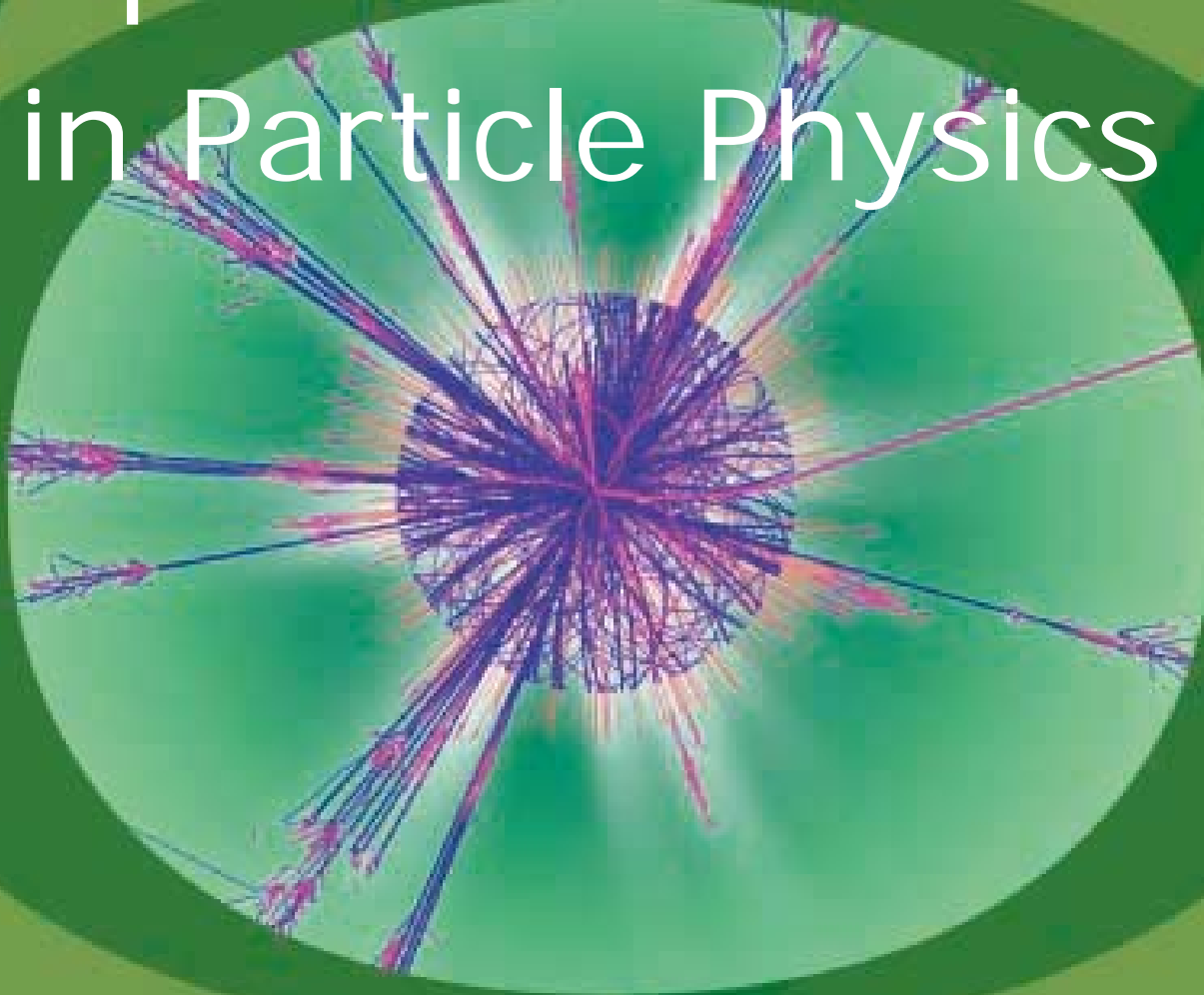


Open Access Publishing in Particle Physics



R. Voss, CERN | IATUL 2007 | KTH Stockholm | June 11, 2007



Particle Physics

- Cutting-edge research at the forefront of the fundamental sciences
- Investigates the fundamental, innermost structure of matter and forces
 - Historically, offspring of nuclear physics
 - Today, closer relations to astrophysics and cosmology
- The next flagship project, the Large Hadron Collider (LHC) at CERN, is a golden opportunity to convert the field to full Open Access



