

The PHENIX DAP update

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Overview

- The DAP site development
 - Improved mechanics
 - Added pages and external references, posted the “Analysis Note Template”
 - General structure and functionality are close to completion
 - Ready to accommodate all sorts of materials
- Added HEPData page and links, and Inspire links
- GitHub: steady use of the “documentation” repository
 - Staging area for HEPData uploads, some Rivet materials
- Started test uploads to HEPData (thanks to Christine who leads preparation of the new materials)
- Zenodo@CERN: uploads pending restoration of the PHENIX website

The DAP site mechanics (recap)

- We avoid entering [data, web links, documents links and other references](#) into pages as free text as it leads to duplication of effort, cumbersome code and is error prone
- I have developed a set of macros for the site which are using YAML catalogs (effectively “databases”) holding structured data, to create pages:
 - Runs
 - Documents and links
 - Images
 - Keywords
 - Variable descriptions
- Provides consistency of all material across the site and reduces effort when making new pages

Example: Run Data managed in YAML

```
2x2 DAC-values correspond approximately to [energy/tile]: 39=2.2 GeV (The analysis was done with 39(37))<br/>
4x4 DAC-values correspond approximately to [energy/tile]: 29=3.7 GeV, 30=4.7 GeV , and 31=5.6 GeV<br/>
RICH4x5 ADC-values correspond approximately to: 920=3p.e.<br/>

These values are estimated from Run 9 ADC sum analysis. The real thresholds have to be determined offline.
They depend on the gains/HV settings of the EMCal modules. The EMCal values in parantheses correspond to the
threshold of the Pb61.

ert_masks:
  - '03/10/13 17:30, 386830, ERT_MASK:addmask.txt_20130310, yes, Used ERT online monitoring. CHC add in 4x4C E3 SM10.'
```

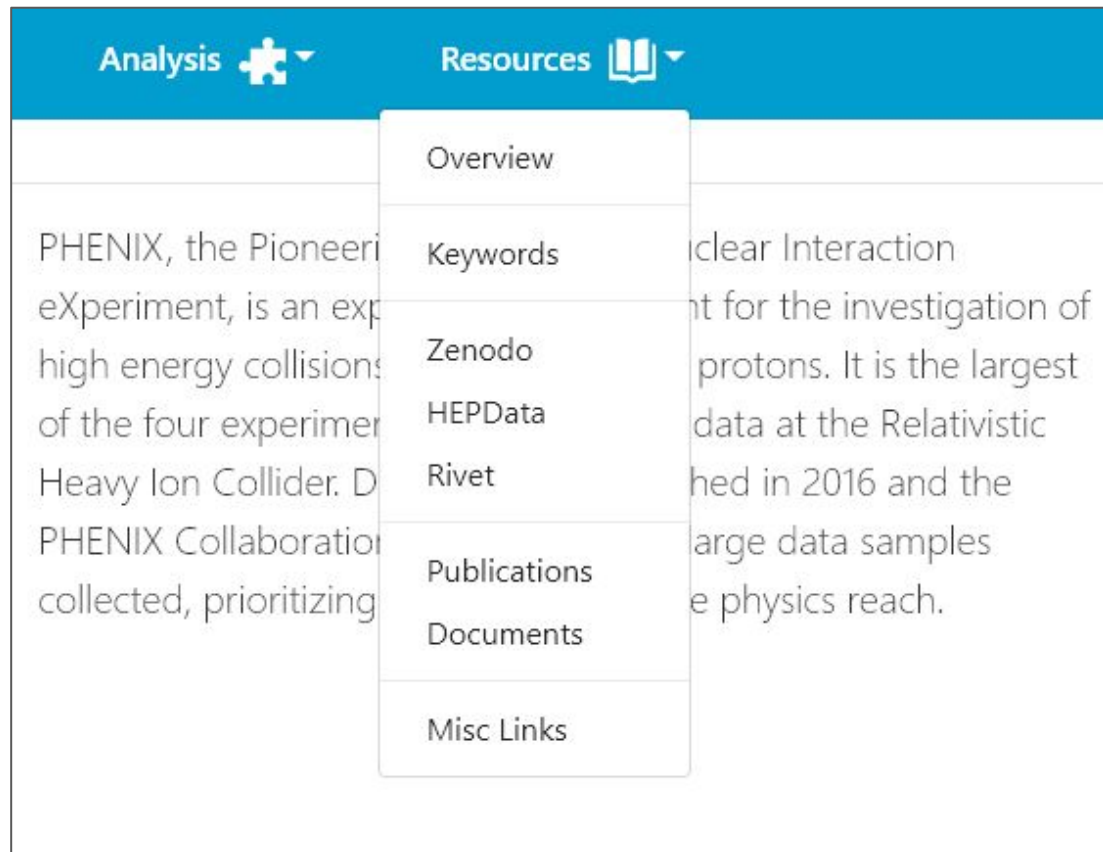
- run: run14
period: 2014
coordinator: Klaus Dehmelt, SUNYSB.
rhic:

