The PHENIX DAP update

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07/16/2020

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

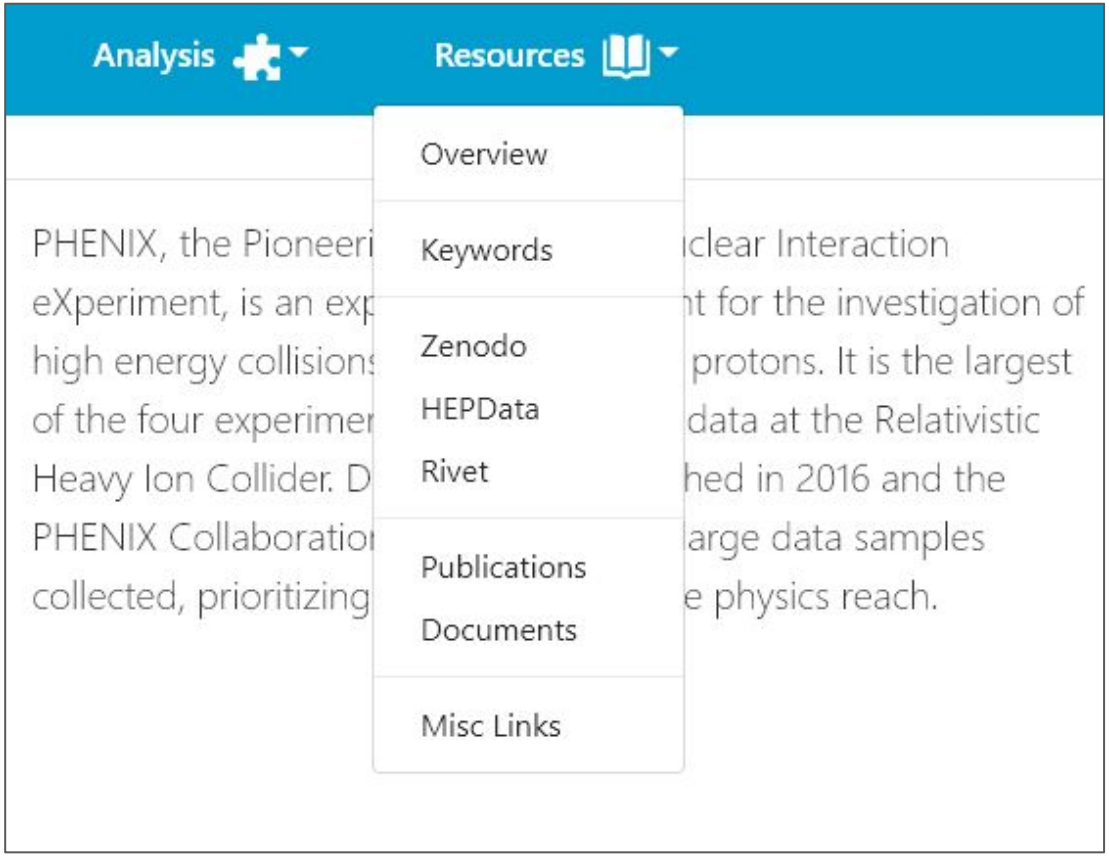
The DAP site mechanics (recap)

