

25 October 2012 - EPFL Conference

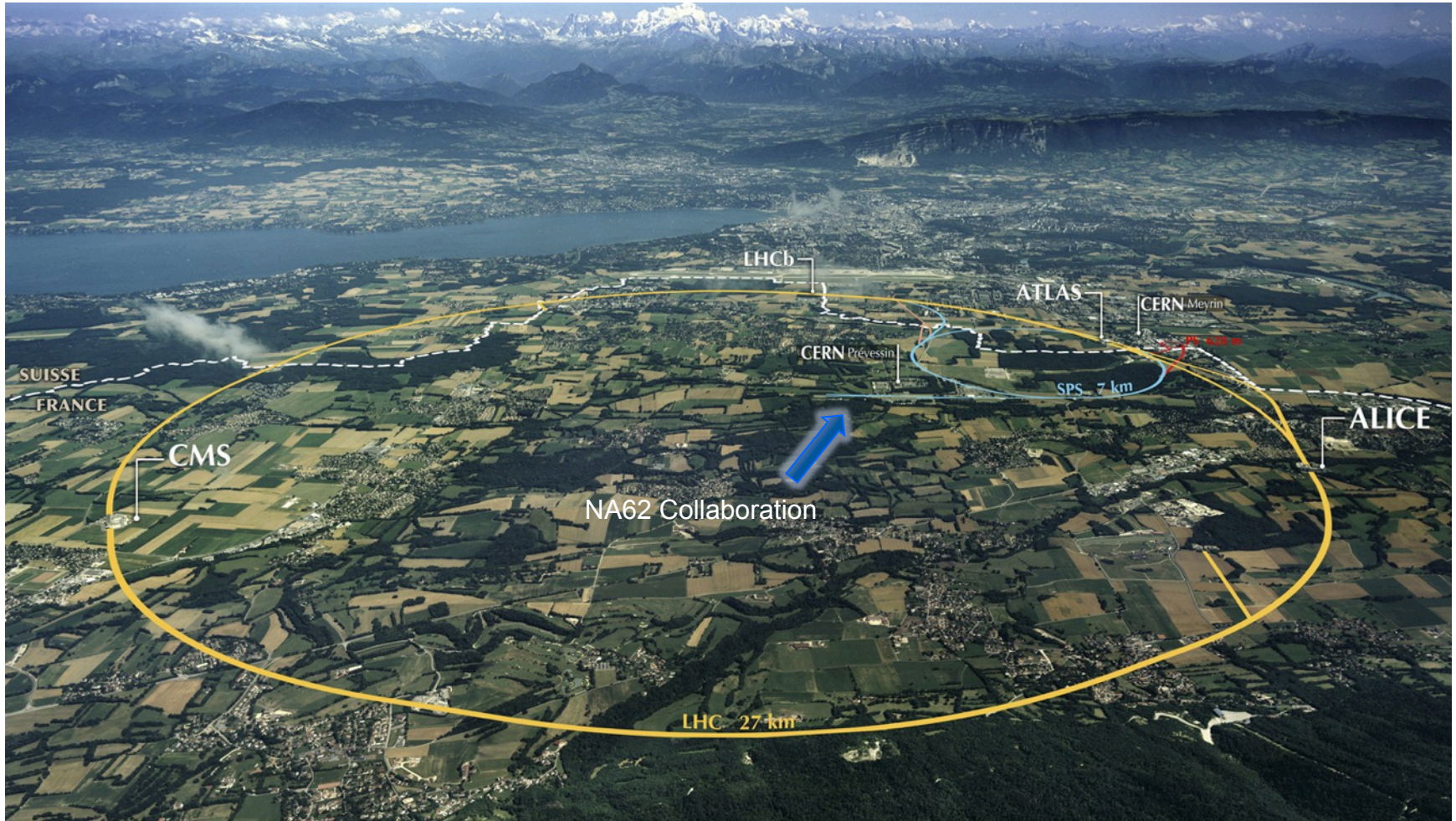
CREATIVE COMMONS @CERN

Sharing Knowledge Accelerates Science

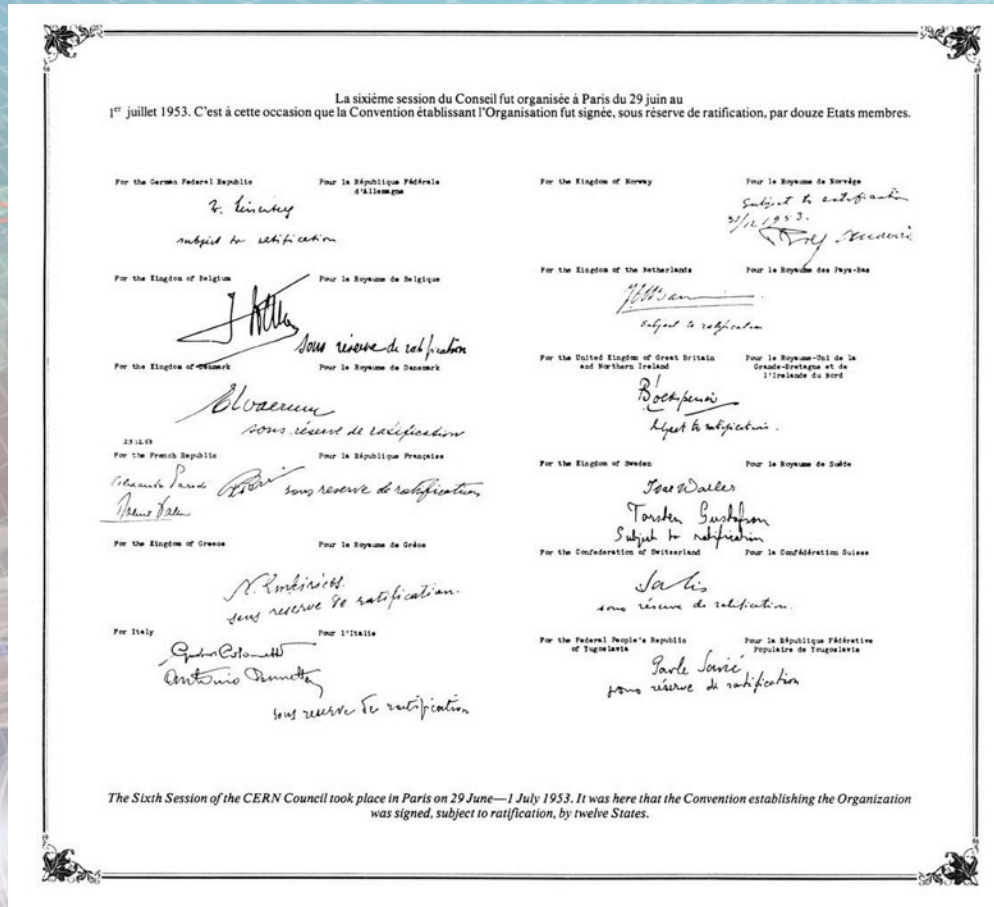
Dr Brigitte Bloch-Devaux
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NA62 Collaboration at CERN