- {
 species: '¹⁹⁷Au⁷⁹⁺+¹⁹⁷Au⁷⁹⁺+',
 energy: 7.3,
 lumi: '4<i>μb</i>⁻¹',
 Nevents: 23M/10M
}
- {
 species: '¹⁹⁷Au⁷⁹⁺+¹⁹⁷Au⁷⁹⁺+',
 energy: 100.0,
 lumi: '7.5<i>nb</i>⁻¹',
 Nevents: 3.5B/19B
}
- {
 species: '³He²⁺+¹⁹⁷Au⁷⁹⁺+',
 energy: 103.5+100.0,
 lumi: '24<i>nb</i>⁻¹',
 Nevents:
}

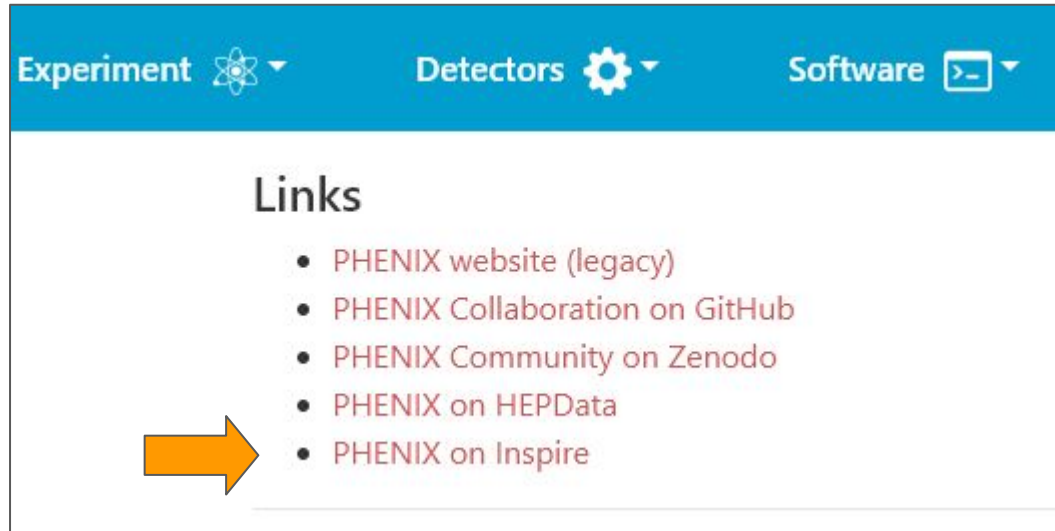
ert_comment: Summary of thresholds (DAC values). Values in parentheses are for the Pb61.
ert_thresholds:

- '02/07/14, 401984, 30(29), 31(30), 29(29), 29(26), 920, Run14AuAu15 pedestal tuned'
- '03/12/14, 405357, 31(30), 32(31), 30(29), 39(36), 920, Run14AuAu200 pedestal tuned'
- '06/17/14, 415200, 32(31), 33(32), 31(30), 44(40), 920, Run14He3Au200 pedestal tuned'

