Open Access Publishing in Particle Physics
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:

- 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
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 SCOAP$^3$ model

Towards Open Access Publishing in High Energy Physics
Report of the SCOAP$^3$ Working Party

This document is available online at http://cern.ch/oa/Scoap3WPReport.pdf

SCOAP$^3$ 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 SCOAP$^3$ and publishers:
  - Full sponsoring of “core” journals with ~ 100% particle physics content
  - Partial sponsoring of “broadband” journal (e.g. Phys. Rev. Letters)
- SCOAP$^3$ sponsors e-journals only: publishers free to charge readers for print editions and other premium services
SCOAP³ financing

- 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)

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
SCOAP$^3$ 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