- 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

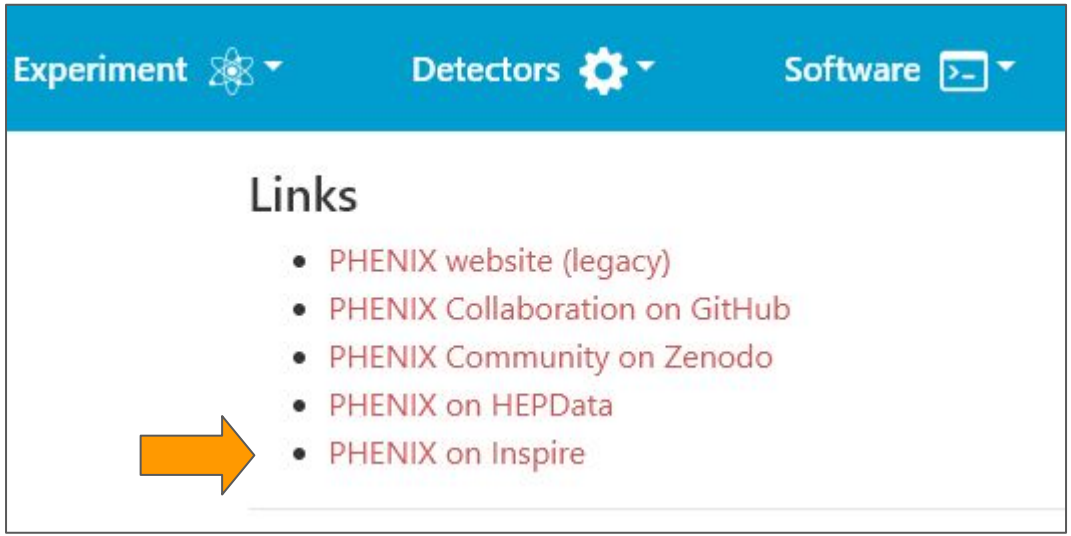
Example: Run Data managed in YAML

```
    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 PbGl.
  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: '<sup>197</sup>Au<sup>79+</sup>+<sup>197</sup>Au<sup>79+</sup>',
       energy: 7.3,
       lumi: '4<i>&amp;mu;b</i><sup>-1</sup>',
       Nevents: 23M/10M
      }
    - {
       species: '<sup>197</sup>Au<sup>79+</sup>+<sup>197</sup>Au<sup>79+</sup>',
       energy: 100.0,
       lumi: '7.5<i>nb</i><sup>-1</sup>',
       Nevents: 3.5B/19B
      }
    - {
       species: '<sup>3</sup>He<sup>2+</sup>+<sup>197</sup>Au<sup>79+</sup>',
       energy: 103.5+100.0,
       lumi: '24<i>nb</i><sup>-1</sup>',
       Nevents:
      }
  ert_comment: Summary of thresholds (DAC values). Values in parentheses are for the PbGl.
  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'
```

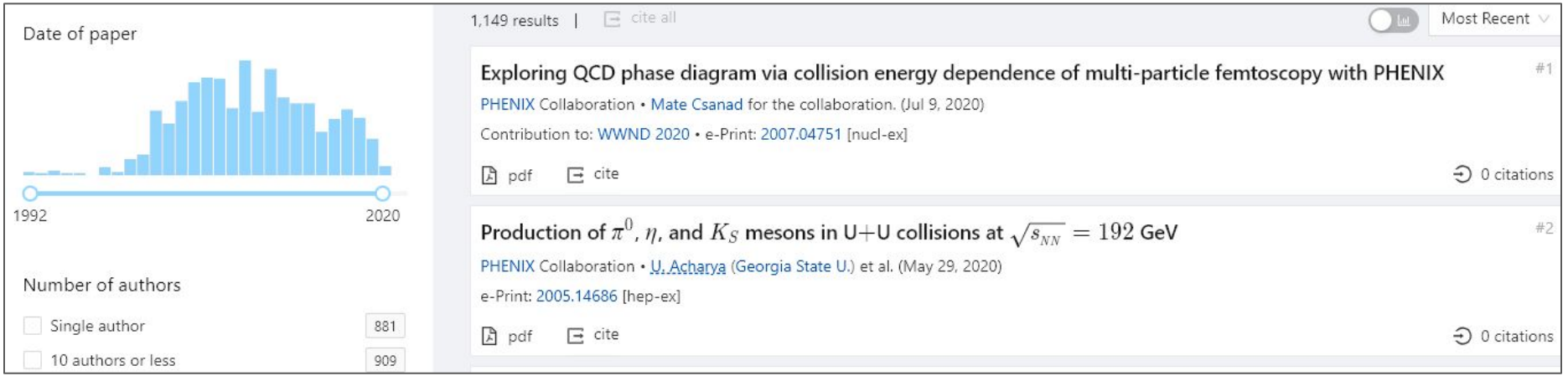
Updated the “Resources” section and menu