Diane Nourissier-Sirakov
CERN Legal Service

European Organization for Nuclear Research



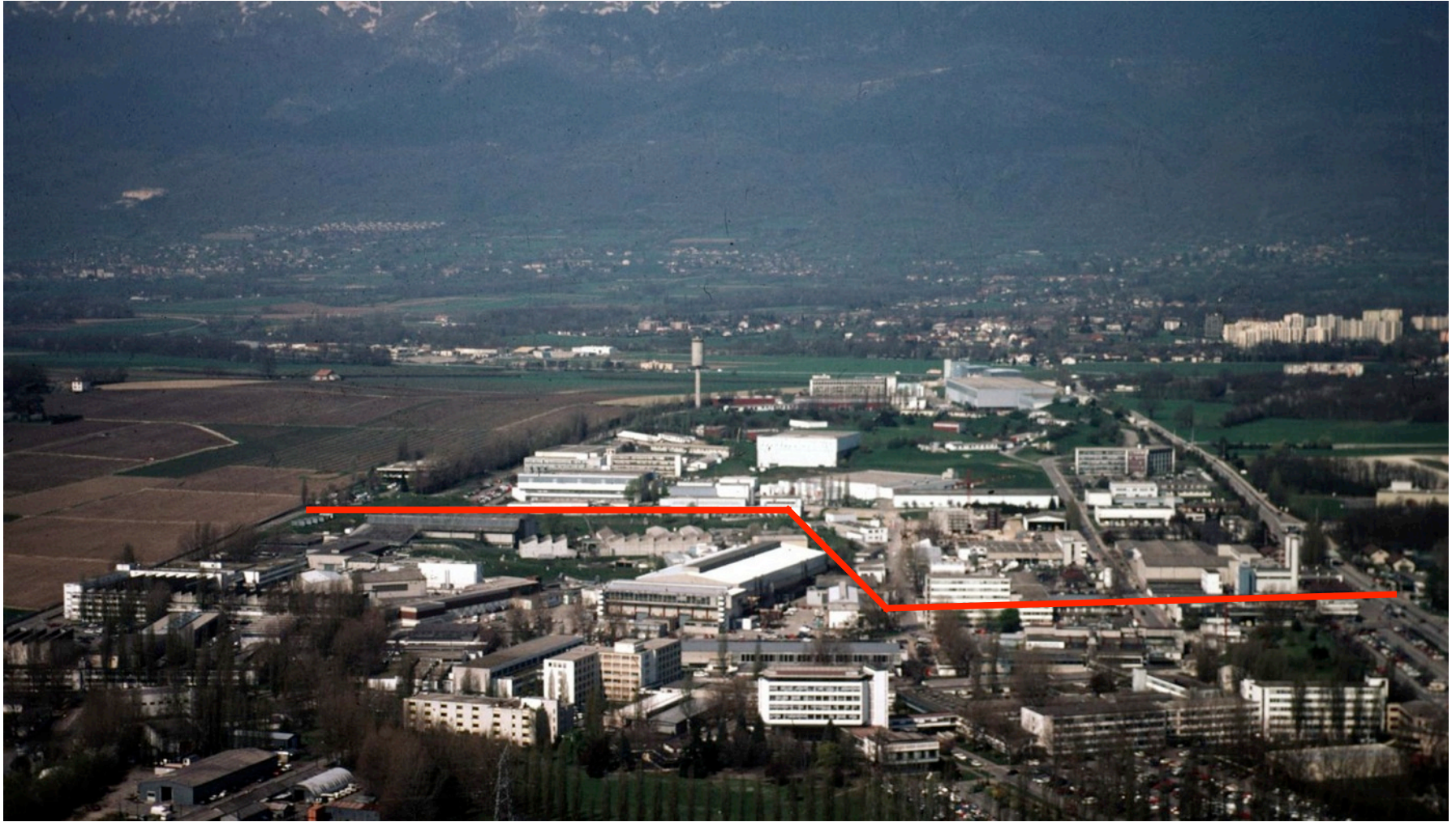
The CERN Convention: a vision of open access to science



For peaceful purposes



Fostering collaboration across frontiers



CERN Convention, Article II.1

The results of CERN's work

“shall be published or otherwise made generally available”

Les résultats du CERN:

“sont publiés ou de toute autre façon rendus généralement accessibles”

Copyright @ CERN

CERN Staff Rules And Regulations Art. 5:

