

CMS + ATLAS Higgs->4Lepton demonstrator project for PUNCH platform



A.Geiser, DESY, 21.6.23, for TA4 and the Higgs->4Lepton PUNCH demonstrator team (summer students)

Main purpose: **demonstrate practical feasibility of a PUNCH use case on the PUNCH Science Data Platform going significantly beyond what is already available outside PUNCH** (i.e. not just an import of things already available elsewhere), **using PUNCH resources** already now wherever possible.

PUNCH goal stated in fall 2021: **“to set up a working prototype within the first year”** as part of the **TA4** activities

-> see reports at 2022 Göttingen general meeting

Transformation of data from different projects/sources to common analysis data format, TA4/WP3. mostly done

(Current prototype still limited to HEP as starting point, extension to other PUNCH4NFDI communities conceptually started).

Representation of the corresponding metadata in a common PUNCH scheme based on XML and datacite, **TA4/WP2. ongoing**
(Current prototype: preliminary practical starting point, including visualization.) **Details being implemented** by Ding-Ze (Lisa).

Actual usage of storage4punch resources, TA2/WP1,
(including **test of** the corresponding **access procedures, TA4/WP3**).

PUNCH DESY pilot dcache storage tested successfully:

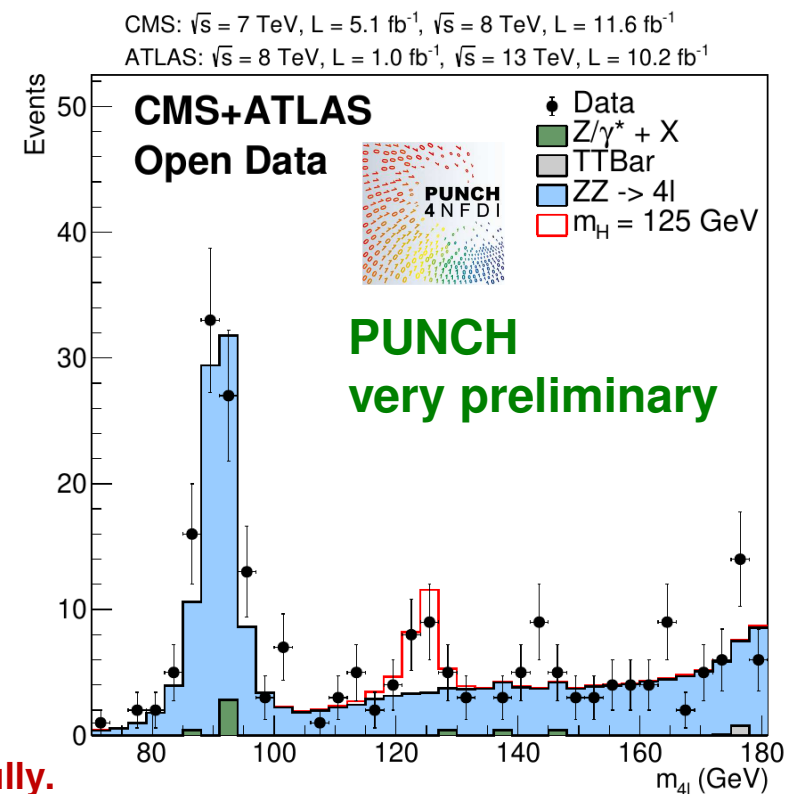
<https://intra.punch4nfdi.de/?md=/docs/TA2/WP1/StoragePrototyping.md>

<https://dcache-demo.desy.de/punch/HEP-OpenData/NanoAODCMS>

Bonn storage still to be tested.

Usage of compute4punch resources to run scripts, TA2/WP2
(including **test of** the corresponding **access procedures, TA4/WP3**).

Access to and usage of KIT PUNCH computing tested successfully.
Containerization into docker container still to be done.



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A.Geiser, DESY, 29.9.22, for TA4 and the Higgs->4Lepton PUNCH demonstrator team (summer students)

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Usage of portal resources for **scripts and documentation, TA4/WP4** (including e.g. “automatic” transformation Twikis -> Markdown, **TA4/WP3**).

description of transformed data format available on AIP gitlab:

<https://intra.punch4nfdi.de/?md=/docs/TA4/WP3/Workbook.md>

- Textual description/documentation of analysis workflow to be added on AIP gitlab

- Relevant scripts to be stored on AIP gitlab

Setup of corresponding Research Products, TA4/WP1 (Ivan)

for PUNCH derived data sets and entire example (on the platform, **TA4/WP4**, AIP team).

- Integrate transformed data files into the WP1 research product description setup (for data files).