Updated the “Links” page



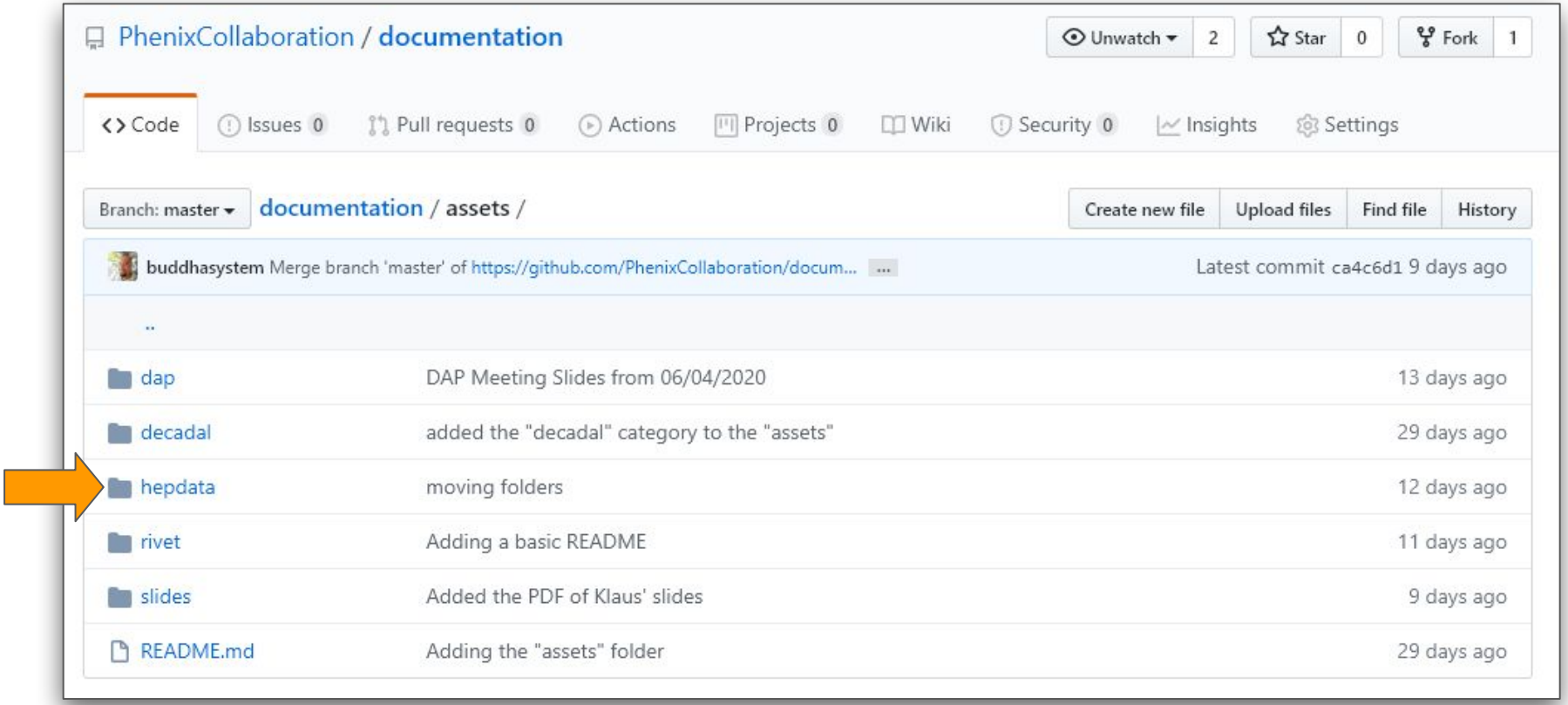
PHENIX on Inspire