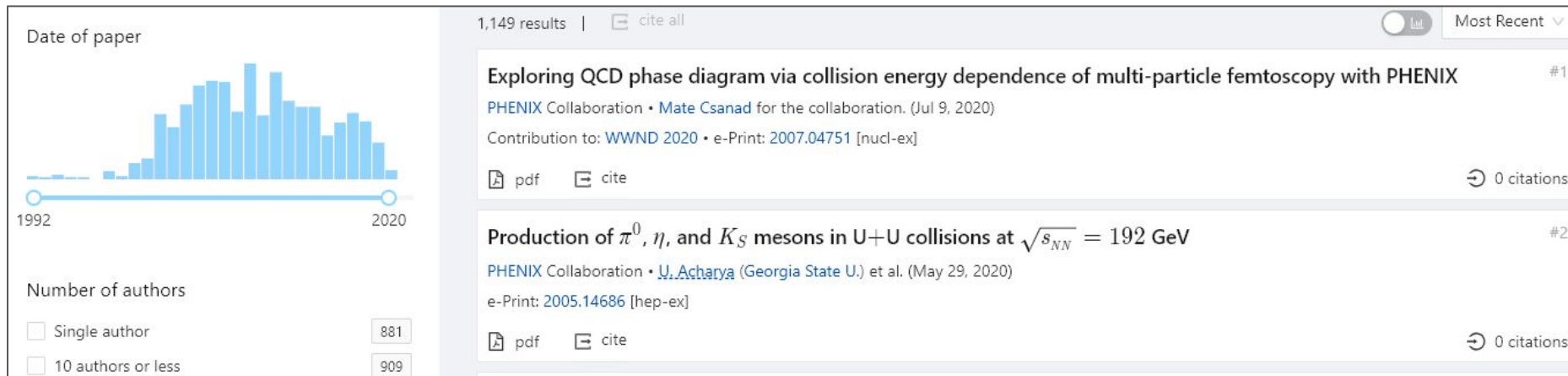
Updated the “Resources” section and menu



