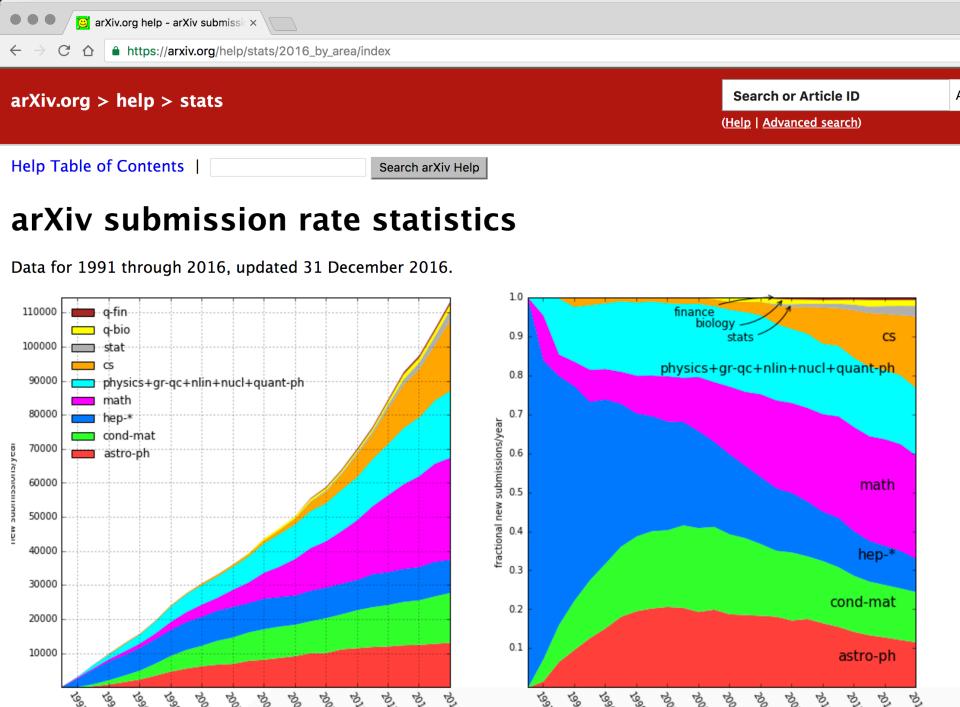




...computerized list of preprints/publication info: first web site in the U.S....



... and arXiv went from e-mail listserv to web-based



97% of HEP journals' yearly content is in arXiv.org From 1991, this is 60% of the total ever published

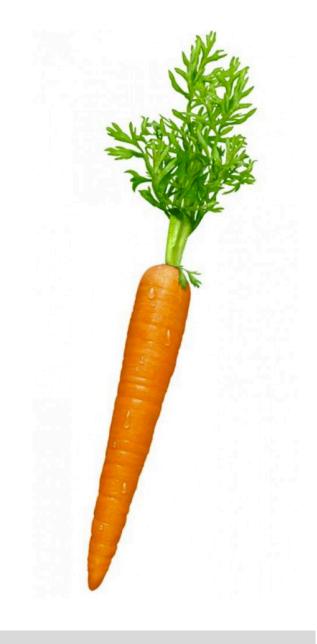
% of top-5 HEP journals available as pre-prints in arXiv 100% 90% 80% 70% 60% 50% 40% 30% 20% 10% 0% (99) (99) (993 (994 (995 (996 (991 (998 (999 200) 200) 200) 2003 2004 2005 2006 2001 2008

Why is Green Open Access successful?





Mandates...



...or incentives?



Speed

March 4, 1997

Building the World's Largest Scientific Database

By BRUNO GIUSSANI

EUROBYTES



MSTERDAM -- Confronted with rising pressure on profit margins, increasing printing and distribution costs and growing enthusiasm among physicians and other scientists for the Internet as an information resource, Reed Elsevier, the Anglo-Dutch publishing group, came to realize it had "almost no alternative," says Karen Hunter.

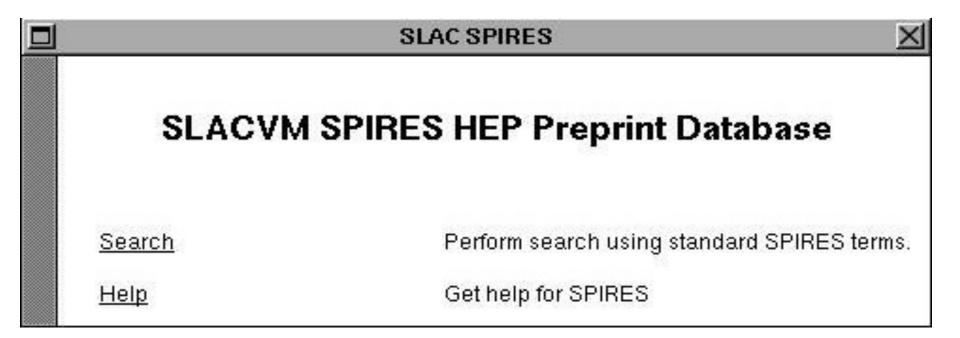
"We want to have our journals on the desktop of our readers and get our information to more people," added Hunter, Elsevier's Vice President for Strategic Planning.

While other scientific publishers begin to re-think their strategies to include the Internet, Reed-Elsevier's move is likely to be regarded as a turning point: Later this month the company is starting the operational testing of ScienceDirect, its new online venture, which will eventually become the world's largest scientific database.

The aim is to make the full text of all 1,200 Elsevier science journals available on the World Wide Web this year. "We'll go live by July 1st with about 350 biomedical journals, then add the other titles throughout the year,"







List of HEP Preprints and publication info first web site in the U.S. and first database on the web



Welcome to INSPIRE, the High Energy Physics information system. Please direct questions, comments or concerns to feedback@inspirehep.net.



:: HepNames :: Institutions :: Conferences :: Jobs :: Experiments :: Journals :: Help

HEP Search

High-Energy Physics Literature Database

Use "find " for SPIRES-style search (other tips)

Brief format

Searc

inspirehep.net

Easy Search Advanced Search

find j "Phys.Rev.Lett.,105*" :: more

How to SEARCH

SPIRES syntax is (mostly) supported (requires "find")

find a richter, b and t quark and date > 1984

find j phys.rev.,D50,1140 or j jhep,0903,112 find eprint arxiv:1007.5048 (Note the plots available on the detailed record)

find fulltext "quark-gluon plasma" (Note new "fulltext" operator)

find a ellis and refersto a witten (Note "refersto")

find a kane and citedby title SUSY and topcite 200+ (Note "citedby")

New techniques:

1985 richter quark multiplicity

arXiv:1007.5048

citedby:author:ellis -refersto:author:witten

author:randall | author:sundrum cited:450->1350

Additional Help:

More search tips and full help

INSPIRE UPDATES

See our blog at blog.inspirehep.net for updates on new features and other news. You can also follow us at @inspirehep on twitter. To send us feedback use feedback@inspirehep.net. The data in INSPIRE is updated daily. To request corrections to data in INSPIRE, write us at help@inspirehep.net. INSPIRE superseded SPIRES in 2012.

HEP

Additions Corrections

Search Tips

FAQ

Topcites: annual | recent

Reviews

HEP Citesummary

Tools

INSPIRE

About INSPIRE

INSPIRE Help Central

Blog

Twitter

feedback@inspirehep.net

RESOURCES

ADS

arXiv

HepData

INIS

PDG

PDG review of online resources

INSPIRE News

2017-01-23 After PDG, @ATLASexperiment @CMSexperiment and @Planck had the top cited papers in INSPIRE during 2016 https://t.co/t8Q11cXCv4

2017-01-23 Check out the annual topcites for 2016: https://t.co/t8QI1cXCv4 #Blog_Post 2017-01-13 Find full collaboration papers

using "author count" (ac): https://t.co/HjdBEKYCN4 1.2m records, half a century of HEP

500 Copen Access papers

20m citation triples

>25k disambiguated authors

>50 users (all HEP folks)

>2 searches/second













Welcome to INSPIRE, the High Energy Physics information system. Please direct questions, comments or concerns to feedback@inspirehep.ne

HEPNAMES :: INSTITUTIONS :: CONFERENCES :: JOBS :: EXPERIMENTS :: JOURNALS :: HELP

References (36)

Citations (663)

Combined Measurement of the Higgs Boson Mass in pp Collisions at $\sqrt{s} = 7$ and 8 TeV with the ATLAS and **CMS Experiments**

ATLAS and CMS Collaborations (Georges Aad (Marseille, CPPM) et al.) Show all 5154 authors

Mar 26, 2015 - 45 pages

Phys.Rev.Lett. 114 (2015) 191803

(2015-05-14)

DOI: 10.1103/PhysRevLett.114.191803

Conference: C15-08-04 **Proceedings**

ATLAS-HIGG-2014-14, CMS-HIG-14-042, CERN-PH-EP-2015-075

e-Print: arXiv:1503.07589 [hep-ex] | PDF Experiment: CERN-LHC-ATLAS, CERN-LHC-CMS

Abstract (arXiv)

A measurement of the Higgs boson mass is presented based on the combined data samples of the ATLAS and CMS experiments at the CERN LHC in the $H \to \gamma\gamma$ and $H \to ZZ \to 4\ell'$ decay channels. The results are obtained from a simultaneous fit to the reconstructed invariant mass peaks in the two channels and for the two experiments. The measured masses from the individual channels and the two experiments are found to be consistent among themselves. The combined measured mass of the Higgs boson is $m_H = 125.09 \pm 0.21$ (stat.) ± 0.11 (syst.) GeV.