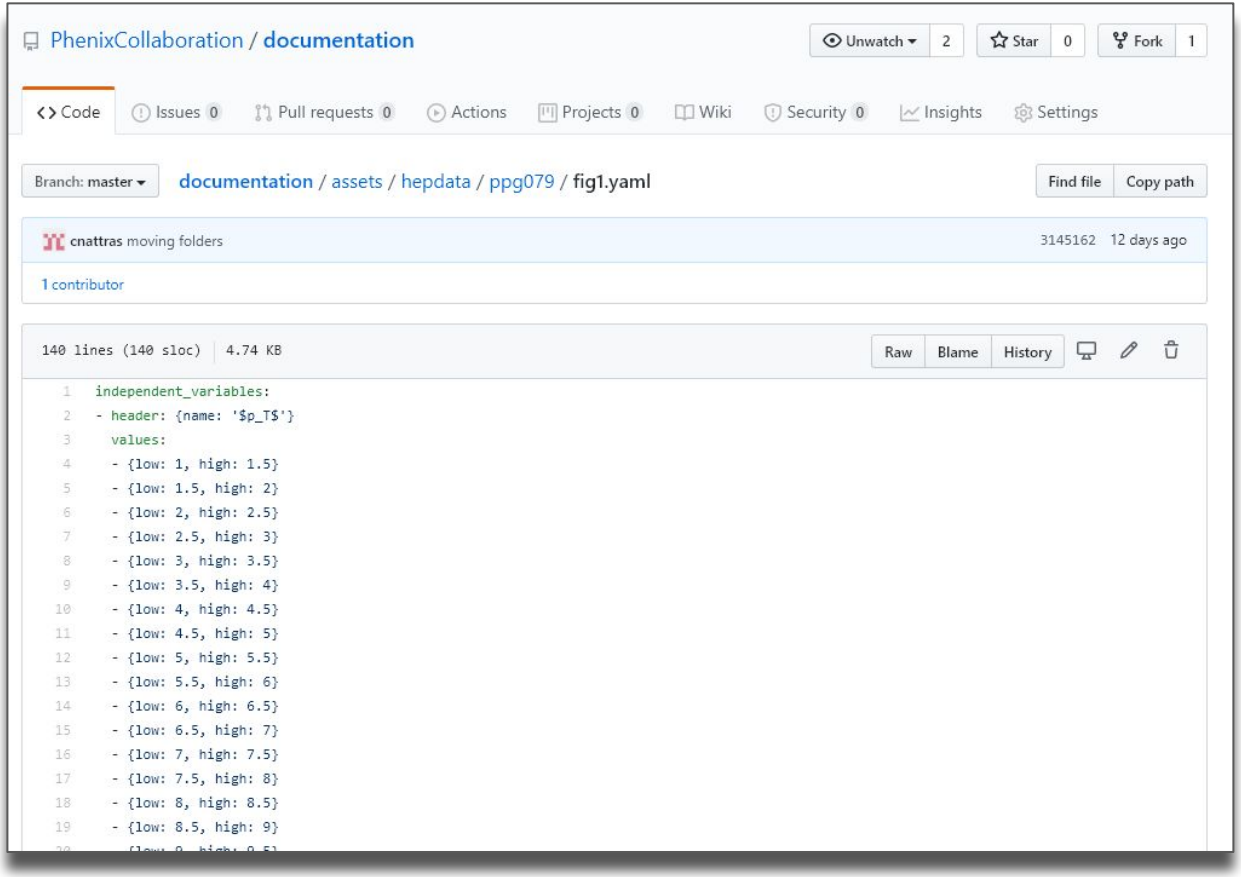
Other activity

- 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