Updated the “Links” page



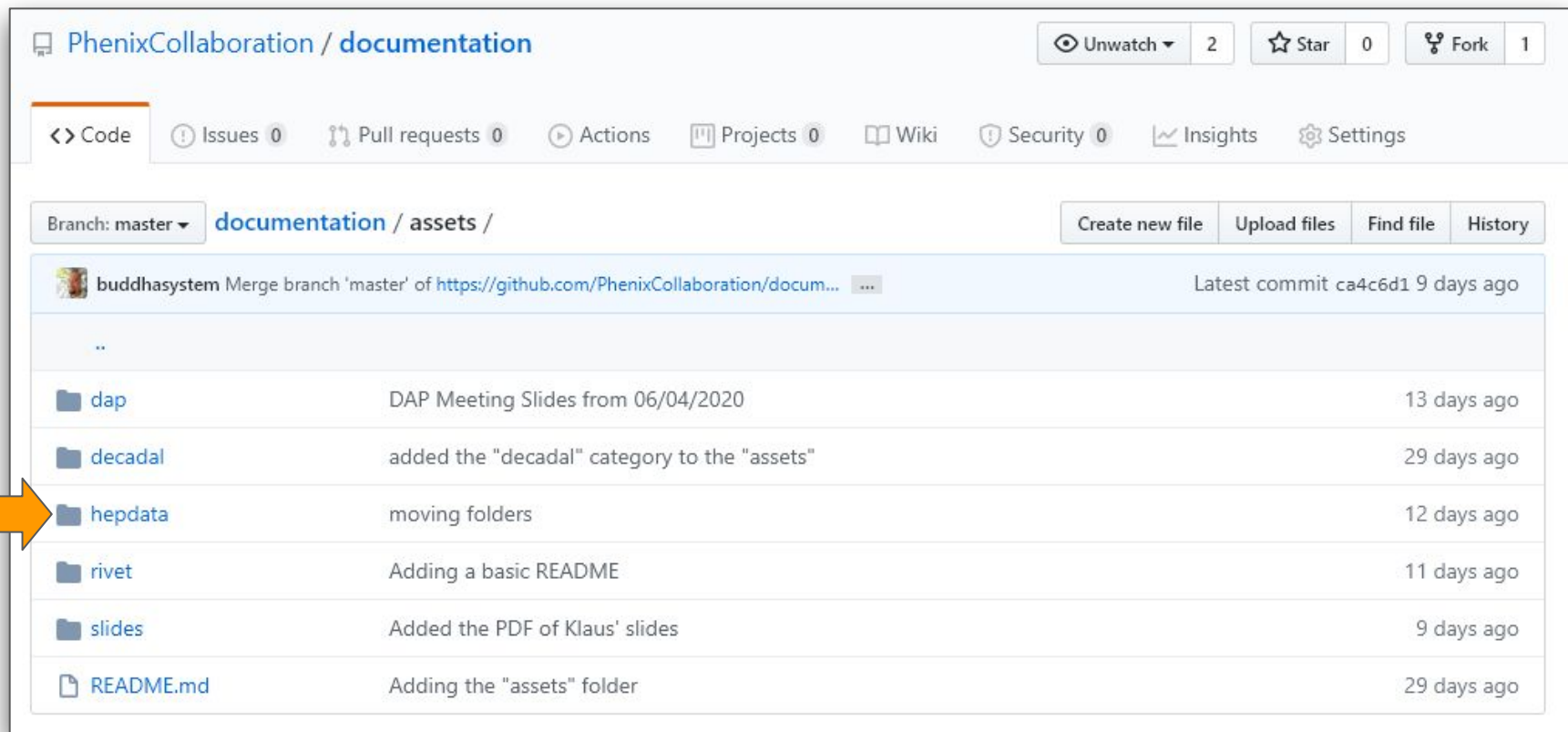
PHENIX on Inspire



Other activity

- GitHub: adding materials to the “documentation” repo
- Christine Nattrass and her team prepared a number of HEPData-formatted submission packages for upload to the CERN HEPData site
 - Work in progress; testing new materials in the “sandbox”
 - Managed (and corrected) on GitHub
- Re-establishing PHENIX presence on the HEPData site
 - There are 28 older PHENIX items on HEPData
 - Got approved as the PHENIX representative on HEPData
 - Added HEPData links and an intro page to the site (in “resources”)
- Rivet: TBD, need to better understand this
 - <https://arxiv.org/abs/1912.05451>
 - May require non-trivial investment of labor which we don't really have
 - Heavy-ion contributions are expressly welcome by the Rivet community

“Documentation” repo on GitHub sees more use



The screenshot shows the GitHub interface for the repository `PhenixCollaboration / documentation`. The page is viewed on the `assets` directory. The file list includes folders like `dap`, `decadal`, `hepdata`, `rivet`, and `slides`, along with a `README.md` file. An orange arrow points to the `hepdata` folder.

Branch: master `documentation / assets /`

Create new file Upload files Find file History

buddhasystem Merge branch 'master' of <https://github.com/PhenixCollaboration/docum...> Latest commit ca4c6d1 9 days ago

..		
dap	DAP Meeting Slides from 06/04/2020	13 days ago
decadal	added the "decadal" category to the "assets"	29 days ago
hepdata	moving folders	12 days ago
rivet	Adding a basic README	11 days ago
slides	Added the PDF of Klaus' slides	9 days ago
README.md	Adding the "assets" folder	29 days ago


An example of new HEPData content on GitHub

The screenshot shows a GitHub repository for PhenixCollaboration/documentation. The file path is documentation/assets/hepdata/ppg079/fig1.yaml. The file is 140 lines (140 sloc) and 4.74 KB. It contains a YAML configuration for independent variables.

```
1 independent_variables:
2   - header: {name: '$p_T$'}
3     values:
4       - {low: 1, high: 1.5}
5       - {low: 1.5, high: 2}
6       - {low: 2, high: 2.5}
7       - {low: 2.5, high: 3}
8       - {low: 3, high: 3.5}
9       - {low: 3.5, high: 4}
10      - {low: 4, high: 4.5}
11      - {low: 4.5, high: 5}
12      - {low: 5, high: 5.5}
13      - {low: 5.5, high: 6}
14      - {low: 6, high: 6.5}
15      - {low: 6.5, high: 7}
16      - {low: 7, high: 7.5}
17      - {low: 7.5, high: 8}
18      - {low: 8, high: 8.5}
19      - {low: 8.5, high: 9}
20      - {low: 9, high: 9.5}
```

HEPData

[About](#) [Submission Help](#)

 **HEPData**
Repository for publication-related High-Energy Physics data


This new site replaces the old site at <http://hepdata.cedar.ac.uk>.


