

ZEUS data preservation, paper preparations and status at DESY

A. Geiser, 2.2.2016

Generic plan for dedicated ZEUS data preservation paper in some computing journal in pipeline for already quite a while

Andrii Verbytskyi kindly took initiative to actually set off the project and provide content since beginning of the year
(see presentation A.V. at January ZEUS physics meeting)

This talk:

- my personal view on goals and status of parts of the paper
- brief status of data preservation at DESY and ZEUS in general

Next talk:

- More aspects (including MC generation and non-ZEUS efforts) A. Verbytskyi

Goals of ZEUS data preservation paper

preliminary, to be discussed with all (potential) authors.

- General scope: **concentrate on information not (easily) available elsewhere**, combined with very brief reminders of well-known things for context. Concentrate on **aspects which will still be relevant in 10 years from now**.
- Provide **description of goals and history of ZEUS data preservation project** + **comprehensive list of relevant references** (not available elsewhere)
- Give hint about **physics program**:
 - references to **Future HERA workshop + HERA-LHC + synergy with EIC**
 - try to collect **complete list of references for HERA-related physics reviews** (please provide input!)
- Summarise **collider + detector configurations and relevant performance aspects** for data periods recorded in common ntuples (available publications mainly cover design, not actual performance)
 - > collect **list of relevant detector papers, conference reports, theses, ...** (please provide input!)
- Describe **ZEUS data model, DESY/DPHEP storage model and bit preservation**
- Describe **ZEUS Common Ntuple content** and what is good for what
- Point out **which data sets are particularly well suited for which kind of analysis**
- Describe **MC samples available in common ntuple** and what is good for what
- Describe **event display** (common ntuple version)
- Describe **package for new MC generation** (- > see talk Andrii)
- Describe **paper and electronic ZEUS archive**

anybody who judges
to have contributed
should sign

Examples for input sources for ZEUS data preservation paper

The screenshot shows a web browser window with the INSPIRE website. The search bar contains the text "find data preservation and CN ZEUS". The search results show two records found. The first record is titled "1. The ZEUS data preservation project" and is by "ZEUS and DESY DPHEP Group Collaborations (J. Malka (DESY) for the collaboration)". The second record is titled "2. The ZEUS data preservation project" and is by "ZEUS Collaboration (Janusz Malka et al.)". Both records are from 2012 and are 2 and 4 pages long respectively. The search took 0.14 seconds.

File Edit View History Bookmarks Tools Help

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https://inspirehep.net/search?ln=en&ln=en&p=find+data+preservation+and+CN+ZEUS&of=hb&action_search=Search&sf=8

INSPIRE HEP

Welcome to INSPIRE, the High Energy Physics information system. Please direct qu

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find data preservation and CN ZEUS Brief format Search Easy Search Advanced Search

find | "Phys.Rev.Lett.,105" :: more

Sort by: Display results:

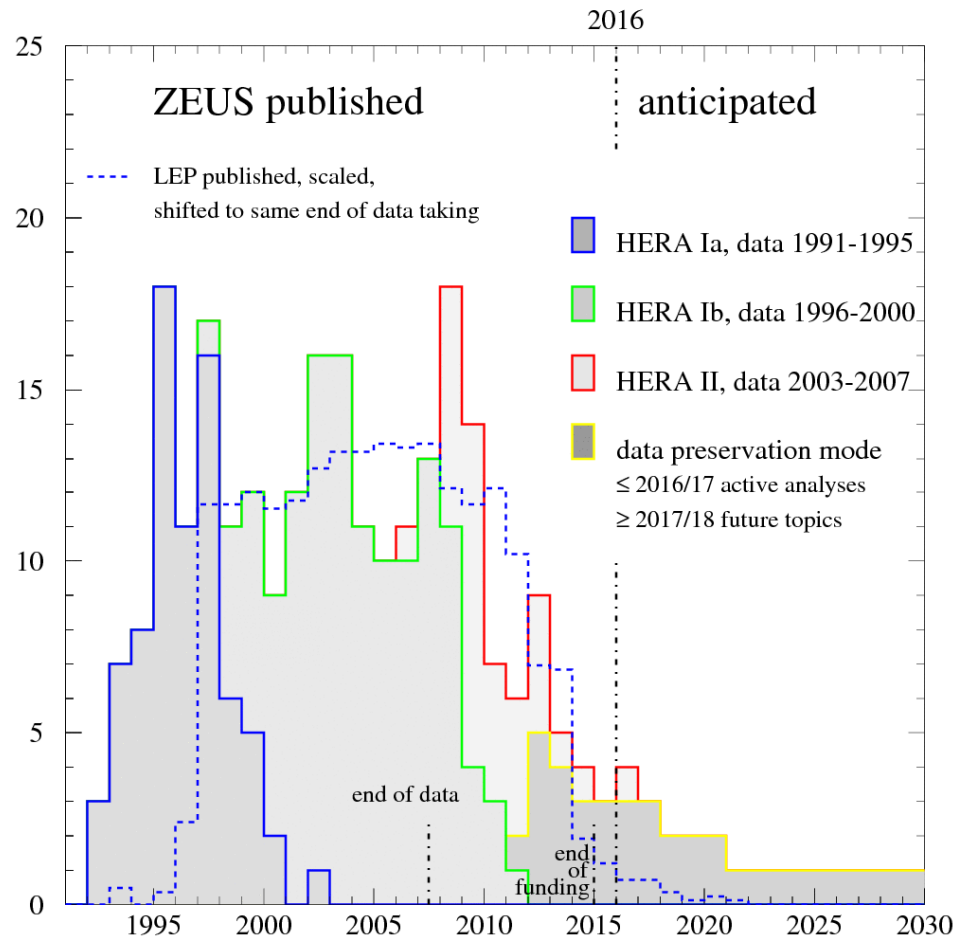
latest first desc. - or rank by - 25 results single list