Note: Submitted to Physical Review Letters. Figures and auxiliary material are available at https://atlas.web.cem.ch/Atlas/GROUPS/PHYSICS/PAPERS/HIGG-2014-14 and https://twiki.cern.ch/twiki/bin/view/CMSPublic/Hig14042PaperTwiki Keyword(s): INSPIRE: p p: scattering | p p: colliding beams | Higgs particle: mass: measured | Higgs particle: decay modes | Higgs particle: radiative decay | Z0: leptonic decay | ATLAS | CMS | CERN LHC Coll | CERN Lab | experimental results | Higgs particle --> 2photon | Higgs particle --> 2Z0 | Z0 --> lepton+ lepton- | 7000 GeV-cms8000 GeV-cms







Show more plots

Record added 2015-03-27, last modified 2017-01-16

CERN Document Server

⇒ Export



Welcome to INSPIRE, the High Energy Physics information system. Please direct questions, comments or concerns to feedback@inspirehep.net

HEPNAMES :: INSTITUTIONS :: CONFERENCES :: JOBS :: EXPERIMENTS :: JOURNALS :: HELP

Information

References (36)

Citations (663)

Plots

Combined Measurement of the Higgs Boson Mass in pp Collisions at $\sqrt{s} = 7$ and 8 TeV with the ATLAS and CMS Experiments - ATLAS and CMS Collaborations (Aad, Georges et al.) Phys.Rev.Lett. 114 (2015) 191803 arXiv:1503.07589 [hep-ex] ATLAS-HIGG-2014-14, CMS-HIG-14-042, CERN-PH-EP-2015-075

Update these references

- [1] Broken Symmetry and the Mass of Gauge Vector Mesons Englert, F. et al. Phys.Rev.Lett. 13 (1964) 321-323
- [2] Broken symmetries, massless particles and gauge fields Higgs, Peter W. Phys.Lett. 12 (1964) 132-133
- Broken Symmetries and the Masses of Gauge Bosons Higgs, Peter W. Phys.Rev.Lett. 13 (1964) 508-509
- Global Conservation Laws and Massless Particles Guralnik, G.S. et al. Phys.Rev.Lett. 13 (1964) 585-587
- Spontaneous Symmetry Breakdown without Massless Bosons Higgs, Peter W. Phys.Rev. 145 (1966) 1156-1163
- Symmetry breaking in nonAbelian gauge theories Kibble, T.W.B. Phys.Rev. 155 (1967) 1554-1561
- Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC ATLAS Collaboration (Aad, Georges et al.) Phys.Lett. B716 (2012) 1-29 arXiv:1207.7214 [hep-ex] CERN-PH-EP-2012-218
- Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC CMS Collaboration (Chatrchyan, Serguei et al.) Phys.Lett. B716 (2012) 30-61 arXiv:1207.7235 [hep-ex] CMS-HIG-12-028, CERN-PH-EP-2012-220
- Observation of a new boson with mass near 125 GeV in pp collisions at \sqrt{s} = 7 and 8 TeV CMS Collaboration (Chatrchyan, Serguei et al.) JHEP 1306 (2013) 081 arXiv:1303.4571 [hep-ex] CMS-HIG-12-036, CERN-PH-EP-2013-035
- [10] Measurements of Higgs boson production and couplings in diboson final states with the ATLAS detector at the LHC ATLAS Collaboration (Aad, Georges et al.) Phys.Lett. B726 (2013) 88-119, Erratum: Phys.Lett. B734 (2014) 406-406 arXiv:1307.1427 [hep-ex] CERN-PH-EP-2013-103
- [11] Evidence for the spin-0 nature of the Higgs boson using ATLAS data ATLAS Collaboration (Aad, Georges et al.) Phys.Lett. B726 (2013) 120-144 arXiv:1307.1432 [hep-ex] CERN-PH-EP-2013-102
- [12] Precise determination of the mass of the Higgs boson and tests of compatibility of its couplings with the standard model predictions using proton collisions at 7 and 8 TeV CMS Collaboration (Khachatryan, Vardan et al.) Eur.Phys.J. C75 (2015) no.5, 212 arXiv;1412.8662 [hep-ex] CMS-HIG-14-009, CERN-PH-EP-2014-288
- [13] Constraints on the spin-parity and anomalous HVV couplings of the Higgs boson in proton collisions at 7 and 8 TeV CMS Collaboration (Khachatryan, Vardan et al.) Phys.Rev. D92 (2015) no.1, 012004 arXiv:1411.3441 [hep-ex] CMS-HIG-14-018, CERN-PH-EP-2014-265
- [14] Measurement of the Higgs boson mass from the $H o \gamma \gamma$ and $H o ZZ^* o 4\ell$ channels with the ATLAS detector using 25 fb⁻¹ of pp collision data ATLAS Collaboration (Aad, Georges et al.) Phys.Rev. D90 (2014) no.5, 052004 arXiv:1406.3827 [hep-ex] CERN-PH-EP-2014-122
- [15] Observation of the diphoton decay of the Higgs boson and measurement of its properties CMS Collaboration (Khachatryan, Vardan et al.) Eur. Phys. J. C74 (2014) no.10, 3076 arXiv:1407.0558 [hepex] CMS-HIG-13-001, CERN-PH-EP-2014-117
- [16] Measurement of the properties of a Higgs boson in the four-lepton final state CMS Collaboration (Chatrchyan, Serguei et al.) Phys.Rev. D89 (2014) no.9, 092007 arXiv:1312.5353 [hep-ex] CMS-HIG-13-002, CERN-PH-EP-2013-220
- [17] The global electroweak fit at NNLO and prospects for the LHC and ILC Gfitter Group (Baak, M. et al.) Eur. Phys. J. C74 (2014) 3046 arXiv:1407.3792 [hep-ph] DESY-14-124
- [18] Resonance continuum interference in the diphoton Higgs signal at the LHC Dixon, Lance J. et al. Phys.Rev.Lett. 90 (2003) 252001 hep-ph/0302233 SLAC-PUB-9654
- [19] Shift in the LHC Higgs diphoton mass peak from interference with background Martin, Stephen P. Phys.Rev. D86 (2012) 073016 arXiv:1208.1533 [hep-ph] FERMILAB-PUB-12-866-T
- [20] Bounding the Higgs Boson Width Through Interferometry Dixon, Lance J. et al. Phys.Rev.Lett. 111 (2013) 111802 arXiv:1305.3854 [hep-ph]
- [21] Inadequacy of zero-width approximation for a light Higgs boson signal Kauer, Nikolas et al. JHEP 1208 (2012) 116 arXiv:1206.4803 [hep-ph]
- [22] The ATLAS Experiment at the CERN Large Hadron Collider ATLAS Collaboration (Aad, G. et al.) JINST 3 (2008) S08003
- [23] The CMS experiment at the CERN LHC CMS Collaboration (Chatrchyan, S. et al.) JINST 3 (2008) S08004
- [24] Measurement of Higgs boson production in the diphoton decay channel in pp collisions at center-of-mass energies of 7 and 8 TeV with the ATLAS detector ATLAS Collaboration (Aad, Georges et al.) Phys.Rev. D90 (2014) no.11, 112015 arXiv:1408.7084 [hep-ex] CERN-PH-EP-2014-198
- [25] Procedure for the LHC Higgs boson search combination in summer 2011 ATLAS Collaboration ATL-PHYS-PUB-2011-011, ATL-COM-PHYS-2011-818, CMS-NOTE-2011-005
- [26] Asymptotic formulae for likelihood-based tests of new physics Cowan, Glen et al. Eur.Phys.J. C71 (2011) 1554, Erratum: Eur.Phys.J. C73 (2013) 2501 arXiv:1007.1727 [physics.data-an]
- Wouter et al. eConf C0303241 (2003) MOLT007 physics/0306116 CHEP-2003-MOLT007

Open "inspirehep.net/record/1356276/references" in a new tab S ACAT2010 (2010) 057 arXiv:1009.1003 [physics.data-an]





Welcome to INSPIRE, the High Energy Physics information system. Please direct questions, comments or concerns to feedback@inspirehep.net.

HEP :: HEPNAMES :: INSTITUTIONS :: CONFERENCES :: JOBS :: EXPERIMENTS :: JOURNALS :: HELP

Mele, Salvatore

View Profile

Manage Profile

Manage Publications

Help

(1) (1) (1) (1) (1) (1)

Profile Name

STATS

Q Search

O 2017-01-25 15:56:33

Published

PERSONAL INFORMATION

Personal Details (HepNames)			
Name	Salvator	re Mele	
Current Institution	CERN		
E-mail	salvator	re.mele@cern.ch	
Links	https://p	honebook.cern.ch/foun	
Experiments	CERN-L	EP-L3	
Identifiers	BAI: S.Mele.1 INSPIRE: INSPIRE-00302474 ORCID: 0000-0003-0762-2235 arXiv: mele_s_1		
Period	Rank	Institution	
		CERN	

Update Details

Name Variants	
Mele, Salvatore (24) Mele, S. (259)	

Affiliations	
CERN (40) INFN, Naples (24) Naples U. (13)	