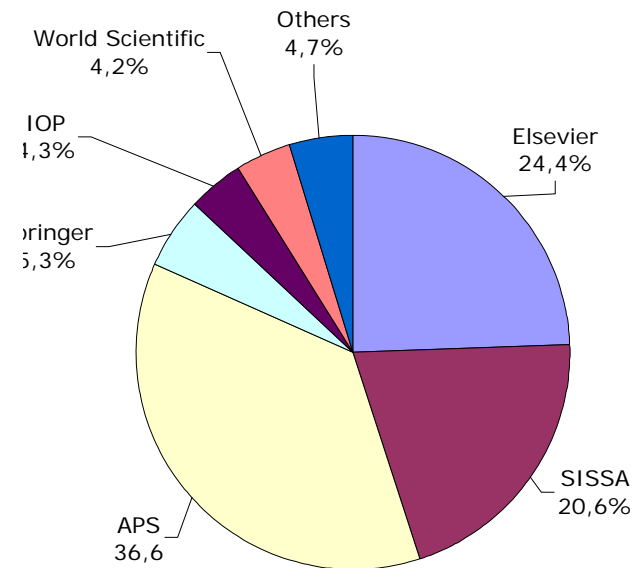
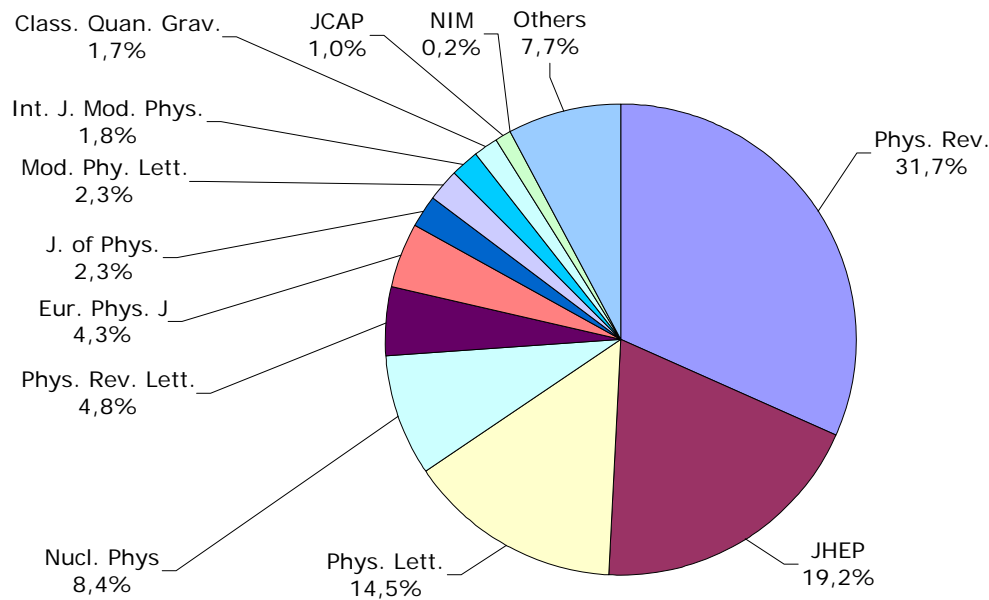
The community

- Approximately 10'000 scientists worldwide
 - Well organised and networked
 - Invented the Web
- *Experimental* research strongly concentrated in a small number of big laboratories...
 - CERN is the biggest
 - ... but strongly networked with universities worldwide
- *Theoretical* research based mostly in universities and smaller research institutes
 - Accounts for 80-90% of publications in our field



The publications landscape

5016 articles published 2005 in peer-reviewed journals:



S.Mele et al. JHEP 12(2006)S01 arXiv:cs.DL/0611130

- 83% of all papers published by 6 leading journals
- 87% of all papers published by 4 different publishers
- 57% published by not-for-profit (= not-for-loss) publishers



Particle physics: a green tradition

- The CERN Convention (1953) is an early Open Access manifesto:
 - "... the results of its (CERN's) experimental and theoretical work shall be published or otherwise made generally available."
- An important promoter of the preprint culture
- Particle physicist were among the first to fully embrace the Open Archive movement (arXiv.org)
- Open Archives are the lifeblood of scientific communication
 - Today, particle physics is almost entirely green.
 - Without mandates, without debate.
- Peer-reviewed journals remain important as version-of-record archives, and as key instruments of merit recognition and career promotion