HEP 2 records found Search took 0.14 seconds.

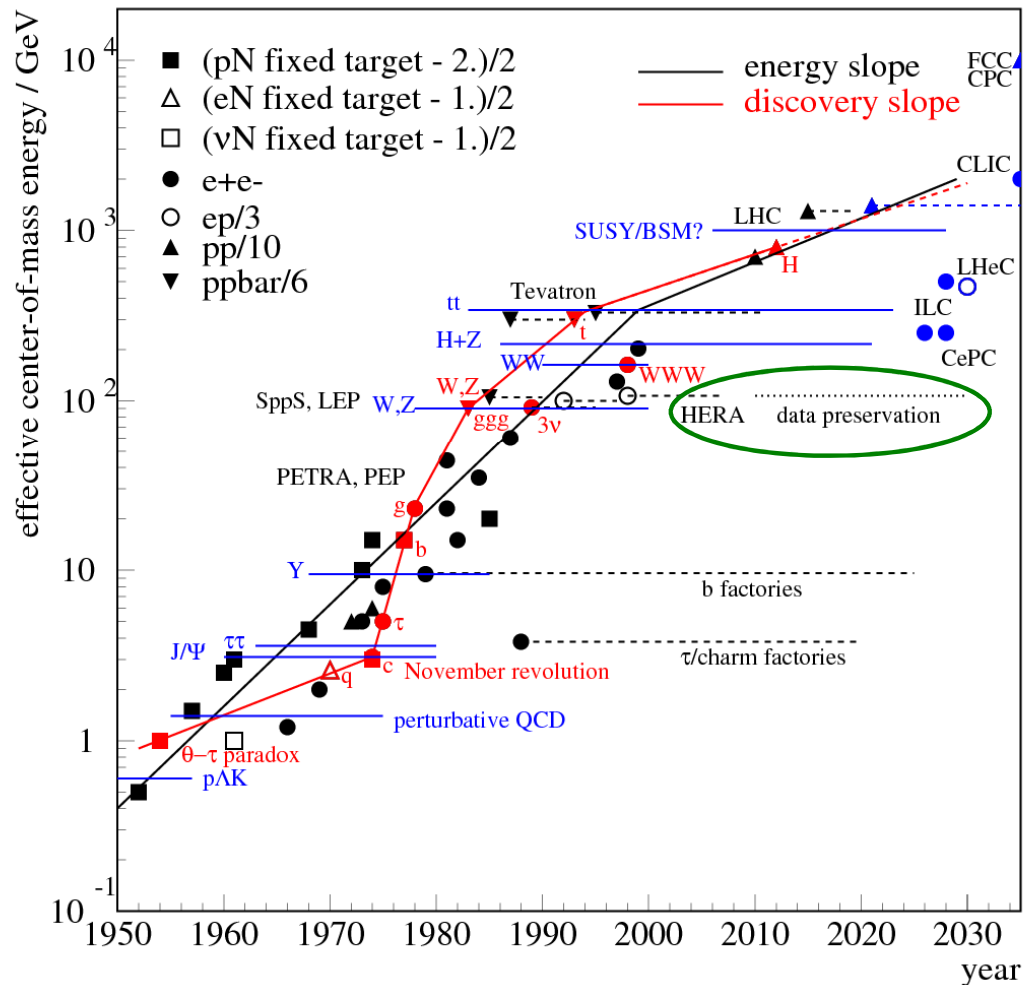
1. The ZEUS data preservation project
ZEUS and DESY DPHEP Group Collaborations (J. Malka (DESY) for the collaboration). 2012. 2 pp.
DOI: [10.1109/NSSMIC.2012.6551468](https://doi.org/10.1109/NSSMIC.2012.6551468)
Conference: C12-10-29, p.2022-2023 [Proceedings](#)
[References](#) | [BibTeX](#) | [LaTeX\(US\)](#) | [LaTeX\(EU\)](#) | [Harvmac](#) | [EndNote](#)
[Detailed record](#)