PUBLICATIONS AND OUTPUT

Publications Datasets External

- 1. Status Report of the DPHEP Collaboration: A Global Effort for Sustainable Data Preservation in High Energy Physics
- 2. The Measurement of the Number of Light Neutrino Species at LEP
- 3. Electroweak Measurements in Electron-Positron Collisions at W-Boson-Pair
- 4. Search for Charged Higgs bosons: Combined Results Using LEP Data
- 5. Status Report of the DPHEP Study Group: Towards a Global Effort for
- Sustainable Data Preservation in High Energy Physics 6. Authormagic in INSPIRE Author Disambiguation in Scholarly Communication
- 7. Test of the \boldmath{ τ }-Model of Bose-Einstein Correlations and
- Reconstruction of the Source Function in Hadronic Z-boson Decay at LEP 8. Generalized event shape and energy flow studies in e+ e- annihilation at s**
- (1/2) = 91.2-GeV 208.0-GeV 9. INSPIRE: Realizing the dream of a global digital library in High-Energy Physics

Papers

10. Observation of a VHE cosmic-ray flare-signal with the L3+C muon

Click here to see all

Co-Authors

L.Lista.1 (5) C.Sciacca.1 (4) G.Carlino.1 (4) N.Cavallo.1 (4) P.Igo.Kemenes.1 (4) P.Paolucci.1 (4) A.Buzzo.1 (3) A.Calcaterra.1 (3) A.G.Holzner.1 (3) A.Holtkamp.1 (3) more

	All	Single
	papers	authored
All papers	283	20
Book	0	0
ConferencePape	r 27	16
Introductory	0	0
Lectures	0	0
Published	240	3
Review	14	1
Thesis	0	0
Proceedings	0	0

Subject Categories

Experiment-HEP (248) Computing (11)

Frequent Keywords

CERN LEP Stor (227) electron positron: colliding beams

Citations	Summary

283 papers found, 269 of them citeable (published or arXiv)

Citeable

	papers	only
Number of papers analyzed:	269	240
Number of citations:	16314	14145
Citations per paper (average):	60.6	58.9
h _{HEP} index [?]	56	53

Breakdown of papers by citations:

Distance of papers by chance		
	Citeable papers	Published only
Renowned papers (500+)	5	4
Famous papers (250-499)	2	0
Very well-known papers (100-249)	14	10
Well-known papers (50-99)	44	43
Known papers (10-49)	150	144
Less known papers (1-9)	48	38
Unknown papers (0)	6	1

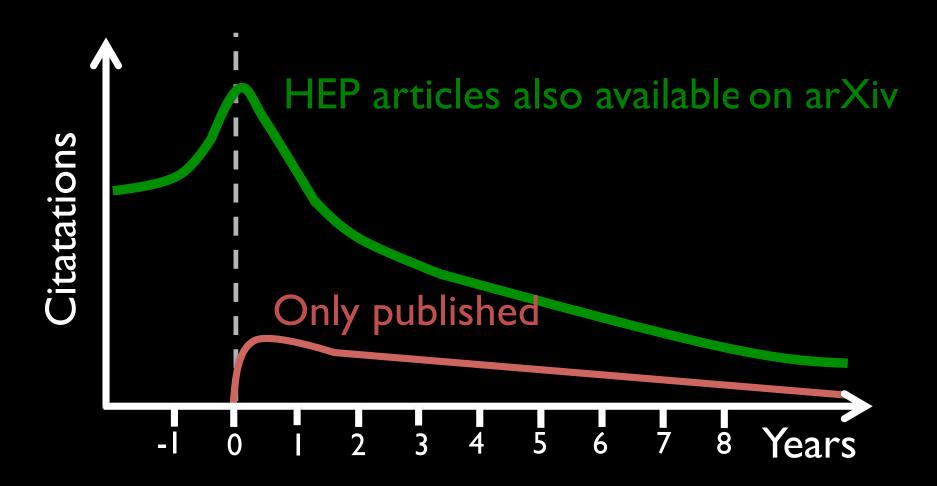
Click here to view statistics without self-citations or RPP

Warning: The citations count should be interpreted with great care. Read the fine print

The impact of Green Open Access

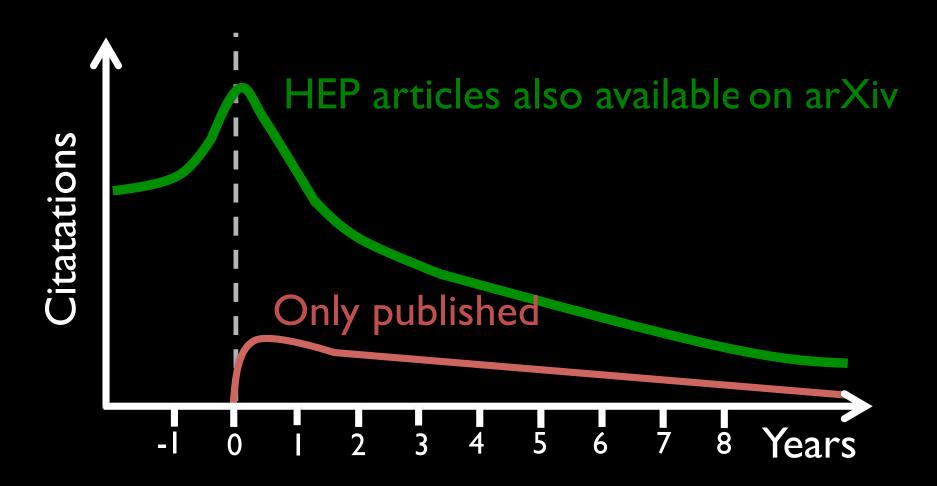








Speed



C

Sign on

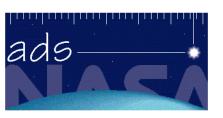
Feedback FAQ

What's new Site Map

Other NASA Centers

HEASARC **IRSA** MAST

NED NSSDC PDS SPITZER



The SAO/NASA Astrophysics Data System



Welcome to the Digital Library for Physics and Astronomy



Related Sites

AAS ADEC <u>arXiv</u> IAU maintains three bibliographic databases containing more than 12.4 million records covering publications in Astronomy and Astrophysics, Physics, and the arXiv e-prints. Abstracts and full-text of major astronomy and physics publications are indexed and searchable through the new ADS "Bumblebee" interface as well as the traditional "Classic" search forms. A set of browsable interfaces are also available. In addition to maintaining its bibliographic corpus, the ADS tracks citations and usage of its records to provide advanced discovery and evaluation capabilities. Integrated in its databases, the ADS provides access and

The SAO/NASA Astrophysics Data System (ADS) is a Digital Library portal for researchers in Astronomy and Physics, operated by the Smithsonian Astrophysical Observatory (SAO) under a NASA grant. The ADS

pointers to a wealth of external resources, including electronic articles available from publisher's websites, astronomical object information, data catalogs and data sets hosted by external archives. We currently have links to over 11.8 million records maintained by our collaborators.

CfA.

CfA. Chandra Harvard University Smithsonian Institution

Please note that all abstracts and articles in the ADS are copyrighted by the publisher, and their use is free for personal use only. For more information, please read our page detailing the Terms and Conditions regulating the use of our resources.

The ADS provides the myADS Update Service, a free custom notification service promoting current awareness of the recent technical literature in astronomy and physics based on each individual subscriber's queries. Every week the myADS Update Service will scan the literature added to the ADS since the last update, and will create custom lists of recent papers for each subscriber, formatted to allow quick reading and access. Subscribers are notified by e-mail in html format. As an option, users can elect to receive updates on preprints published on the arXiv e-print archive via daily emails or by subscribing to a custom RSS feed.

In 2016 the ADS Users Group (ADSUG) was established to advise the project and to recommend changes and improvements to both its services and procedures in order to maximize the scientific productivity of the community it serves. The ADSUG will advocate for the user community and provide suggestions regarding content curation, technical infrastructure, management, and priority setting.

The importance of ADS's role in supporting the scientific community has been recognized by societies and individuals. If you wish to acknowledge us in a publication, kindly use a phrase such as the following: "This research has made use of NASA's Astrophysics Data System."

Thanks!

The ADS personnel are:

Dr. Alberto Accomazzi - Principal Investigator - <u>aaccomazzi at cfa.harvard.edu</u>

(i)

0

- Dr. Michael J. Kurtz Project Scientist mkurtz at cfa.harvard.edu
- Carolyn Stern Grant IT Specialist stern at cfa.harvard.edu
- Edwin Henneken IT Specialist ehenneken at cfa.harvard.edu
- Donna Thompson Library Specialist dthompson at cfa.harvard.edu
- Dr. Roman Chyla IT Specialist rchyla at cfa.harvard.edu
- Alex Holachek IT Specialist aholachek at cfa.harvard.edu
- Stephen McDonald IT Specialist stephen.mcdonald at cfa.harvard.edu

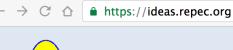
The late Stephen S. Murray served as the Principal Investigator of the project from its inception in 1993 until his passing in August 2015.

If you have comments or questions about the ADS, you are welcome to contact any of us directly, although the preferred way to get in touch with ADS staff is through our user feedback form, which guarantees a timely reply to your inquiry.

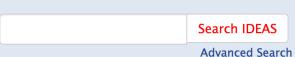








IDEAS: Economics and Finance ×



IDEAS

Papers Journals Authors Institutions Rankings Data (FRED®)

IDEAS home

Browse for material

- Working Papers
- Journals
- Software Components
- Books
- Book Chapters
- Authors
- Institutions
- Rankings
- Data (FRED®)

Find material

- JEL Classification
- NEP reports
- Subscribe to new research
- Search
- Pub compilations

What is IDEAS?

Share: 🅶 🚹 💥 👸 🙆 📲 🖂 👜

IDEAS the largest bibliographic database dedicated to Economics and available freely on the Internet. Based on RePEc, it indexes over 2,100,000 items of research, including over 2,000,000 that can be downloaded in full text.