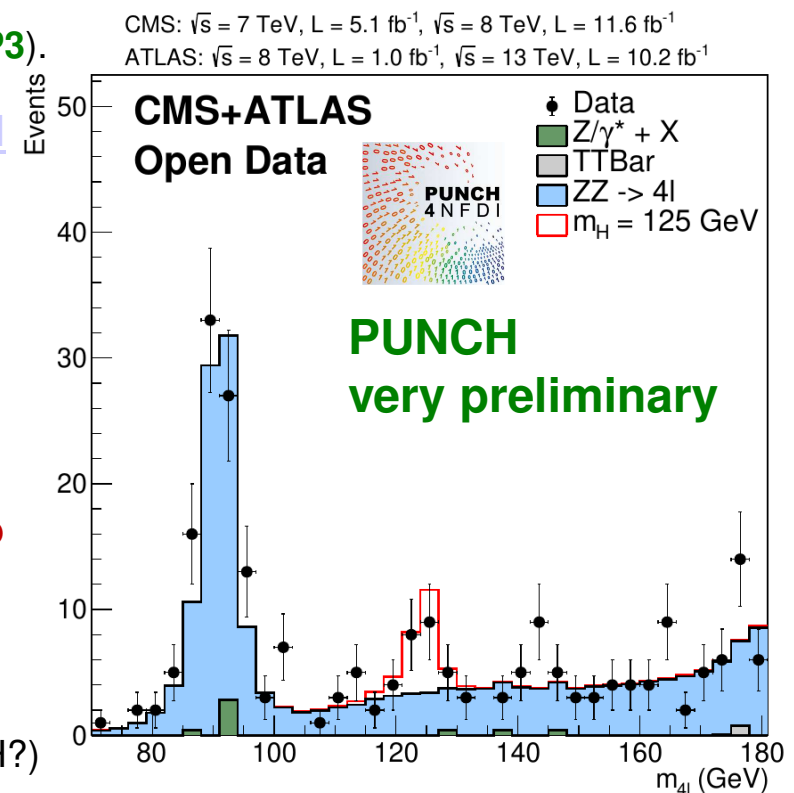
- Integrate scripts into the WP1 research product description setup (for software).

- Implement the workflow into the WP4 ReAna setup.

- Integrate this ReAna setup into the WP1 research product setup (for workflows).

Any overlap with TA3? (e.g. accessibility of ROOT versions in PUNCH?)

Make the example publicly available on the PUNCH platform



Backup

nonpublic

public

public

public punch



by ATLAS collaboration

public

public

download

ATLAS Open Data 2016
(on separate ATLAS
Open Data portal)

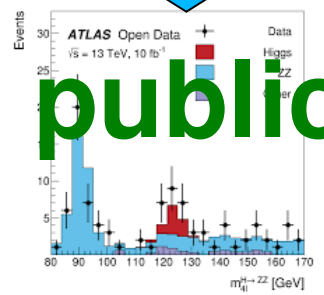
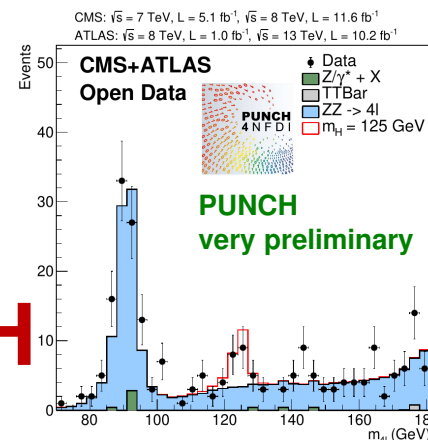
software package 2
or Jupyter notebook

now public

PUNCH TA4

50% public (CERN eos)
50% storage4punch

PUNCH

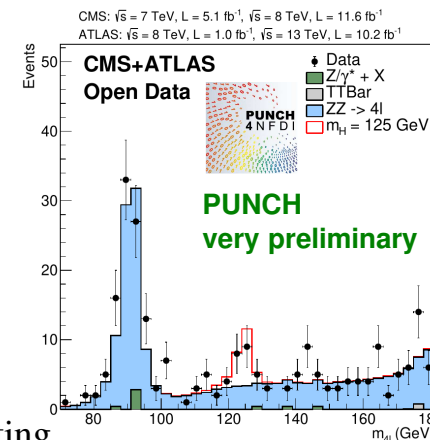
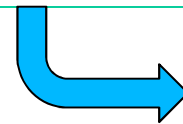


What a potential PUNCH user will see on the platform once fully documented



76 different samples with common unified & simplified research level data format, **via the PUNCH platform**

“single” script, < 1 CPU day,
documentation + metadata



details
being
finalized