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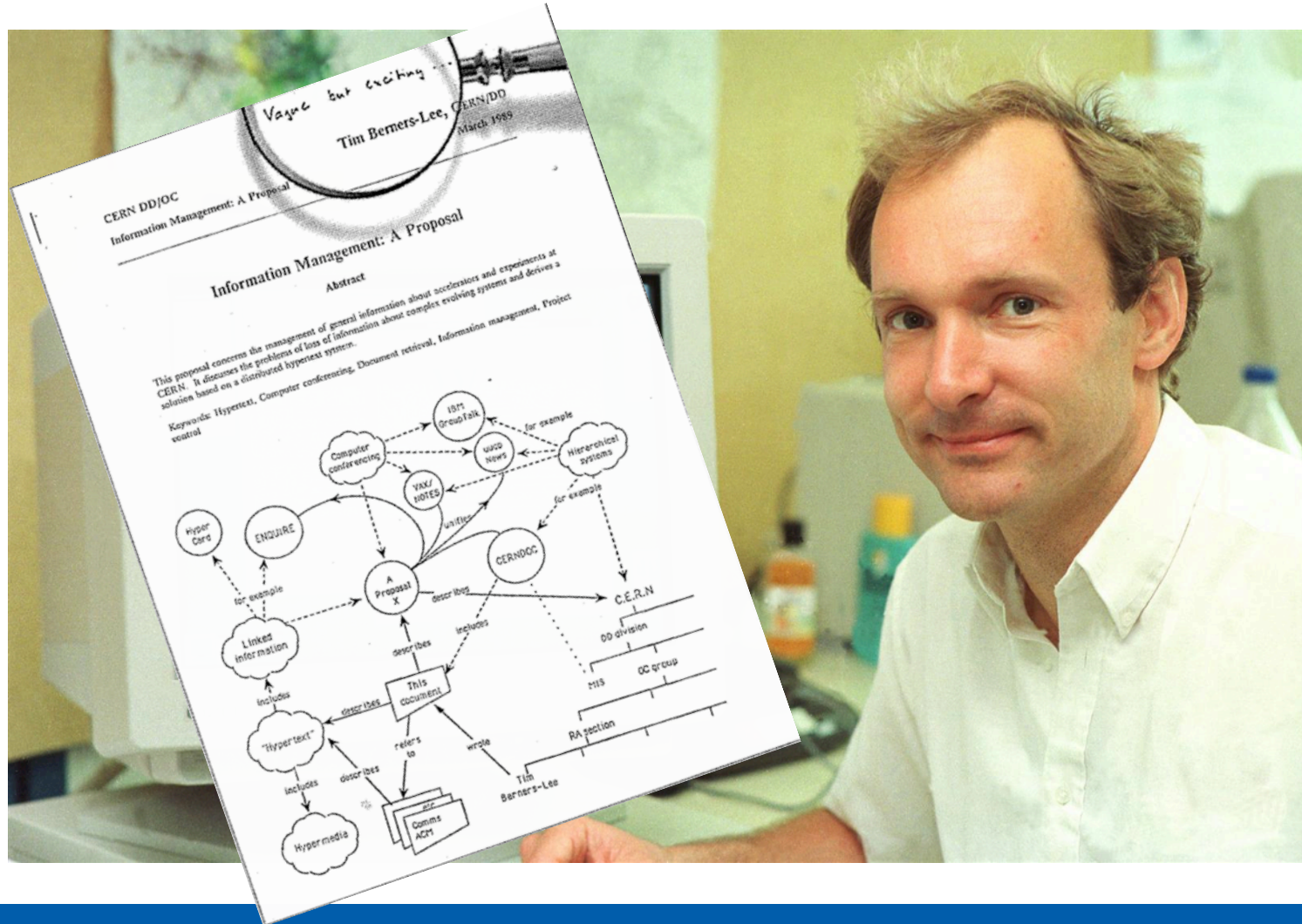
Open Access to science... merely a concept in the Convention?



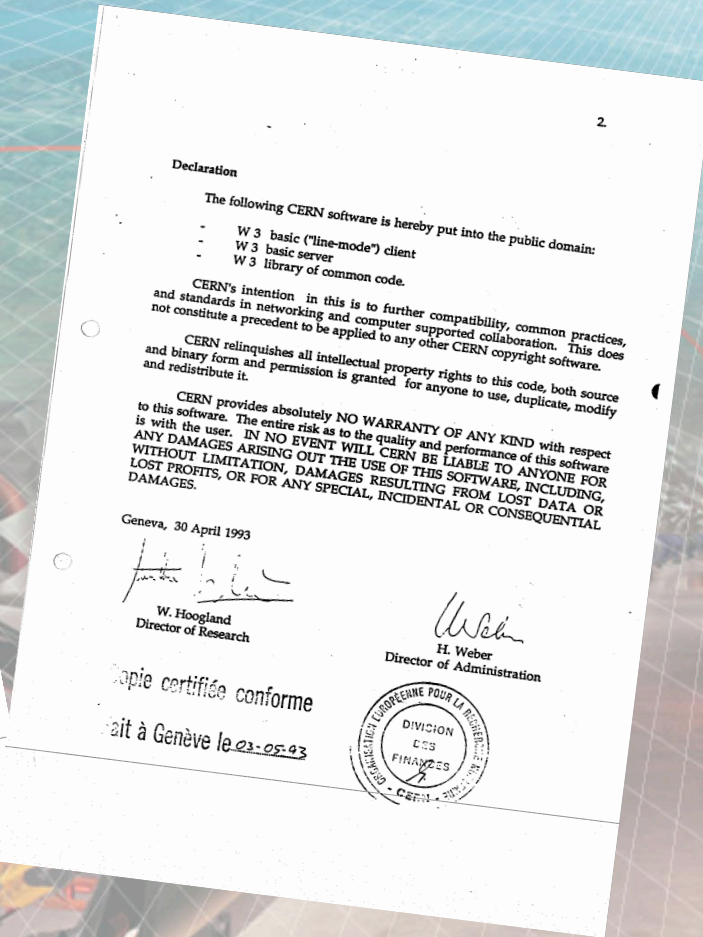
Open Access to science – CERN practice

1. **The World Wide Web (WWW)**
2. **Choice of open licenses**
 - Overview of CERN IP and licensing conditions
 - LHC Publications under CC-BY
 - Why CC-BY?
3. **SCOAP3**