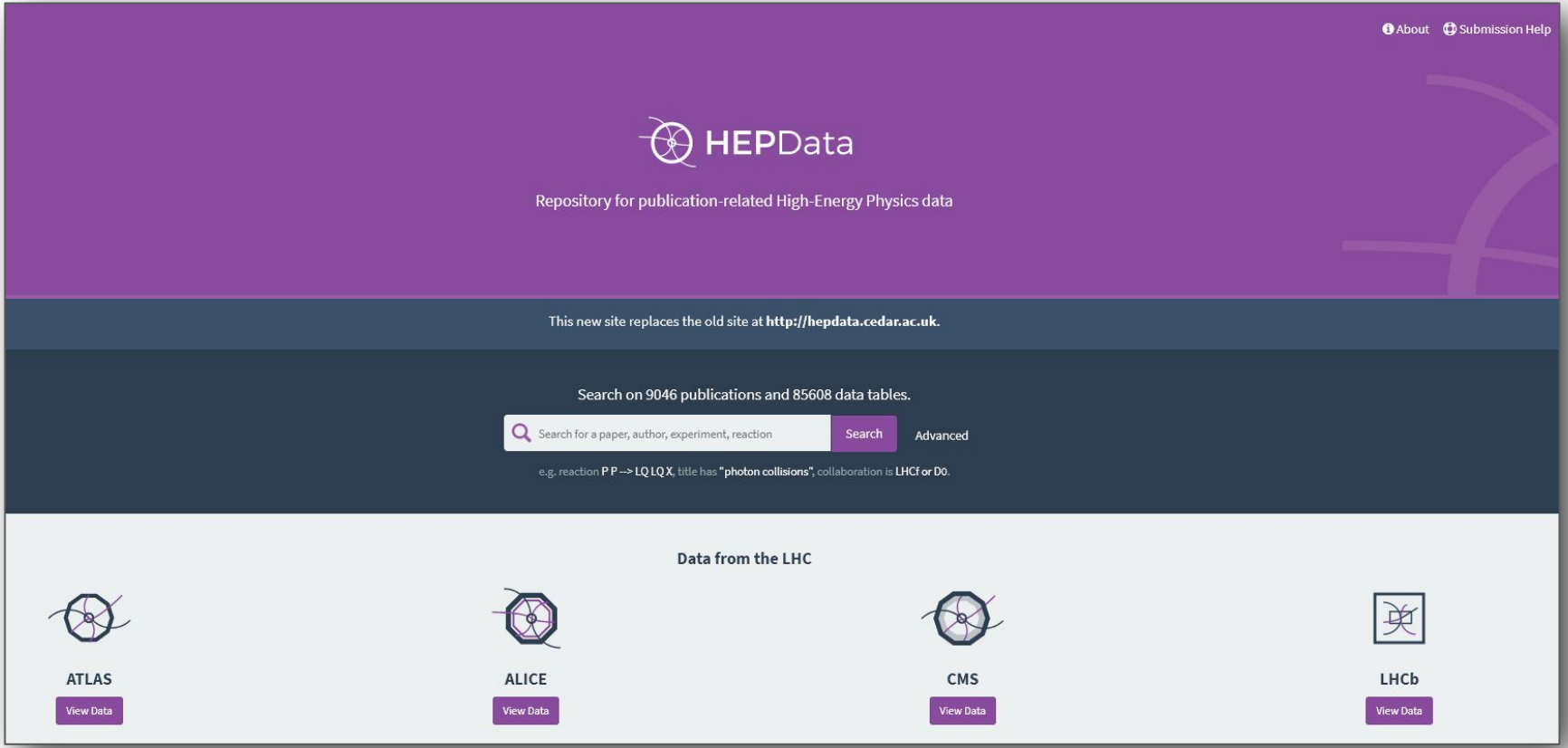
“Documentation” repo on GitHub sees more use



