



# The ZEUS long term data preservation project

Andrii Verbytskyi

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## Reminder: Main goal of data preservation

Preserve ZEUS data to get valuable scientific results in the future.

## Reminder: ZEUS data preservation strategy

- Save the bits(files) → copy the data to DESY/RZG storages;
- Provide an access to the saved bits(files) → define access and archiving policy;
- Save the software → provide environment to run software, e.g. installation of virtual machines;
- Save the documentation → rely on DESY library and open databases like InSpire;
- Share experience → provide documentation for the software preservation and software deployment.

- Processed data and MC in ROOT/PAW format with logs, 300Tb, 1 Mio files;
- Accessible worldwide via multiple protocols with Grid certificate protection from RZG+free inside DESY.

## Status: Software for ZEUS, part I

- ROOT5 is the main analysis framework (PAW is deprecated);
- ZMCSP is the MC production package, that contains generators, conversion utilities, software for detector simulation with GEANT3.  
**MC generation option with old and new generators;**
- CNINFO is the file catalog with bash/SQLite3/ROOT/C++ interface;
- ZEVIS is the event display.

In addition packages that are widely used in HEP are considered: g++, gfortran/g77, python, make, CLHEP, cernlib, fastjet, HEPMC, pythia8 and others.

## Status: Software for ZEUS, part II

- Some analysis software (no ZMCSP) is available on two machines in DESY;
  - will survive for some years on two machines.
- All analysis software is preserved in a form of CentOS customised ISO images. The image:
  - includes standard and ZEUS-specific software;
  - automatic installation suitable also for virtual machines;
  - documented at <https://wwwzeus.mpp.mpg.de/dpheap.html>;
  - works on virtual machines, to be tested on OpenStack;
  - +ZMCSP works on NAF and contemporary Grid sites;
  - will survive at least for decade.

## Reminder: Documentation for ZEUS

- <http://zeusdp.desy.de>
- <http://inspirehep.net/search?p=collaboration:%27ZEUS%27&ln=en>
- <https://wwwzeus.mpp.mpg.de/dpheap.html>
- Internal notes accessible on InSpire with password

# ZEUS data preservation status

Essentially the DP for ZEUS is completed. The remaining issue is the documentation. **Solution: paper(s) on ZEUS data preservation!**



# Data preservation paper for ZEUS

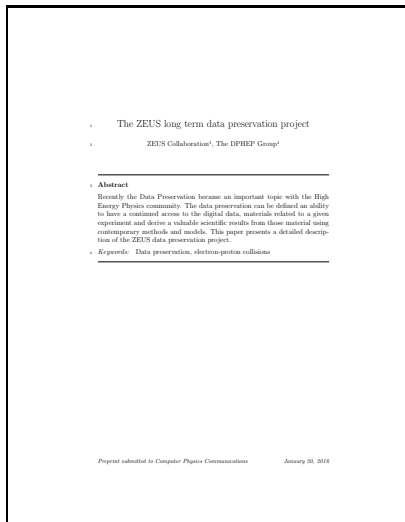
- Most data preservation papers are either conference proceedings or contain plans only → ZEUS paper will provide the **first** full description of the data preservation;
- Coverage:
  - Documentation on the data;
  - Experiment policy on data access and usage;
  - Manual for a possible analysis;
  - Manual for the MC generation, including new MC generators;
  - Statements on dedicated resources;
  - ...
- From the point of view of physics: **The document should contain enough information for an estimation of particular analysis opportunity with the preserved data.**

# Data preservation paper for ZEUS

Some ideas:

- The document can be split in public (paper) and experiment-only parts. The splitting should be discussed within collaboration;
- Submit the paper in computing physics journal in the next 3-4 months; Computing Physics Communications is a good option;
- Promote the ZEUS data preservation as a good example;
- A good option for the promotion is DIS2016 – **to be discussed!**
- Any contribution is welcome, see backups and join!

# Data preservation paper for ZEUS



So far 59 pages, 9 tables, 13 figures, 66 references, 19 listings.

# Conclusions&TODOs

- From the technical point of view the data preservation for ZEUS is completed;
- TODO: discuss details, finish the documentation and do promotion.

# How to contribute

- checkout the latest version from DESY SVN:

```
1 [yourloginname@pal43]~\% svn co https://svnsrv.desy.de/desy/ZDP/Draft
```

- go to the source and edit it:

```
1 [yourloginname@pal43]~\% cd Draft; vi ZDP-analysis-txt.tex
```

- compile pdf:

```
1 [yourloginname@pal43]~/Draft\% make clean && make
```

if you are on a DESY machine, load some new LaTeX before, e.g.

```
1 [yourloginname@pal43]~/Draft\% module load texlive/2015
```

- The pdf file ZDP-cpc.pdf contains the draft with your modifications.
- commit to svn repository (need to have rights, write to andrii.verbytskyi@desy.de):

```
1 [yourloginname@pal43]~/Draft\% svn commit -m "my changes"
```