The World Wide Web created at CERN by Tim Berners-Lee

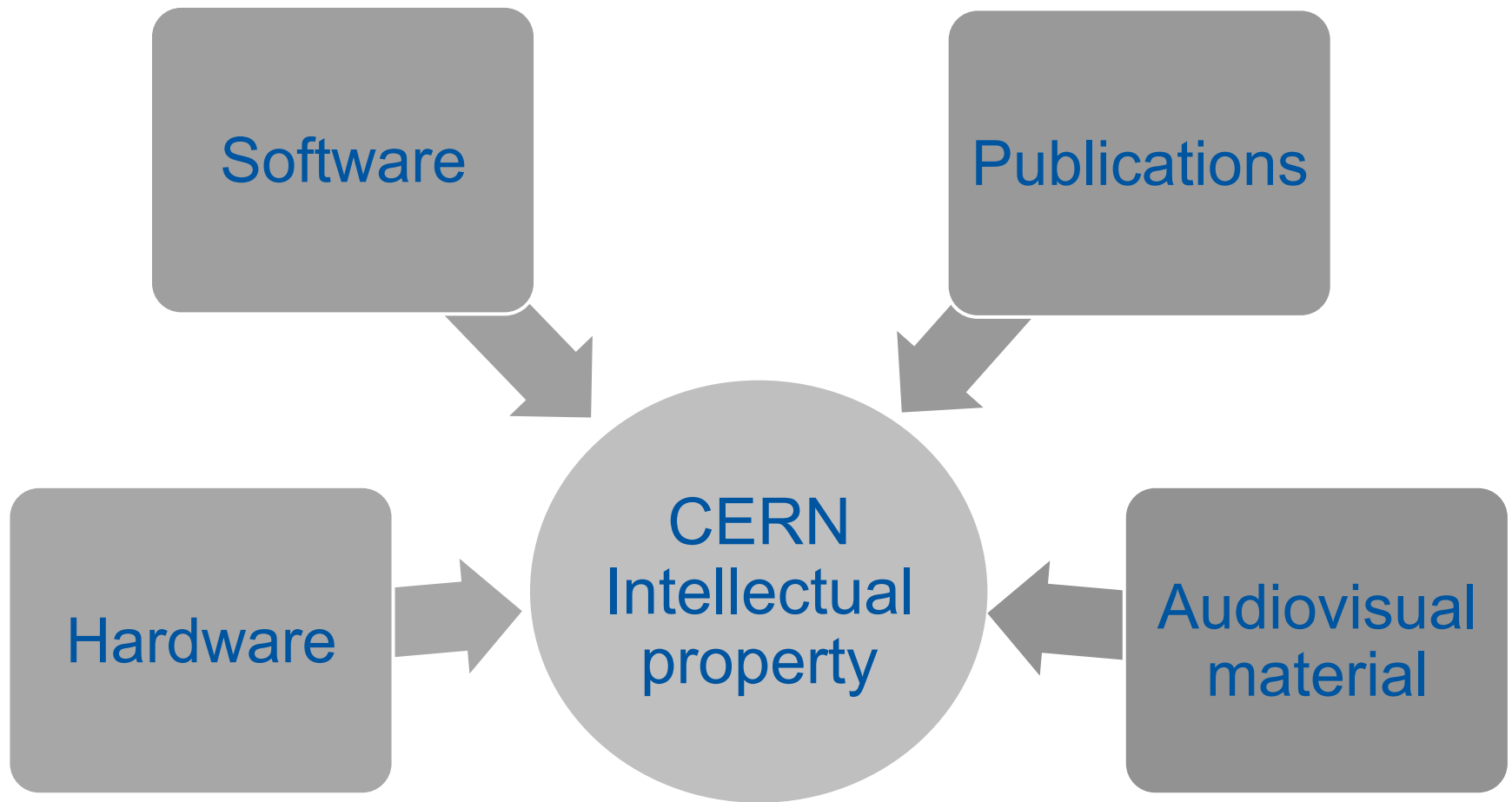


... and CERN placed all WWW software in the public domain



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SOFTWARE:
CERN privileges Open
Source licenses ...



... HARDWARE:
CERN created an Open
Hardware license
(CERN OHL)



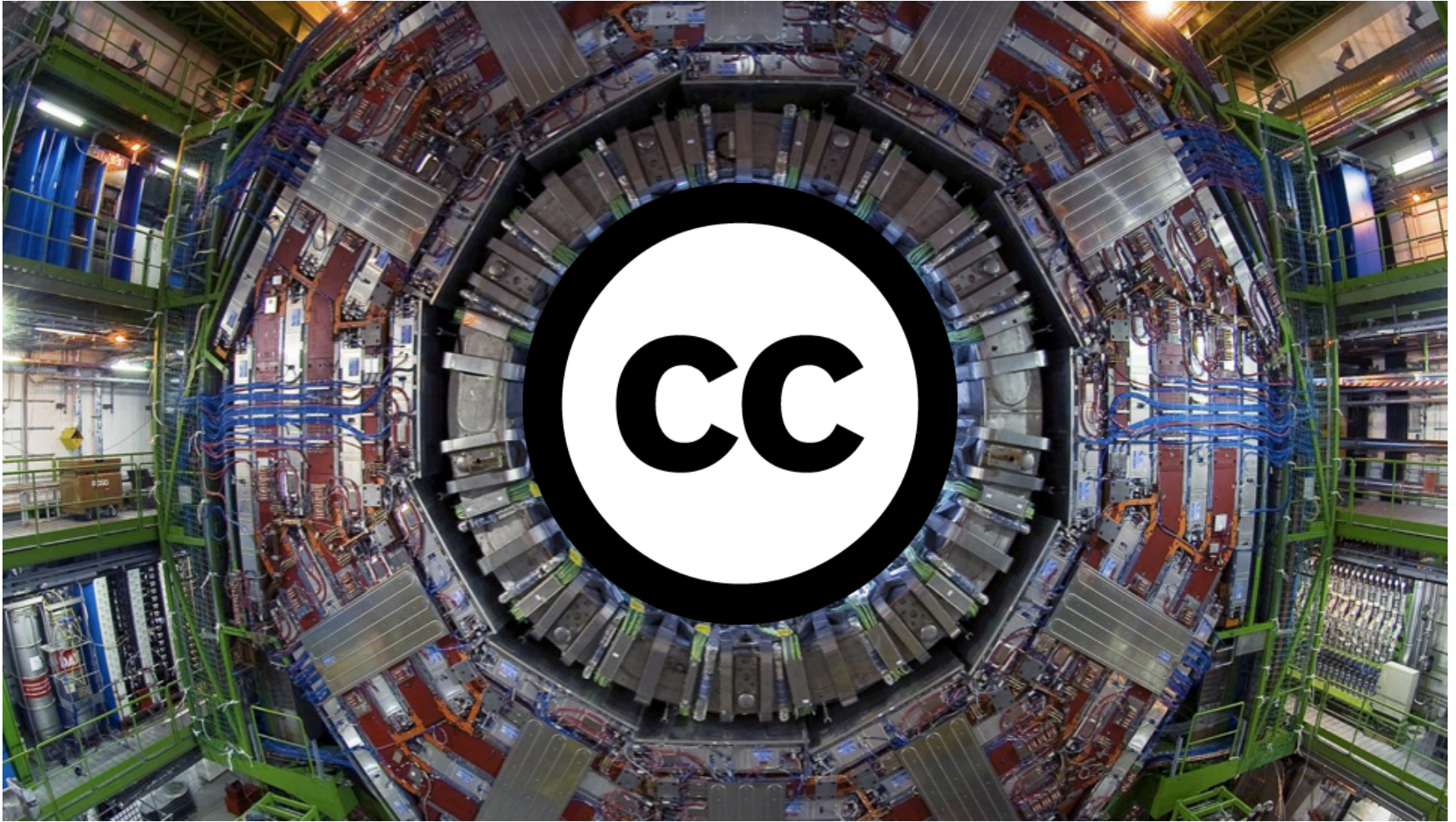
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- LICENSE: *“every effort will be made to publish papers under Open Access conditions, as defined by the SCOAP3 initiative. (...) **the Creative Commons Attribution ("cc by") license meets these conditions.**”*