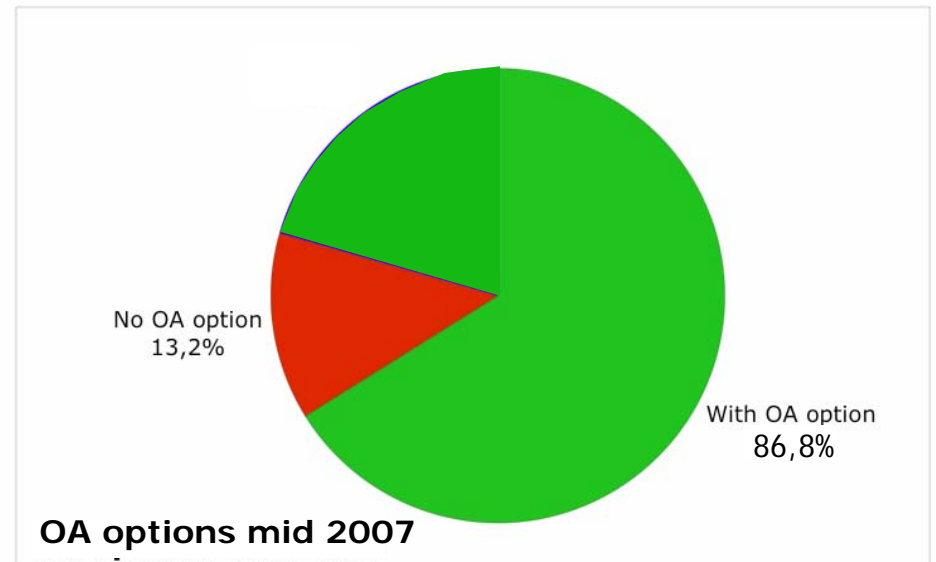
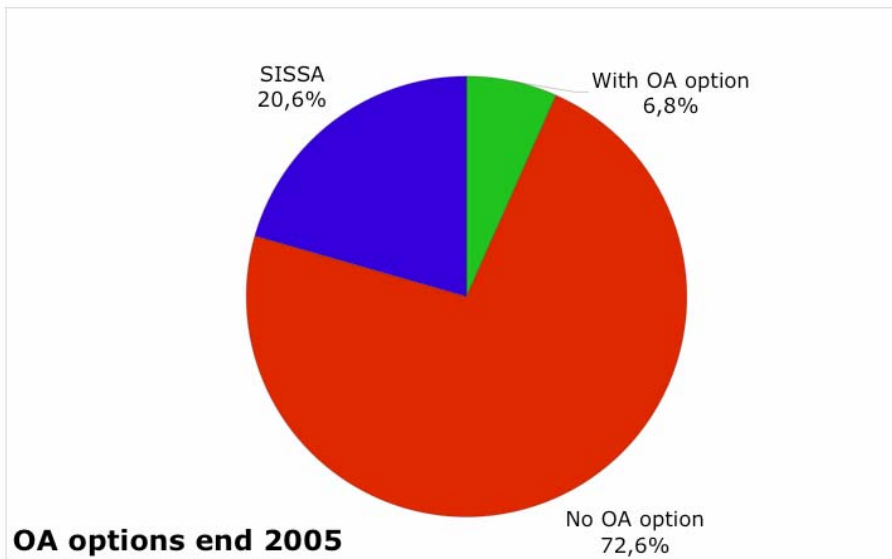


OA landscape in 2007

- Most particle physics journals offer OA options today:
 - “Hybrid model”: authors “buy” OA to individual articles
 - Popular with publishers...
 - ... but the community does not want to pay twice!
 - Reluctant take-up by authors (“why should I pay what I can have for free?”)
 - Institutional membership (SISSA, IOP)
 - A small-scale consortium model: PRST-AB (APS) sponsored by major laboratories (~ 150'000 US\$/year)
- “Gold” OA to particle physics journals is there, but...
- ... variety of options bewildering for authors & funders



OA offers: from 2005 to 2007



- Distribution of published papers by journal OA policy
- These articles were NOT OA. Had funding mechanism been in place, they would have been.
- OA offers grow following the debate on OA in the community
- Time is ripe for a full transition to OA, in a way transparent to all stakeholders of the publication process