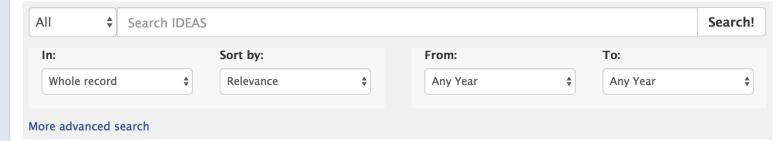
MyIDEAS: Log in (now much improved!)

This site is part of a large volunteer effort to enhance the free dissemination of research in Economics, RePEc, which includes bibliographic metadata from over 1,800 participating archives, including all the major publishers and research outlets. IDEAS is just one of several services that use RePEc data.

Authors are invited to register with RePEc to create an online profile. Then, anyone finding some of their research here can find your latest contact details and a listing of their other research. They will also receive a monthly mailing about the popularity of their works, their ranking and newly found citations.

How do I find on IDEAS what I am looking for?

The sidebar offers various ways to browse for your material: by serial, by classification, by author. You can also use the search form below, or go to the advanced search page.



Current holdings on IDEAS:

Top of page

of which



Tomorrow's Research Today

Welcome to the new SSRN Home Page. Check out the 'New Look & Feel' link above the map icon for more information.

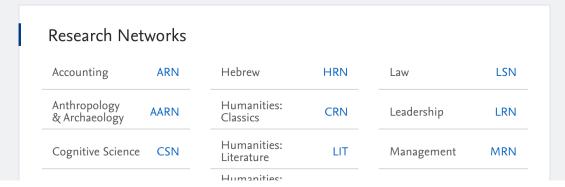
SSRN's eLibrary provides 702,460 research papers from 324,036 researchers across 24 disciplines.

Title, Abstract, Keywords & Authors

Advanced Search

New Look & Feel of Site >





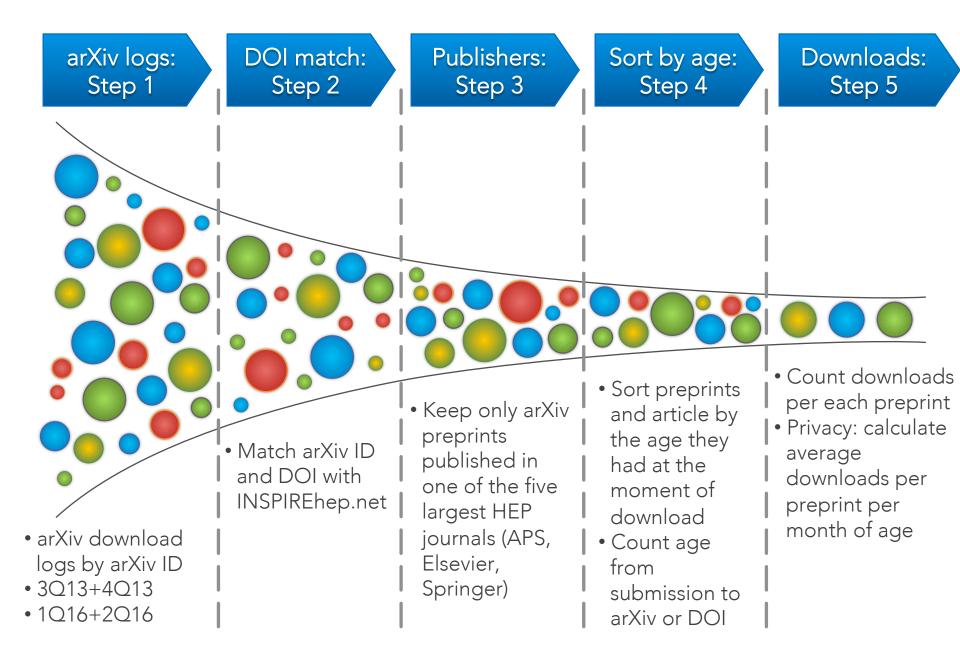


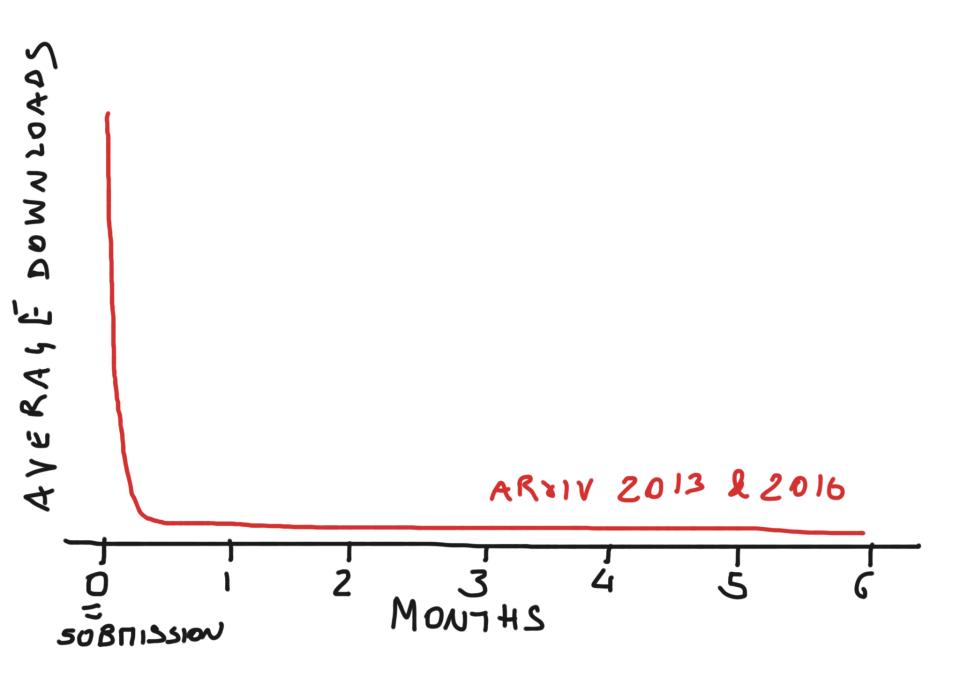
A study of arXiv downloads in High-Energy Physics

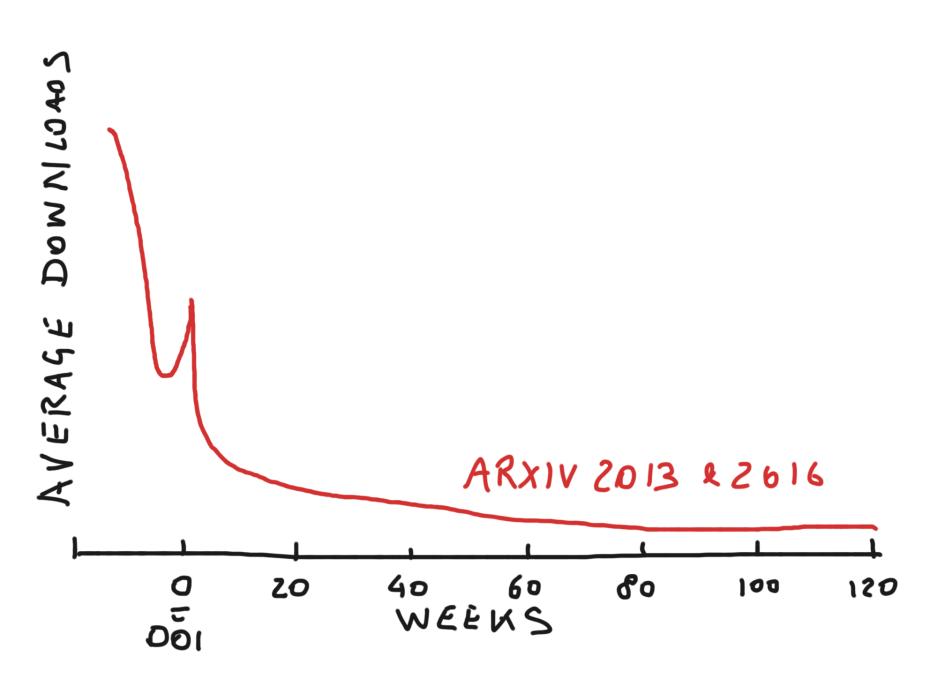




arXiv generously shared anonymized logs













Inconsistency of Minkowski higher-derivative theories

Ugo G. Aglietti, Damiano Anselmi

(Submitted on 20 Dec 2016 (v1), last revised 10 Feb 2017 (this version, v2))

We show that Minkowski higher-derivative quantum field theories are generically inconsistent, because they generate nonlocal, non-Hermitian ultraviolet divergences, which cannot be removed by means of standard renormalization procedures. By "Minkowski theories" we mean theories that are defined directly in Minkowski spacetime. The problems occur when the propagators have complex poles, so that the correlation functions cannot be obtained as the analytic continuations of their Euclidean versions. The usual power counting rules fail and are replaced by much weaker ones. Self-energies generate complex divergences proportional to inverse powers of D'Alembertians. Three-point functions give more involved nonlocal divergences, which couple to infrared effects. We illustrate the violations of the locality and Hermiticity of counterterms in scalar models and higher-derivative gravity.