Search on 9046 publications and 85608 data tables.


[Search](#) [Advanced](#)


e.g. reaction $P P \rightarrow L Q L Q X$, title has "photon collisions", collaboration is LHCf or D0.

Data from the LHC








ATLAS
[View Data](#)


ALICE
[View Data](#)


CMS
[View Data](#)


LHCb
[View Data](#)

The new HEPData page on the website

[Experiment](#)  [Detectors](#)  [Software](#)  [Analysis](#)  [Resources](#)  [About](#) 

HEPData

HEPData is an open-access repository for scattering data from experimental particle physics which includes data points from several thousand publications.

The PHENIX Collaboration is using this platform as one of the components of its [Data and Analysis Preservation \(DAP\) effort](#), and is adding material to its [PHENIX on HEPData](#). Members of the PHENIX Collaboration interested in creating materials suitable for submission to HEPData are encouraged to contact the [DAP Team](#).

Publication Materials

- [HEPData 82575](#) Measurements of double-helicity asymmetries in inclusive J/ψ production in longitudinally polarized p+p collisions at $\sqrt{s}=510$ GeV : **Phys.Rev. D94 (2016) 112008, 2016**
- [HEPData 73691](#) Measurement of parity-violating spin asymmetries in W^\pm production at midrapidity in longitudinally polarized p+p collisions : **Phys.Rev. D93 (2016) 051103, 2016**
- [HEPData 71403](#) Charged-pion cross sections and double-helicity asymmetries in polarized p+p collisions at $\sqrt{s}=200$ GeV : **Phys.Rev. D91 (2015) 032001, 2015**
- [HEPData 64716](#) Inclusive double-helicity asymmetries in neutral-pion and eta-meson production in p^+p^- collisions at $\sqrt{s}=200$ GeV : **Phys.Rev. D90 (2014) 012007, 2014**
- [HEPData 64267](#) Cross section and transverse single-spin asymmetry of η mesons in p+p collisions at $\sqrt{s}=200$ GeV at forward rapidity : **Phys.Rev. D90 (2014) 072008, 2014**
- [HEPData 64159](#) Low-mass vector-meson production at forward rapidity in p+p collisions at $\sqrt{s}=200$ GeV : **Phys.Rev. D90 (2014) 052002, 2014**
- [HEPData 63512](#) Transverse-energy distributions at midrapidity in p+p, d+Au, and Au+Au collisions at $\sqrt{s_{NN}}=62.4\text{--}200$ GeV and implications for particle-production models : **Phys.Rev. C89 (2014) 044905, 2014**
- [HEPData 62722](#) Quadrupole Anisotropy in Dihadron Azimuthal Correlations in Central dd+Au Collisions at $\sqrt{s_{NN}}=200$ GeV : **Phys.Rev.Lett. 111 (2013) 212301, 2013**
- [HEPData 57327](#) J/ψ Production in $\sqrt{s_{NN}}=200$ GeV Cu+Cu Collisions : **Phys.Rev.Lett. 101 (2008) 122301, 2008**
- [HEPData 63824](#) Measurement of Single Muons at Forward Rapidity in p+p Collisions at $\sqrt{s_{NN}} = 200\text{GeV}$ and Implications for Charm Production : **Phys.Rev.Lett. 103 (2009) 082002, 2009**

Working Links

HEPData: an example of a PHENIX entry - items of interest

[Browse all](#)
Adare, A. et al.
Last updated on 2014-08-11 17:26
Accessed 799 times
Cite
JSON

[Hide Publication Information](#)

Inclusive double-helicity asymmetries in neutral-pion and eta-meson production in $\vec{p} + \vec{p}$ collisions at $\sqrt{s} = 200$ GeV

The PHENIX collaboration

Adare, A., Aidala, C., Ajitanand, N.N., Akiba, Y., Akimoto, R., Al-Ta'ani, H., Alexander, J., Andrews, K.R., Angerami, A., Aoki, K.

Phys.Rev. D90 (2014) 012007, 2014.