LHC publications under CC-BY



Including Higgs Boson results

PHYSICS LETTERS B

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Volume 716, Issue 1

17 September 2012

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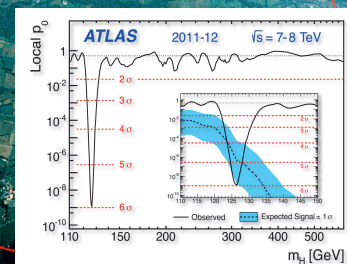
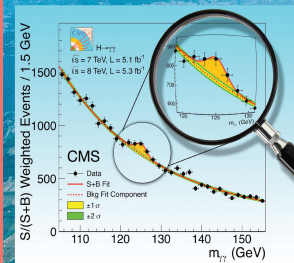
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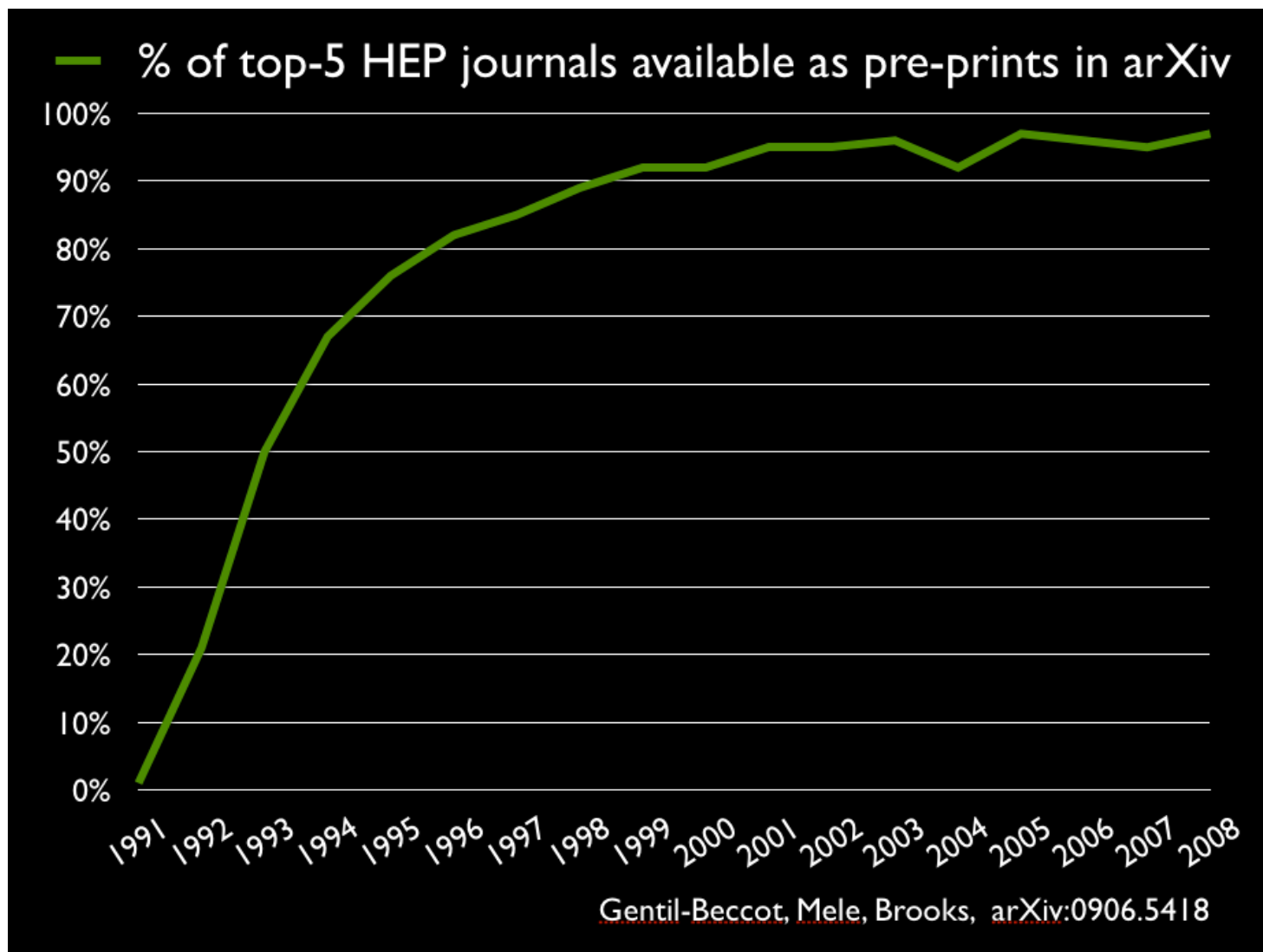
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ELSEVIER

97% of HEP journals' content is in arXiv



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Attribution — You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).

Why CC-BY?

1. **Commercial licenses unsatisfactory**
3 examples
2. CC Licenses understood by publishers and the HEP community
3. Corresponds to the needs of physicists in HEP
Example of the NA62 Collaboration

Waste of resources: shipping reprints



Collaborations at CERN



New scientists in a collaboration
could not re-use content of articles
already published because not
“authors”



One publisher still prohibits scanned versions of CERN Yellow Reports published in the 1950s...



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Why CC-BY?