Comments: 24 pages, 1 figure; v2: minor changes, EPJC

Subjects: High Energy Physics - Theory (hep-th); High Energy Physics - Phenomenology (hep-

ph)

Journal reference: Eur. Phys. J. C (2017) 77:84

10.1140/epic/s10052-017-4646-7 DOI:

arXiv:1612.06510 [hep-th] Cite as:

(or arXiv:1612.06510v2 [hep-th] for this version)

Submission history

From: Damiano Anselmi [view email]

[v1] Tue, 20 Dec 2016 05:01:39 GMT (63kb) [v2] Fri, 10 Feb 2017 16:26:07 GMT (64kb)

Download:

- PDF
- PostScript
- Other formats (license)

Current browse context:

hep-th

< prev | next > new | recent | 1612

Change to browse by:

hep-ph

References & Citations

- INSPIRE HEP (refers to | cited by)
- NASA ADS

Bookmark (what is this?)















--- February 2017, 77:84

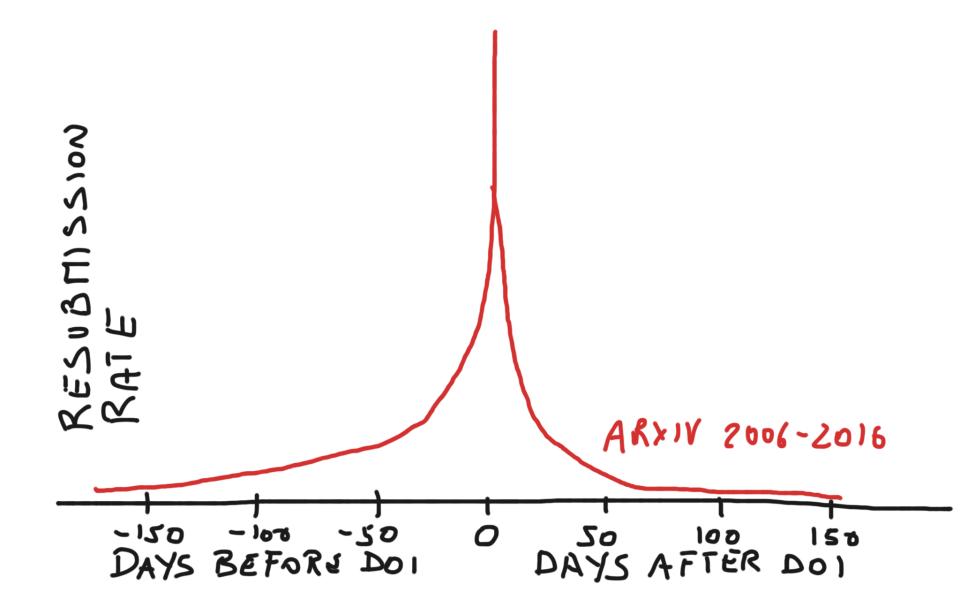


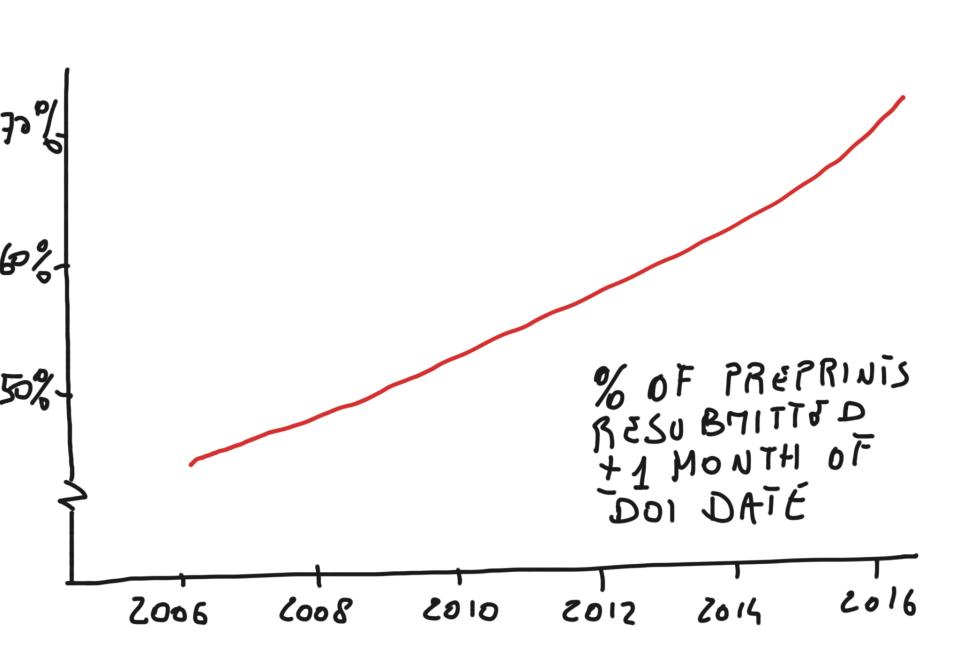
Inconsistency of Minkowski higher-derivative theories



Abstract

We show that Minkowski higher-derivative quantum field theories are generically inconsistent, because they generate nonlocal, non-hermitian ultraviolet divergences, which cannot be removed by means of standard renormalization procedures. By "Minkowski

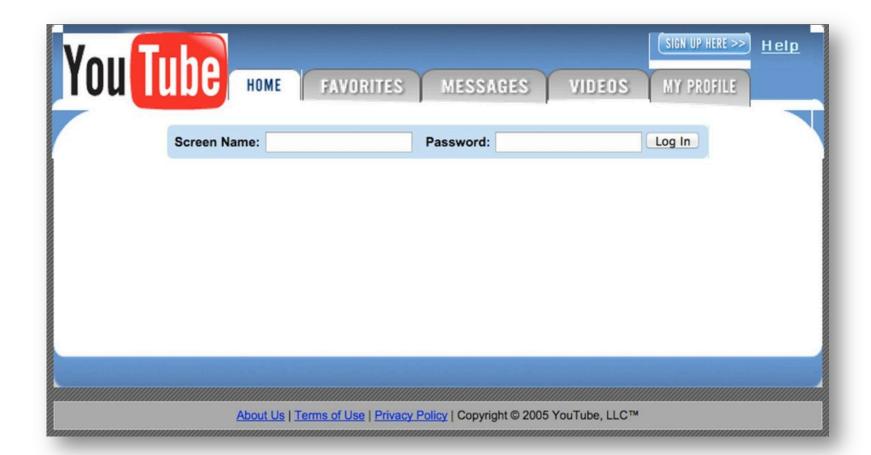




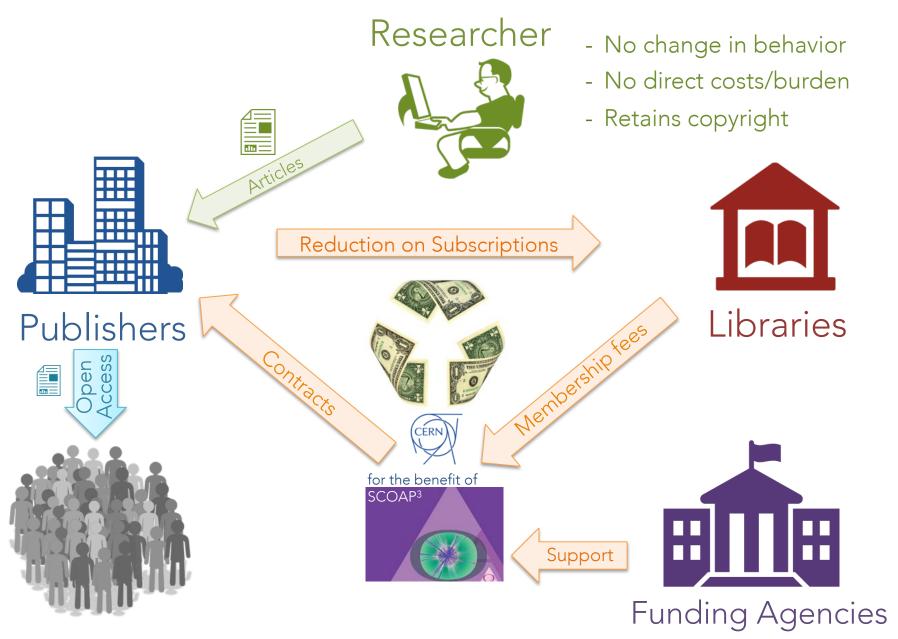
The SCOAP³ model of Gold Open Access







SCOAP³ (Sponsoring Consortium Open Access Publishing in Particle Physics)



SCOAP³ Timeline

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

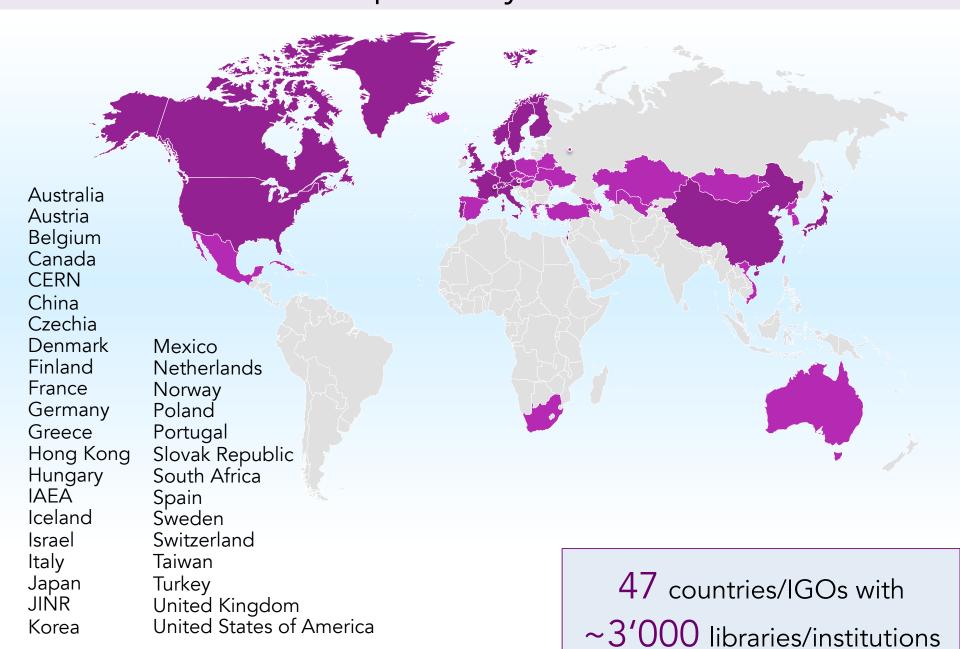
2020+ : invisible, sustainable infrastructure