2. The ZEUS data preservation project
ZEUS Collaboration (Janusz Malka et al.). 2012. 4 pp.
Published in J.Phys.Conf.Ser. 396 (2012) 022033
DOI: [10.1088/1742-6596/396/2/022033](https://doi.org/10.1088/1742-6596/396/2/022033)
Conference: C12-05-21.3 [Proceedings](#)
[References](#) | [BibTeX](#) | [LaTeX\(US\)](#) | [LaTeX\(EU\)](#) | [Harvmac](#) | [EndNote](#)
[Detailed record](#) - [Cited by 1 record](#)

Example for contribution to DP history/goals/physics section



Example for contribution to DP history/goals/physics section?



need to add EIC

Example for contribution to detector configuration section

not yet complete

Period HERA	Ia	Ib						IIa		IIb	IIc					
Year	91-95	96-97		98-99		99-00		03-04		04-06		06-07		07LER	07MER	
CN label	-	96	97	98	99e	99p	00	03p	04p	05e	06e	06p	07p	ler	mer	
Collision	$e^{\pm}p$	e^+p		e^-p		e^+p			e^-p		e^+p					
E_p , GeV	820			920											460	575
CN lumi, pb ⁻¹	-	10.8	27.9	4.6	12.1	19.7	46.2	2.1	38.7	134.2	54.8	146.4	14.5	7.4		
lumi unc.	-	1.1%	1.8%			2.25%		3.5%	2.5%	1.8%		2.1%	1.8%			
lumi corr.	-	-	-			-		-	+0.7%	+0.7%		+1%	-0.5%	-0.4%		
events in CN (10 ⁶)	-	19.9	30.7	8.9	15.7	19.7	47.2	3.7	47.4							
CTD	yes	nominal HERA I ^a						nominal HERA II ^b								
FTD	yes	yes (not used in CN)						yes (not used in CN)								
RTD	yes	yes (used in e id only)						yes (used in e id only)								
TRD	yes	no						-								
STT	-	-						yes	no	yes						
VXD	yes	-						-								
MVD	-	-						yes ^c								
SRTD	?	nominal HERA I ^d						nominal HERA II ^e								
e taggers	?	8 m, 35 m, 44 m (not used in CN)						6 m, ... (not used in CN)								
PRT	?	partially (not used in CN)						-								
BPT	?	partially (not used in CN)						-								
LPS	?	partially (not used in CN)						-								
CAL	yes	nominal HERA I ^f						nominal HERA II ^g								
PRES	yes?	nominal HERA I ^h						nominal HERA II ⁱ								
HES	-	partially ^j						yes ^k								
BPC	?	partially ^l						-								
FPC	?	yes ^m						-								
FNC	?	partially (not used in CN)						no								
BAC	yes	nominal HERA I ⁿ						nominal HERA II ^o								
BRMU	yes	nominal HERA I ^p						nominal HERA II ^q								
FMU	yes	nominal HERA I ^r						nominal HERA II ^s								

Example for contribution to event display section (A. Zenaiev)