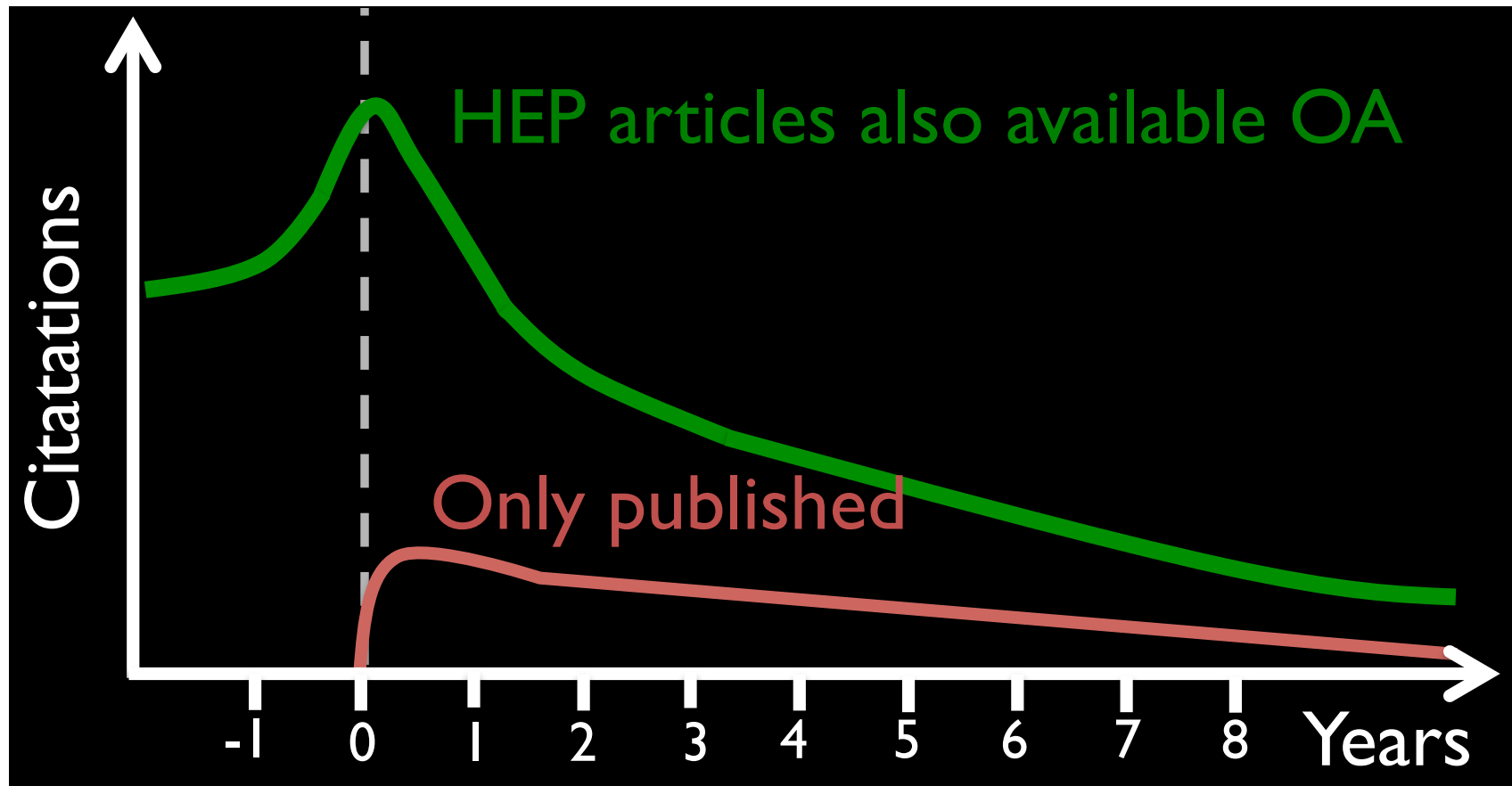
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Example of the NA62 Collaboration

Perception of Open Access in the HEP community

Fundamental research, not applied research

- ➔ - **no patents** directly expected, scientists receive financial support from Home Institutes (salary and grants from University, Research center, National programs, European programs...)
- ➔ - strong commitment **to publish research results**: a collaboration cannot live/survive without publications (specific mention in the grant description, follow-up by scientific committees, individual job application/internal promotion...)
- ➔ - make it known to the largest community, **favor “open access”**, also **public access to data** as a specific mention in some grant request
- ➔ - recognition comes from **citations**: “H index” sometimes considered as the main criteria for national competitions (not all countries)

Visibility / Citations



How does a HEP collaboration works?

- once the experiment is built and takes data, analysis will start
- regular collaboration meetings to present/discuss data analysis
- regular progress report to scientific committees
- publication of preliminary results in Conferences/Workshop proceedings
- publication of final results in specialized Journals
- publication procedure: internal procedures exist in small and large collaborations with various levels of complexity

LHCb : a medium/large size collaboration of 700 physicists from 50 universities and laboratories in 15 countries (including LPHE-IPEP @ EPFL)



Members of the collaboration and the LHCb cavern, November 2008

<http://lhcb-public.web.cern.ch/lhcb-public/>



NA62: a small/medium size collaboration (~150 physicists from 26 Institutes in 11 countries) **NA62 @ CERN** (the 62th experiment in the SPS North Area)



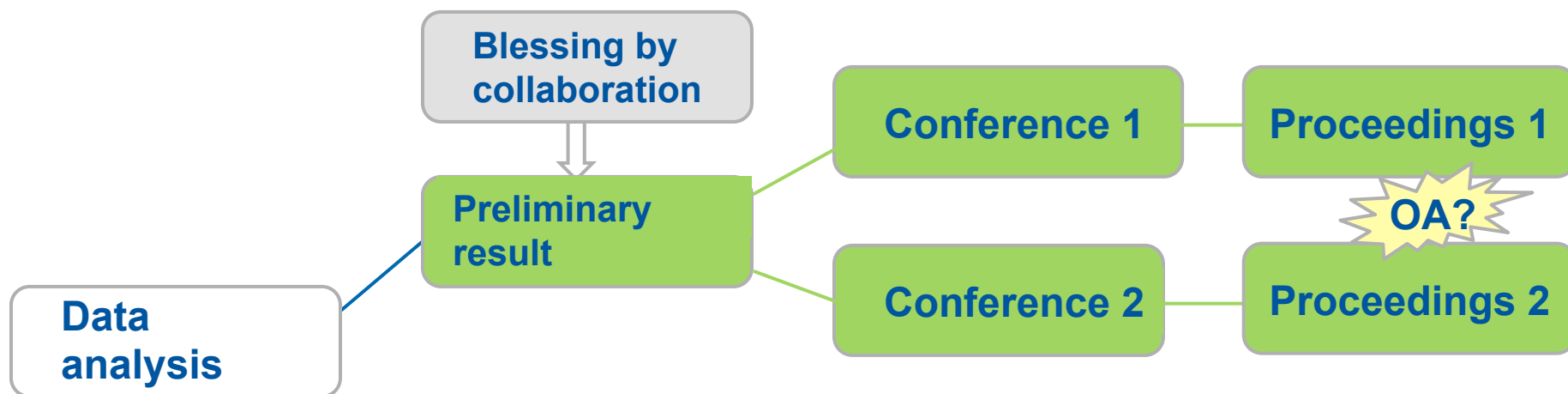
Some Members of the NA62 collaboration, September 2011