SCOAP3 impact

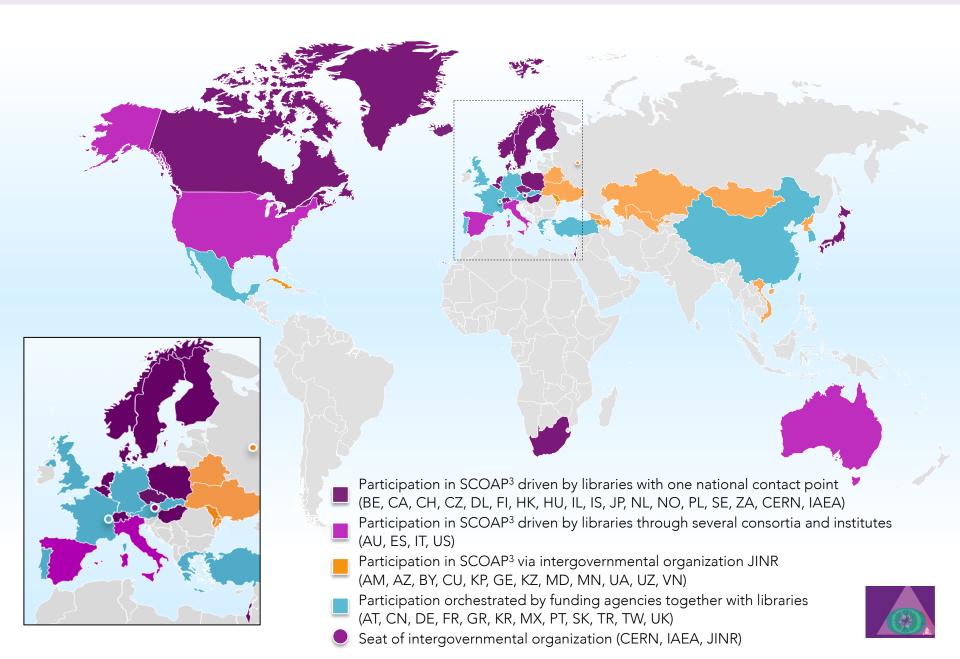
the first 3 years: 2014-2016

- 3'000+ libraries 8 funding agencies 44 countries
- 13'500+ articles by 20'000 authors in 100 countries
- 1'050€ /article (1/2-1/3 of average OA cost)
- 90% cheaper business model (recycling subscriptions)
- Up to 300% increase in article downloads (millions)

SCOAP³ Partnership Today: 44 Countries + 3 IGO

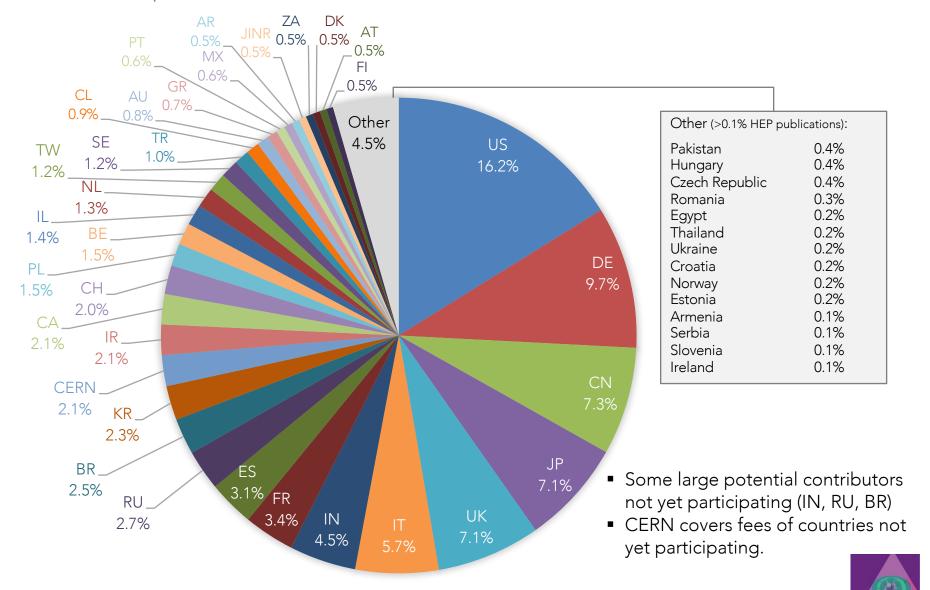


Diverse ways to participate in SCOAP³



Country membership fees scale with HEP publications

Share of HEP publications 2014-2015 (as used for SCOAP³ Phase 2)



Note: The first phase of SCOAP3 (2014-2016) was based on the share of HEP publications 2005-2006.

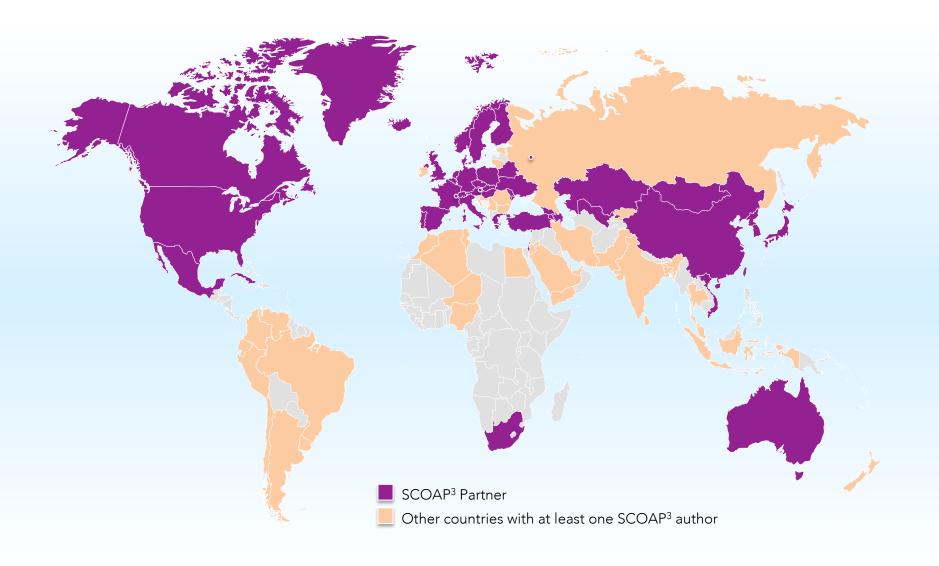
SCOAP3 '14-'16: 4,500 articles/year Theory and Experiment, from all over the world

Publi	sher	Journal	Articles 2014 – 2016
		Nuclear Physics B	991
ELSEVIE	R	Physics Letters B	2,697
W Hind	dawi	Advances in High Energy Physics	490
		Chinese Physics C	96
Publishing		Journal of Cosmology & Astroparticle Physics	655
	lacklacklacklacklacklack dpg	New Journal of Physics	27
jagiellonian i in krakow	UNIVERSITY	Acta Physica Polonica B	58
OXFORD UNIVERSITY PRESS	<u>IP's</u>	Progress of Theoretical & Experimental Physics	222
Springer		European Physical Journal C	1,817
		Journal of High Energy Physics	6,315

Total number of articles funded during Phase 1*: 13,349

Average SCOAP³ cost-per-article ~1′050 €

20'000 authors from ~100 countries, no APC barriers





The impact of Gold Open Access in High-Energy Physics



SCOAP³ doubles Elsevier/Springer HEP download

Comparing 2015 and 2013 (before SCOAP3)

- Elsevier & SpringerNature download counts
- Downloads in ScienceDirect and SpringerLink doubled for journals participating in SCOAP³
- Downloads from all over the world



Visualization of the origin of PLB downloads

See for Elsevier: http://elsevier.com/connect/scoap3-and-elsevier-extend-open-access-initiative-for-3-more-years
See for Springer: http://springersource.com/scoap3-extends-open-access-initiative-through-2019/