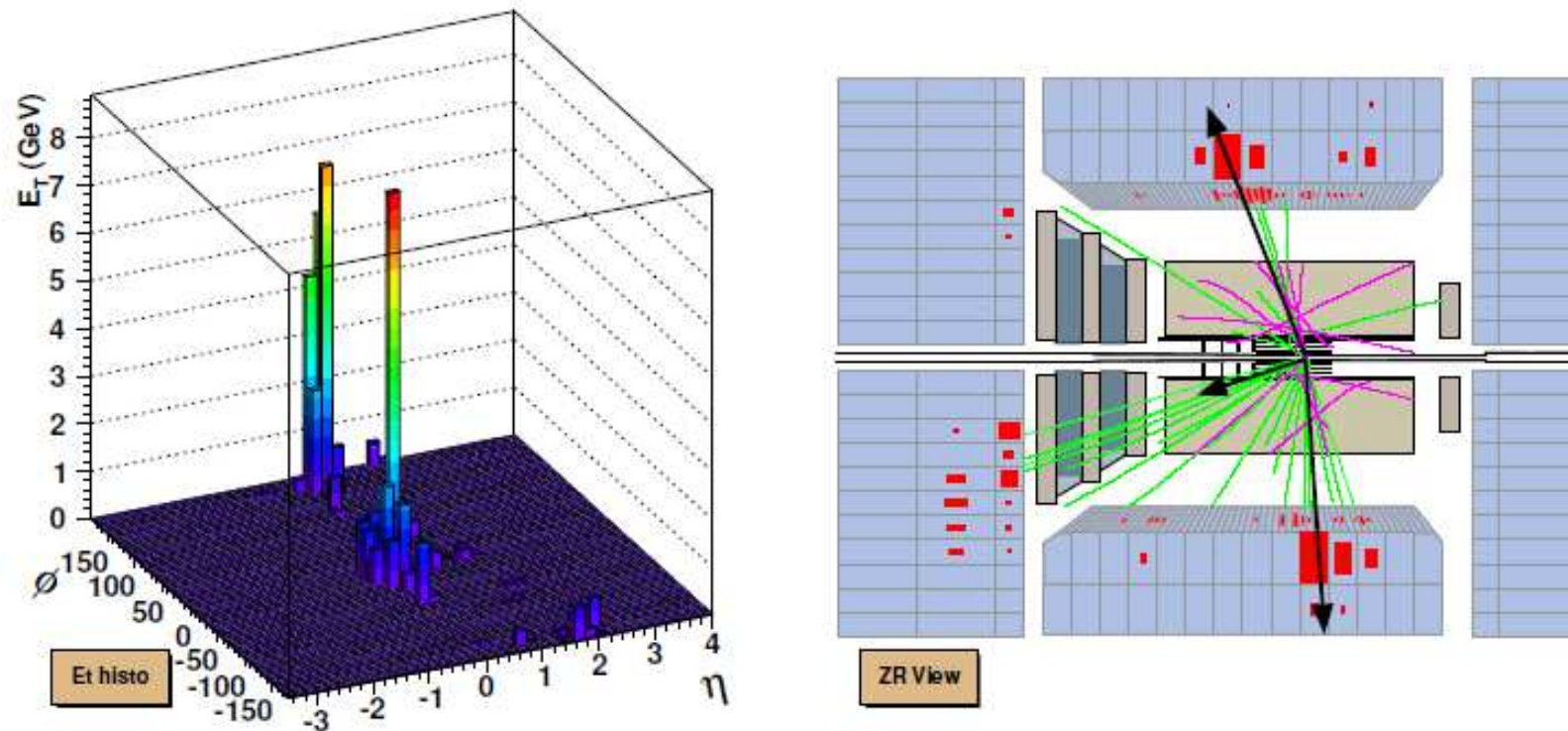


Figure 6: One of the selected events from the Z^0 -boson analysis [55]. The transverse energy, $E_T(\eta, \phi)$, distribution in the CAL sells (left) and ZR event view (right) are shown.

proposed paper strategy

- to be published e.g. in Computer Physics Communications
- provide long version (including links to internal info) as ZEUS note, for documentation of sources
- submit shorter version (with public references only) to journal
- add separate technical notes ('manuals') on current technical procedures for data access, scripts etc., separately for MPI and DESY (+others if relevant)

Satellite meeting on synergies HERA analysis/EIC at DIS2016?

- currently under discussion ...

Data preservation status at DESY

more details see talk A.G. 24 March 2015

Account management:

M. Wing (UCL), official

Remaining hardware:

I. Martens (DESY/CMS)
inofficial (good will)

- **Data preservation: hardware and storage at DESY:**
D. Kruecker (DESY/IT), official, ~3 months left to go
- **Data preservation: DESY/NAF analysis access to **existing** root data,**
support for interpretation of CN variables
A. Geiser (DESY/CMS), official, (open ended)
- **Web archive/documentation at DESY:**
K. Wichmann (DESY/CMS), official until may 2016, + support **V. Myronenko/O. Turkot**
- Good news: J. Malka (IT, general) and A. Zenaiev (FH, event display) back at DESY
inofficially available for advice
- **Data preservation at MPI + MC generation: see talk **A. Verbytskyi****

DATA - format

slide

J. Malka

Sept. 2014

- * the Data and MC samples available in Root Common Ntuples format are documented on the common ntuple web page:

http://www-zeus.desy.de/ZEUS_ONLY/analysis/comntp/

- * the DPHEP data are the CN from versions

* v02d	data	II
* V02e,v02f	mc	II
* v06b	mc	II
* v06d	data	II
* v07a	data, mc	I
* v08b	data, mc	I, II

Done (D. Krücker) (status Jan 2016)

Data and root CN complete

(1 disk copy + 2 tape copies)

some log files and PAW MC files lost
(see talk 24 March 2015)

483631 root files and 175T capacity

- * The log-files from the production needs to be copied – ongoing

Summary and Conclusions

- work on a ZEUS data preservation paper has started, initiated by A. Verbytskyi (-> abstract submitted to DIS by A.V.)
- hope to have draft ready for first wider circulation "soon"
-> more detailed discussion
- data preservation at DESY alive and reasonably healthy
(within very limited manpower availability)
some people leaving/reducing scope, some key people back at DESY
(at least for inofficial advice)
- + significant efforts at MPI (next talk)
-> chance that new MC production might fly after all?