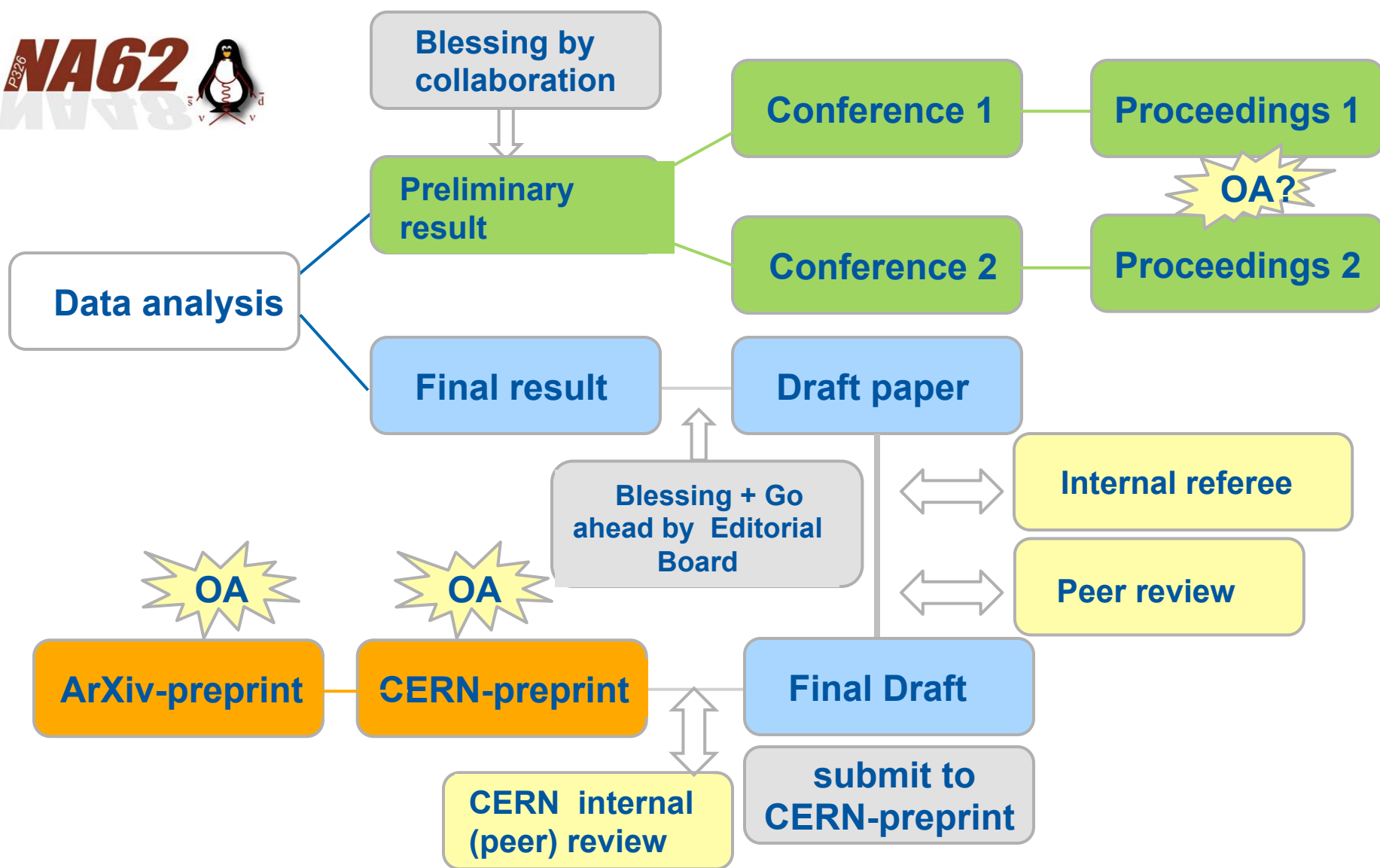
<http://na62.web.cern.ch/NA62/>



Publication process in NA62 @ CERN

- A long way from physics analysis result to publication ...
- Preliminary results shown in Conferences
- Several peer review processes
- Open access is a “PLUS” at every stage







Examples of non OA/OA publications in NA62 (1)

2009: Copyright transferred to the publisher

© Publisher 2009

A colleague theoretician (non-author) could not re-use figures for his textbook (to be sold...).

We gave him the coordinates to redraw the figure with a different layout !

2010: First non LHC paper **published with OA**

© CERN for the benefit of the NA48/2 collaboration 2010. This article is published with open access at <web link>.

2011: © 2011 Publisher. All rights reserved. But also

Copyright CERN for the benefit of the NA48/2 Collaboration.

Examples of OA/non OA publications in NA62 (2)

2012: © 2012 Publisher All rights reserved.

Note on Author's personal copy

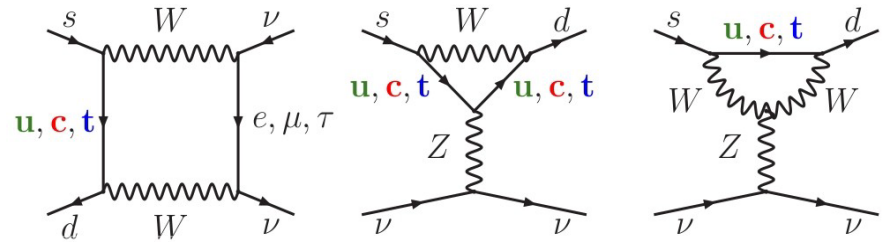
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2014: SCOAP3 effective, agreement with main HEP Journals