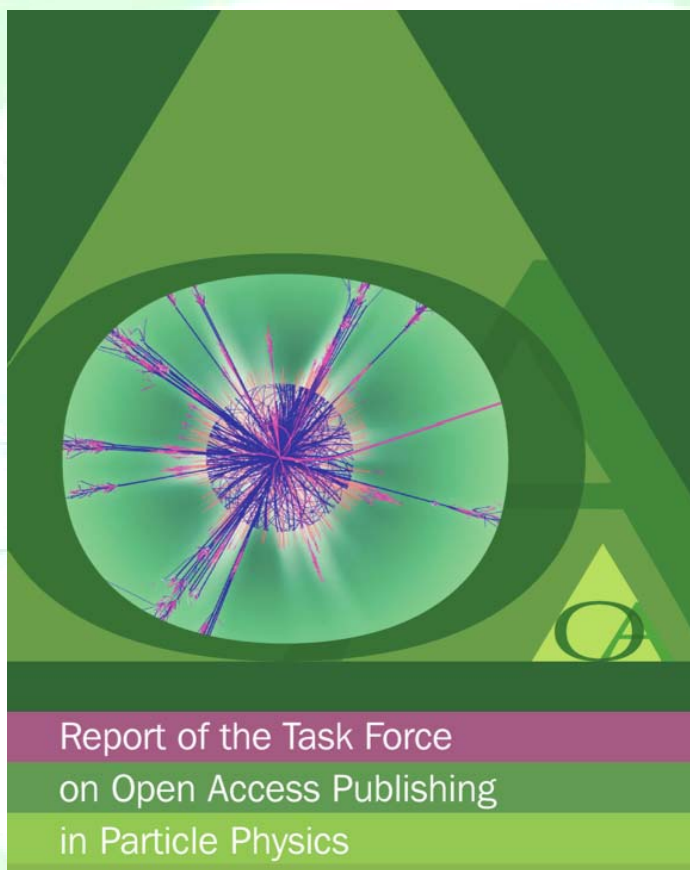


Open Access issues

- Grant universal access to the peer-reviewed results of publicly funded research
- In a green environment, authors benefit from peer-review and journal prestige as much as the readers (at least!)
- Bring spiraling subscription costs under control
- Raise researcher awareness of economical implications of scientific publishing
- Inject competition in the market of scientific publishing by openly linking price to quality
- Stabilize the diversity and secure the long-term future of journals which served our community well for many decades – but leave room for new players



The SCOAP³ model



Towards Open Access Publishing in High Energy Physics

Report of the SCOAP³ Working Party

The SCOAP³ Working Party*

S. Bianco^o, O.-H. Ellestad^d, P. Ferreira^a, F. Friend^f, P. Gargiulo^g, R. Hanania^h,
S. Henrot-Versille^e, A. Holtkamp^b, P. Igo-Kemenesⁱ, D. Jarroux-Declais^h, M. Jordão^o,
B.-C. Kämpfer^j, J. Krause^k, T. Lagrange^g, F. Le Diberder^g, A. le Masurier^g,
A. Lengfelder^l, C.M. Lindqvist^l, S. Mele^m, S. Plaszczyńskiⁿ, R. Schimmer^j, J. Vigen^o,
R. Voss^o, M. Wilbers^j, J. Yeomans^k, K. Zioutas^o