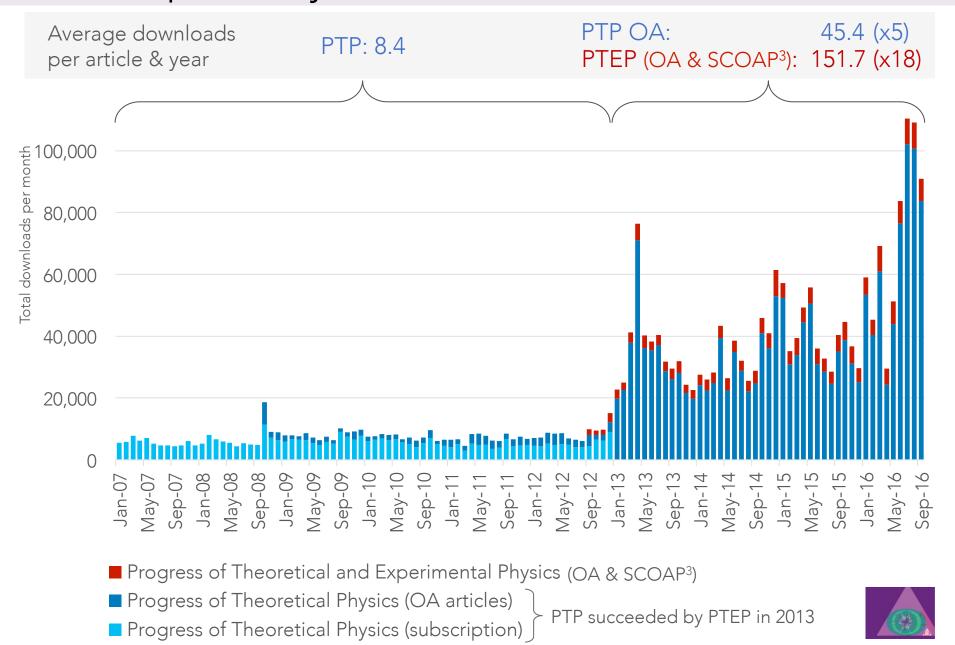
Open Access articles drive downloads

- SCOAP³ articles account for
 - o 3% for the 2 Elsevier journals^a (downloads doubled)
 - o 30% for the 2 Springer journals^b (downloads doubled)

 $^{^{\}rm a}$ ~2,500 SCOAP3 articles compared to ~81,000 articles in total

 $^{^{\}rm b}$ ~5,300 SCOAP3 articles compared to ~18,000 articles in total

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

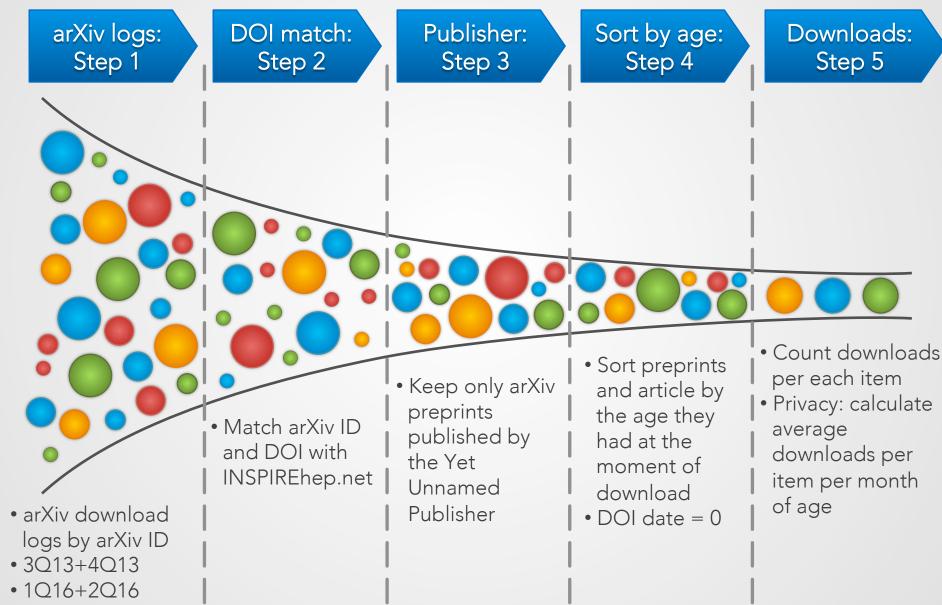


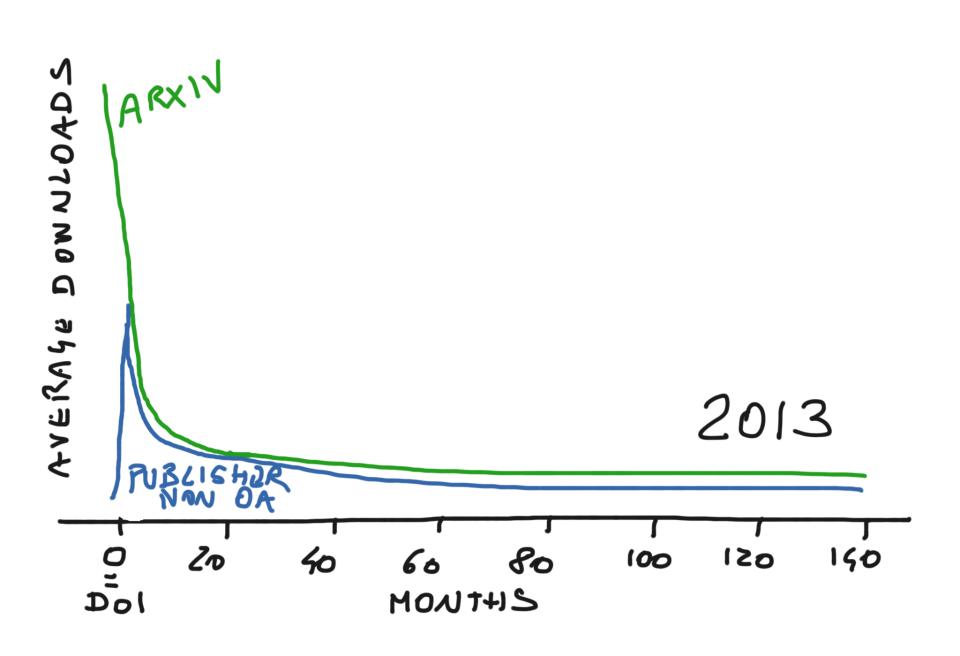
Comparing downloads of Toll Access, Green, and Gold Open Access in High-Energy Physics

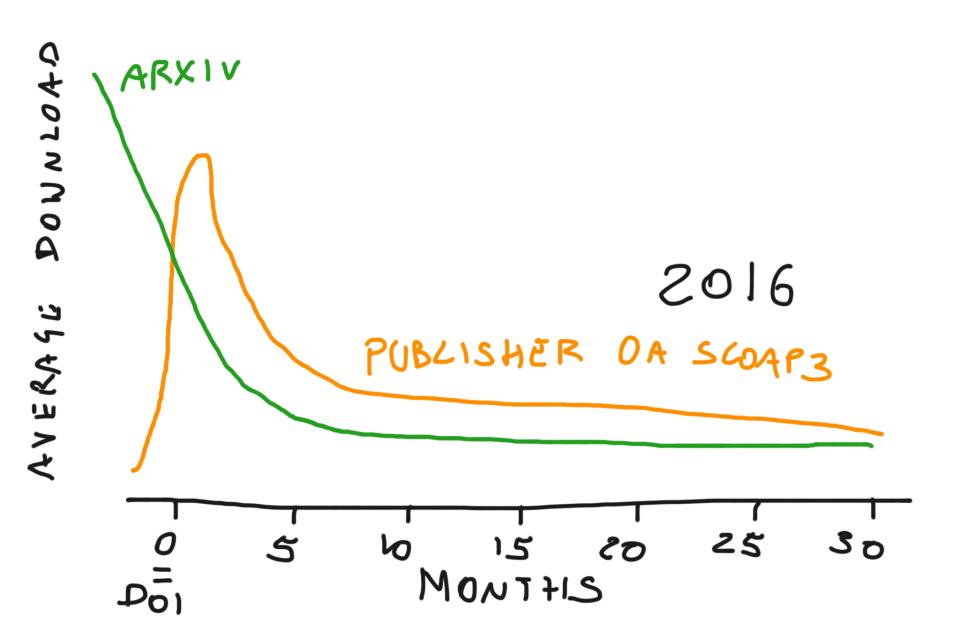


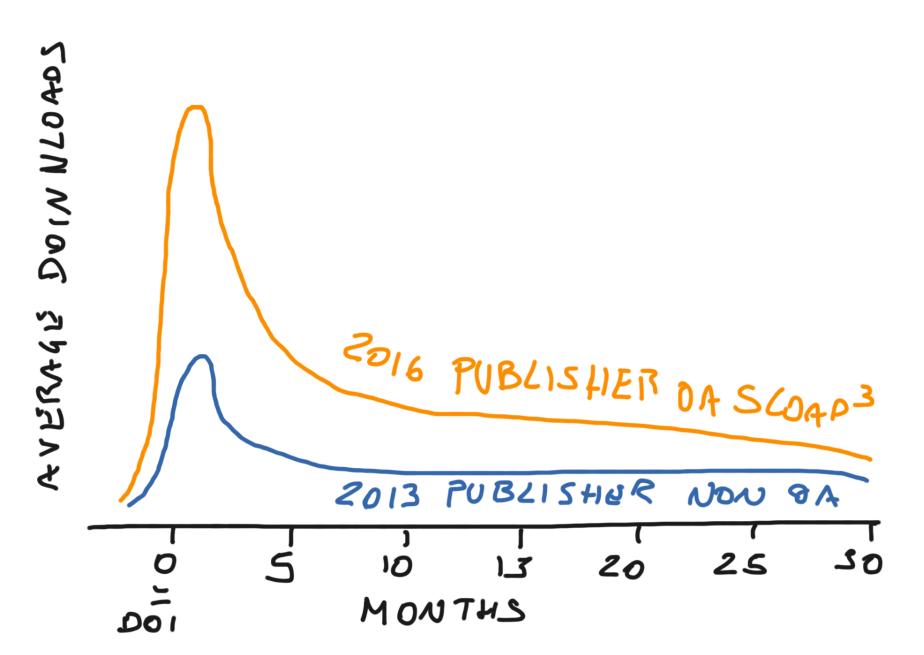


arXiv and a Yet Unnamed Publisher shared anonymized download counts per item per day