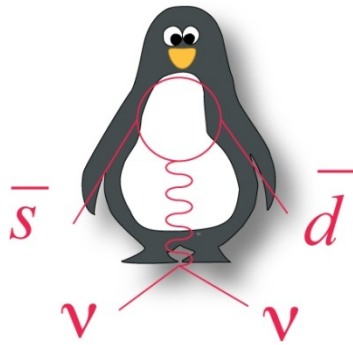
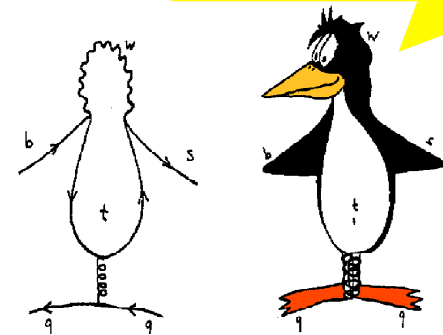
Examples of penguin material used in NA62

We study very rare processes in kaon decays, described by Feynman diagrams (boxes and penguins) :
 $K^+ \rightarrow \pi \nu \bar{\nu}$



Cartoon (unknown author) often shown in slides.. to illustrate rare B decays (LHCb physics)

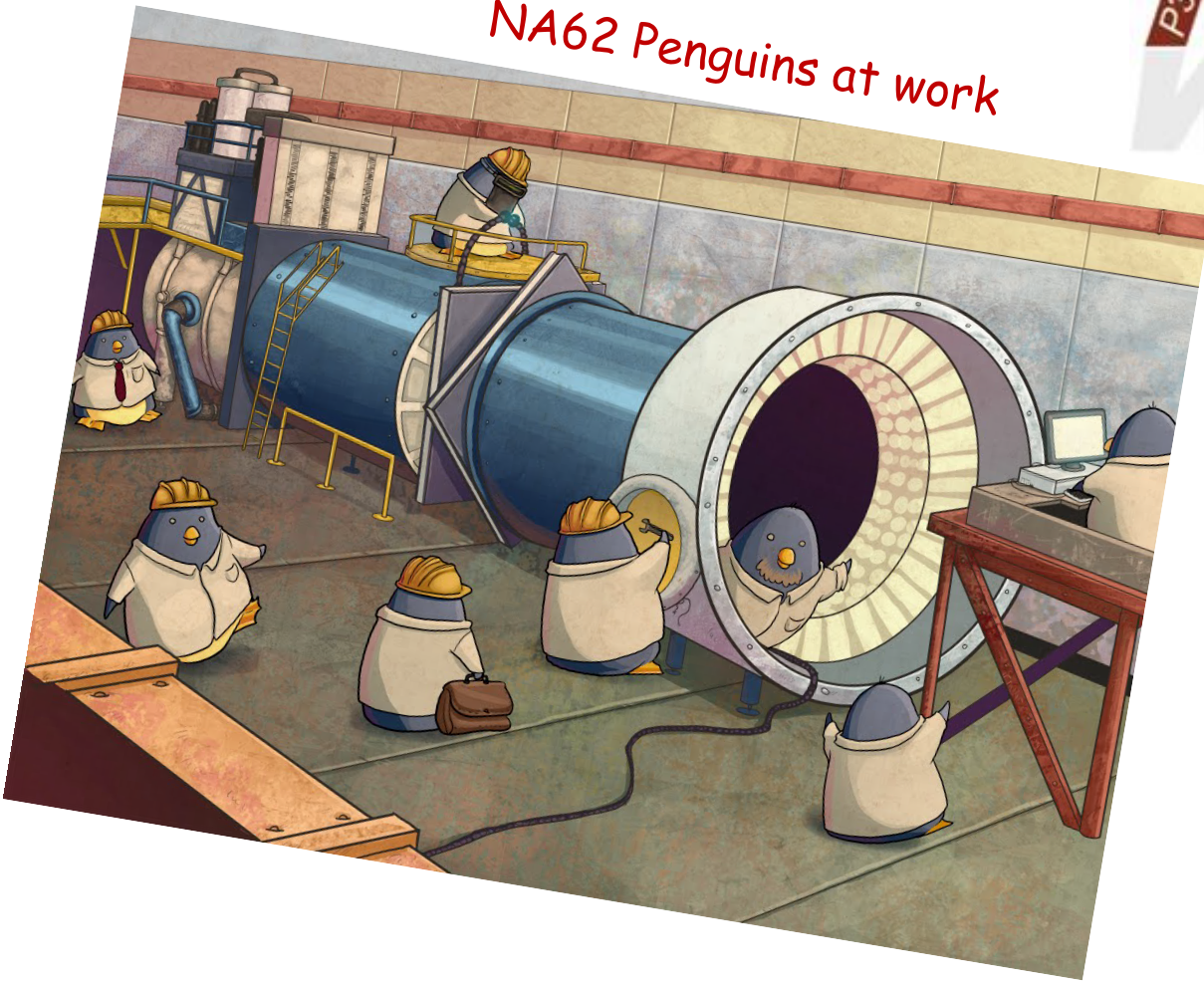
I've never seen a Feynman diagram that looks like you ☺



NA62 Logo : an artistic interpretation of a penguin and the above diagram by one of the NA62 collaborators. We can use it !

Visit us (and LHC experiments) at CERN or at <http://na62.web.cern.ch/NA62>

NA62 Penguins at work



Courtesy of A.Fantechi,
Italian cartoon author,
inspired by a visit to
NA62

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The choice of CC licenses by CERN
is part of a larger movement towards
open access publishing...



SCOAP3: 10M€/year (Start: 2014)

New business model to convert existing HEP journals to OA

- Consortium of libraries/agencies finance SCOAP3
- SCOAP3 pays publisher centrally for the organization of peer-review and other publication services
- Articles published OA under CC licenses

SCOAP3 Timeline

- 2005 Consultation within the HEP community
- 2006 Internal consensus on the SCOAP3 idea
- 2007 Design of the business model
- 2008-2010 Build worldwide consensus and pledges
- 2011 Go-ahead decision, start tender process
- 2012 Conclude tender, establish consortium
- 2013 Reconciliation of reduction, sign contracts
- 2014 Start operation

Open access to science...

A concept in the Convention

... becoming reality



Thank You!

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Thank you to Jens Vigen and Salvatore Mele of the CERN Library for their contributions to this presentation.

Credits:

The Muppets visit CERN (Image: Walt Disney Studio)

Representation of the Higgs boson at the London Paralympics opening ceremony (Image: Getty)

Cover Page of Physics Letter B edition on Higgs Boson results announced on July 4, 2012 (Elsevier)

Extract of the human readable version of the CC-BY license

Image of penguins at work, A.Fantechi, Italian cartoon author, inspired by a visit to NA62.