CERN
Geneva
19 April 2007
ISBN 978-92-9083-292-8

This document is available online at <http://cern.ch/oa/Scoap3WPRReport.pdf>

* Contact: Salvatore.Mele@cern.ch

^a INFN, 00044 Frascati, Italy

^b Norges forskningsråd, 0131 Oslo, Norway

^c UMIC, 2740-122 Porto Salvo, Portugal

^d JISC and University College London, WC1E 6BT London, United Kingdom

^e CASPUR, 00185 Roma, Italy

^f CERN, 1211 Genève 23, Switzerland

^g CNRS, 75794 Paris, France

^h DESY, 22607 Hamburg, Germany

ⁱ Universität Heidelberg, 69120 Heidelberg, Germany

^j Universitätsbibliothek Stuttgart, 70043 Stuttgart, Germany

^k Science and Technology Facilities Council, SN2 1SZ Swindon, United Kingdom

^l MPG, 80539 München, Germany

^m On leave of absence from INFN, 80126 Napoli, Italy

ⁿ University of Patras, 26500 Patras, Greece

<http://www.cern.ch/oa/Scoap3WPRReport.pdf>



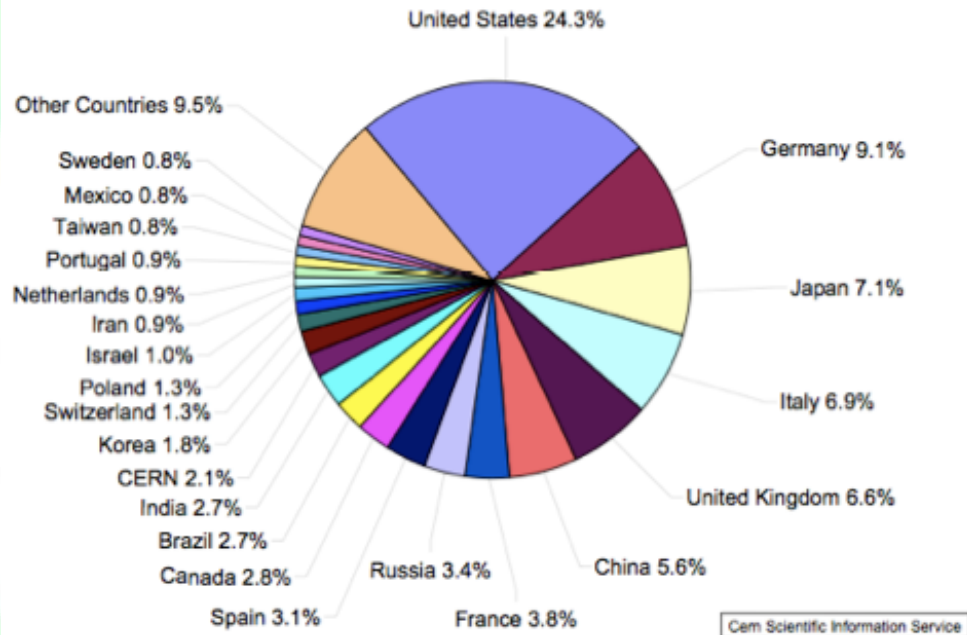
SCOAP³ in a nutshell

- A global consortium of funding agencies and libraries to convert all research journals important to our field to Open Access
 - Funded (ultimately) through redirection of subscription budgets
- OA implemented through contracts between SCOAP3 and publishers:
 - Full sponsoring of “core” journals with ~ 100% particle physics content
 - Partial sponsoring of “broadband” journal (e.g. Phys. Rev. Letters)
- SCOAP3 sponsors e-journals only: publishers free to charge readers for print editions and other premium services



SCOAP³ financing

Distribution of HEP articles by country, average 2005-2006



- Estimated annual budget: 10 Million €
- Divide budget on a “fair share” basis by nationality (affiliation) of articles/authors



How to put it together?

40 funding agencies

550 M\$
(Excluding person-power)

TIFF (Uncompressed) decompressor
are needed to see this picture.

1000 contracts

The ATLAS detector is being completed for the LHC!



Benefits

- Online journals free to read for anybody, anywhere, anytime
- Preserve high-quality peer-review process
- Generate medium- and long-term savings for libraries and funding agencies:
 - Linking price with quality
 - Single commercial partner
 - Save on subscriptions administration
- Transparent and cost-neutral for authors
- Free to read and to publish for developing countries



Status

- SCOAP3 proposal distributed to publishers, funding agencies, major laboratories, and other interested partners
- Most publishers of high-quality HEP journals are expected to be ready to enter negotiations provided long-term funding is available for SCOAP3
- Encouraging feedback from many funding agencies...
- ... but more work needed:
 - Research-funding agencies (usually) different from library-funding agencies
 - We work on a country-by-country basis to identify viable scenarios



SCOAP³ timeline

- Formal proposal published in April
- Potential funding partners to be invited soon to sign Expressions of Interest
- Once funding partners commit to sizeable fraction of budget, invite publishers to tender in autumn
 - Will determine final budget
 - Enlist remaining partners
- Formal agreement between funding agencies
- Goal: have SCOAP3 operational for the first LHC papers



Scalability

- Our model relies on many specificities of the particle physics community, and of the publications landscape in our field
- Not a one-size-fits-all solution
- FAQ: can it be scaled and ported to other fields?
- Related fields (nuclear physics, astrophysics, cosmology, ...): YES!
- Other fields: let the experts judge but...
- ... we hope to send a strong signal!



Summary

- We propose a fast and coherent transition of an entire field of cutting-edge science to Open Access journal publishing
- Strong support from the author community
- Most publishers of high-quality HEP journals are expected to be ready to enter negotiations provided long-term funding is available for SCOAP3
- Encouraging feedback from funding agencies
- We hope to send a strong signal in support of OA to the scientific community at large