<https://doi.org/10.17182/hepdata.64716>

Abstract (data abstract)

BNL-RHIC. Results are presented from data recorded in 2009 by the PHENIX experiment at the Relativistic Heavy Ion Collider for the double-longitudinal spin (LL), for π^0 and η production in $\sqrt{s} = 200$ GeV polarized p - p collisions. Comparison of the π^0 results with different theory expectations based on fits of other published data showed a preference for small positive values of gluon polarization, ΔG , in the proton in the probed Bjorken x , x_B , range. The effect of adding the new 2009 π^0 data to a recent global analysis of polarized scattering data is given.

Table 1

Data from Table 4

10.17182/hepdata.64716.v1/t1

π^0 ASYM(LL) measurements from 2005.

Table 2

Data from Table 4

10.17182/hepdata.64716.v1/t2

π^0 ASYM(LL) measurements from 2006.

Table 3

Data from Table 4

10.17182/hepdata.64716.v1/t3

π^0 ASYM(LL) measurements from 2009.

Table 4

Data from Table 5

10.17182/hepdata.64716.v1/t4

η ASYM(LL) measurements from 2005.

Table 5

Data from Table 5

10.17182/hepdata.64716.v1/t5

η ASYM(LL) measurements from 2006.

Table 2

10.17182/hepdata.64716.v1/t2

Data from Table 4

π^0 ASYM(LL) measurements from 2006.

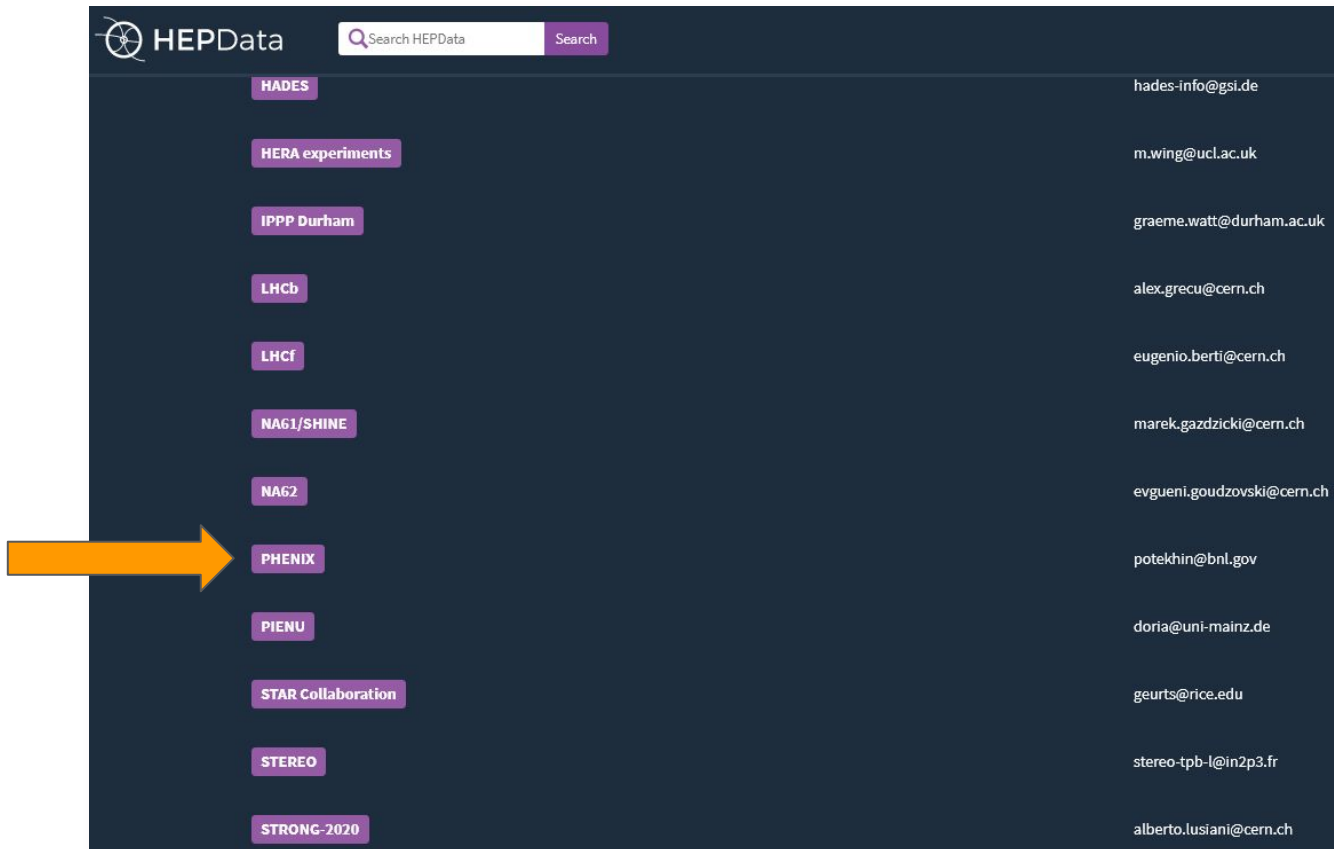
cmenergies	observables	phrases	reactions
200.0	ASYM	Inclusive, Asymmetry Measurement, Proton-Proton Scattering	P P --> π^0 X