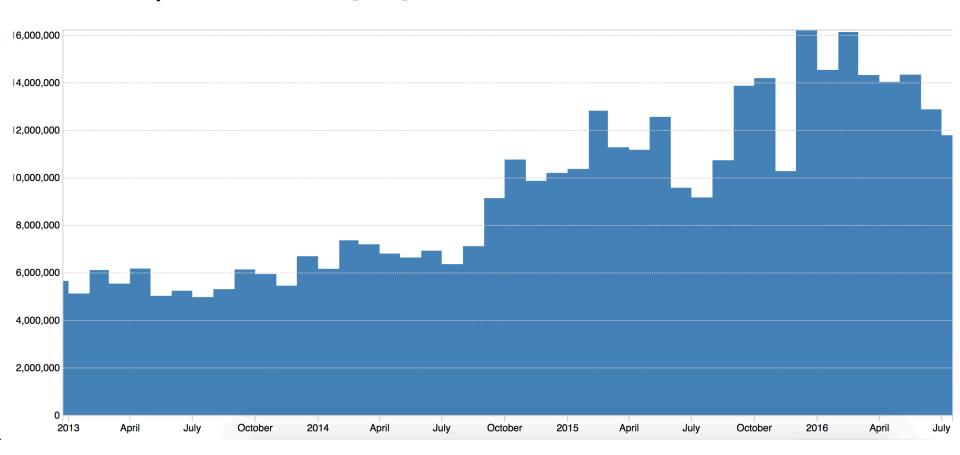


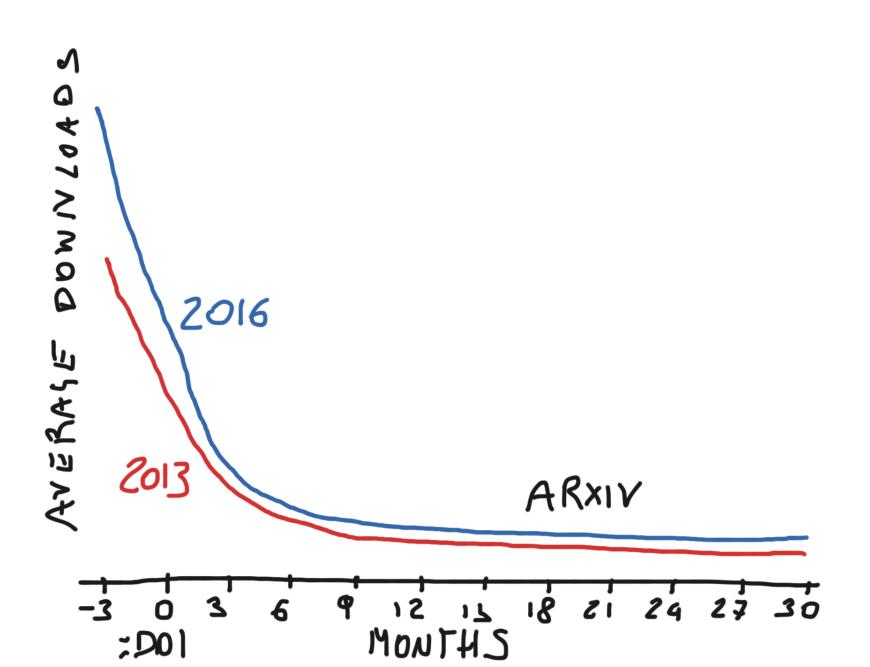


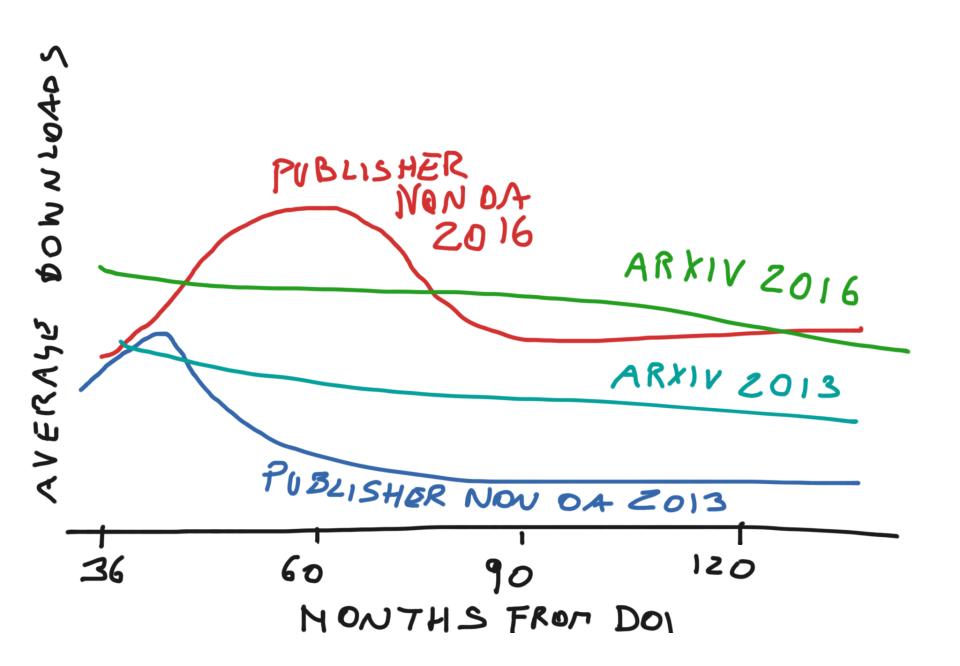
arXiv.org > stats

Login | Logout

arXiv monthly download rates [CSV]









Flipping journals to gold Open Access:

- Massively increases downloads
- Increases downloads to toll-access content
- arXiv downloads increase on the same period

What's next?



SCOAP³ Phase 2: 2017-2019. Article projections

Publisher	Journal	Predicted # articles
ELSEVIER	Nuclear Physics B	~4,200
	Physics Letters B	
Mindawi	Advances in High Energy Physics	~650
Publishing	Chinese Physics C	~170
WEIFELDSIAN ENWERSITY IN KRAKING	Acta Physica Polonica B	~120
OXFORD PS	Progress of Theoretical & Experimental Physics	~460
Springer Springer	European Physics Journal C	~9,800
	Journal of High Energy Physics	

Total number of articles

~**15,400** (+15%)



SCOAP³ Phase 2: total contract values 2017-2019

Publisher	Journal	Maximum contract volumes
ELSEVIER	Nuclear Physics B	6,950,000 \$
	Physics Letters B	
Mindawi	Advances in High Energy Physics	315,000 \$
Publishing	Chinese Physics C	150,000 £
INCHERONIAN UNIVERSITY IN ERAKSIN	Acta Physica Polonica B	52,500 €
OXFORD UNIVERSITY PRESS	Progress of Theoretical & Experimental Physics	320,000 £
Springer Springer	European Physics Journal C	7,500,000 €
	Journal of High Energy Physics	

Total contract values ~14,700,000 €

Total number of articles

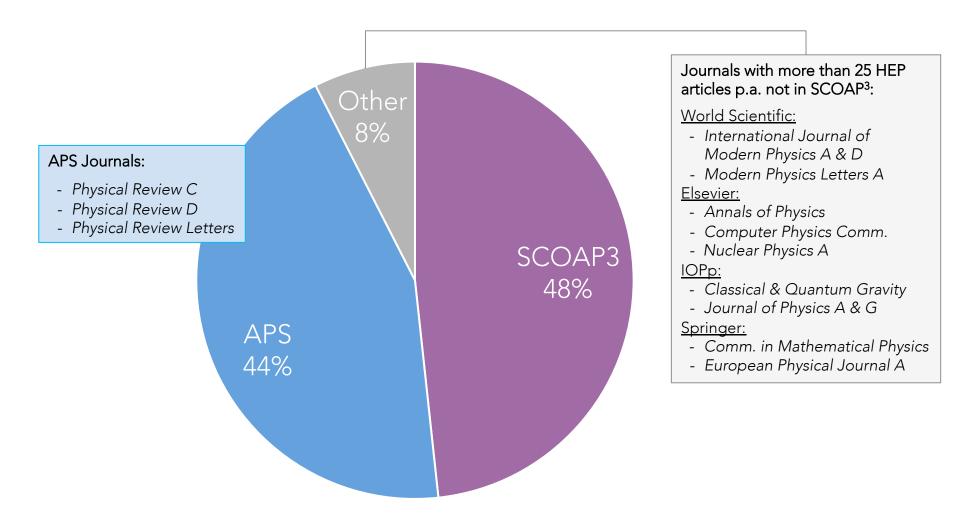
~15,400

Anticipated average investment per article: <1,000 €





SCOAP³ covers ½ of HEP



SCOAP³ covers 100% of journals that are predominantly HEP (>60% HEP articles) and only the HEP content for other (broad-band) journals. Accordingly, this analysis includes articles published 2014 and 2015 in HEP journals in full and only HEP articles in broad-band journals. For simplification, journals with less than 25 HEP articles/year were excluded.





Alexander Kohls/CERN for the SCOAP³ info
The arXiv team/Cornell for the arXiv logs
A Yet Unnamed Publisher for the download logs
Jacopo Notarstefano/CERN for the log analysis
OUP/JPS, Elsevier, Springer teams for the SCOAP³ download impact analysis
The INSPIRE team (CERN,DESY, IHEP, Fermilab, SLAC)
The SCOAP³ Partners and Governance for all the miracles