RE	P P --> π^0 < GAMMA GAMMA > X
SQRT(S)	200.0 GeV
PT(π^0) [GEV]	ASYM(LL)
1.3 (bin: 1.0 - 1.5)	0.0012 ± 0.0013 stat ± 0.00075 sys,rel,lumi. $\pm 8.3\%$ sys.pol.
1.5 - 2.0	0.00146 ± 0.00082 stat ± 0.00075 sys,rel,lumi. $\pm 8.3\%$ sys.pol.
2.23 (bin: 2.0 - 2.5)	0.0007 ± 0.00084 stat ± 0.00075 sys,rel,lumi. $\pm 8.3\%$ sys.pol.
2.72 (bin: 2.5 - 3.0)	0.0 ± 0.0011 stat ± 0.00075 sys,rel,lumi. $\pm 8.3\%$ sys.pol.
3.22 (bin: 3.0 - 3.5)	-0.0006 ± 0.0016 stat ± 0.00075 sys,rel,lumi. $\pm 8.3\%$ sys.pol.
3.72 (bin: 3.5 - 4.0)	-0.0013 ± 0.0023 stat ± 0.00075 sys,rel,lumi. $\pm 8.3\%$ sys.pol.

Visualize

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PHENIX HEPData upload coordination



The screenshot shows the HEPData website interface. At the top, there is a logo for HEPData and a search bar with the text "Search HEPData" and a "Search" button. Below this, a list of experiments is displayed, each with a purple button-like label and a corresponding email address to the right. An orange arrow points to the "PHENIX" entry.

Experiment	Contact Email
HADES	hades-info@gsi.de
HERA experiments	m.wing@ucl.ac.uk
IPPP Durham	graeme.watt@durham.ac.uk
LHCb	alex.grecu@cern.ch
LHCf	eugenio.berti@cern.ch
NA61/SHINE	marek.gazdzicki@cern.ch
NA62	evgueni.goudzovski@cern.ch
PHENIX	potekhin@bnl.gov
PIENU	doria@uni-mainz.de
STAR Collaboration	geurts@rice.edu
STEREO	stereo-tpb-l@in2p3.fr
STRONG-2020	alberto.lusiani@cern.ch

HEPData: things to note

- Seems to be a natural and important part of the DAP effort
- Only 28 PHENIX papers out of ~1000 are present on HEPData right now
- DOI on page - durable links to these data which is perfect for DAP
- Integration with Inspire + DOIs of publications
- Data going back to 1950s
- JSON downloads of numeric data possible
- Can the authors of new PHENIX publications be encouraged to produce inputs for uploads? The process is well understood by now
- New materials were staged on GitHub and tested with the “sandbox”, final submission will be possible possible when papers are published and registered on Inspire

Summary and plans

- More improvements of the site logic
- Useful content being added
 - More links added to the link catalog on the site
 - A HEPData page added to the site
 - Reference to Inspire
 - Uploads to Zenodo will continue the PHENIX server is in commission
 - ...also will turn attention to the analysis notes. Can we publish some curated notes?
- Uploads to HEPData prepared and tested
 - Data captured on GitHub
 - A nice complement to Zenodo
- Will renew effort on software documentation
 - Need to make another effort to engage the analysis notes authors
 - + core documentation