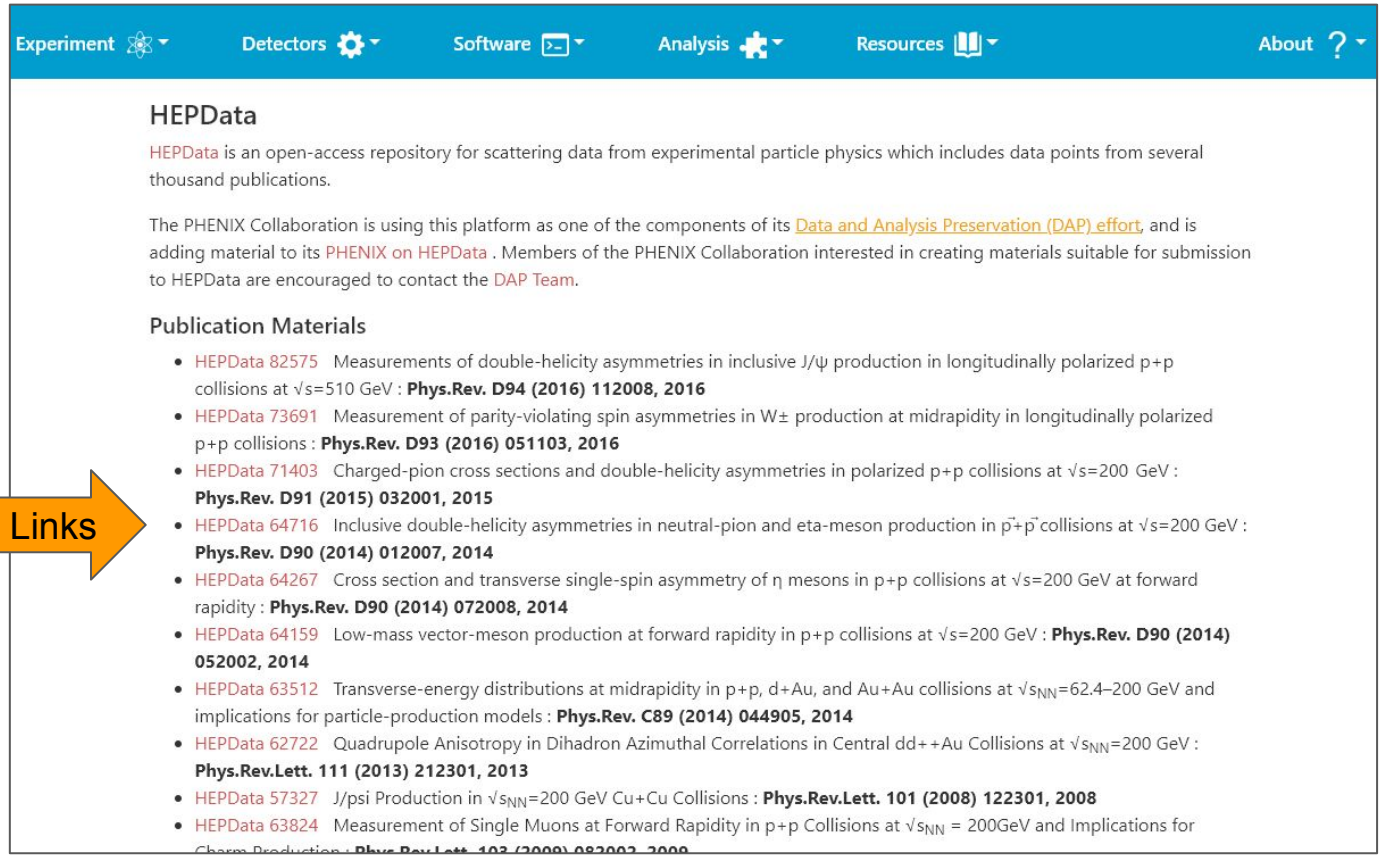
An example of new HEPData content on GitHub



HEPData

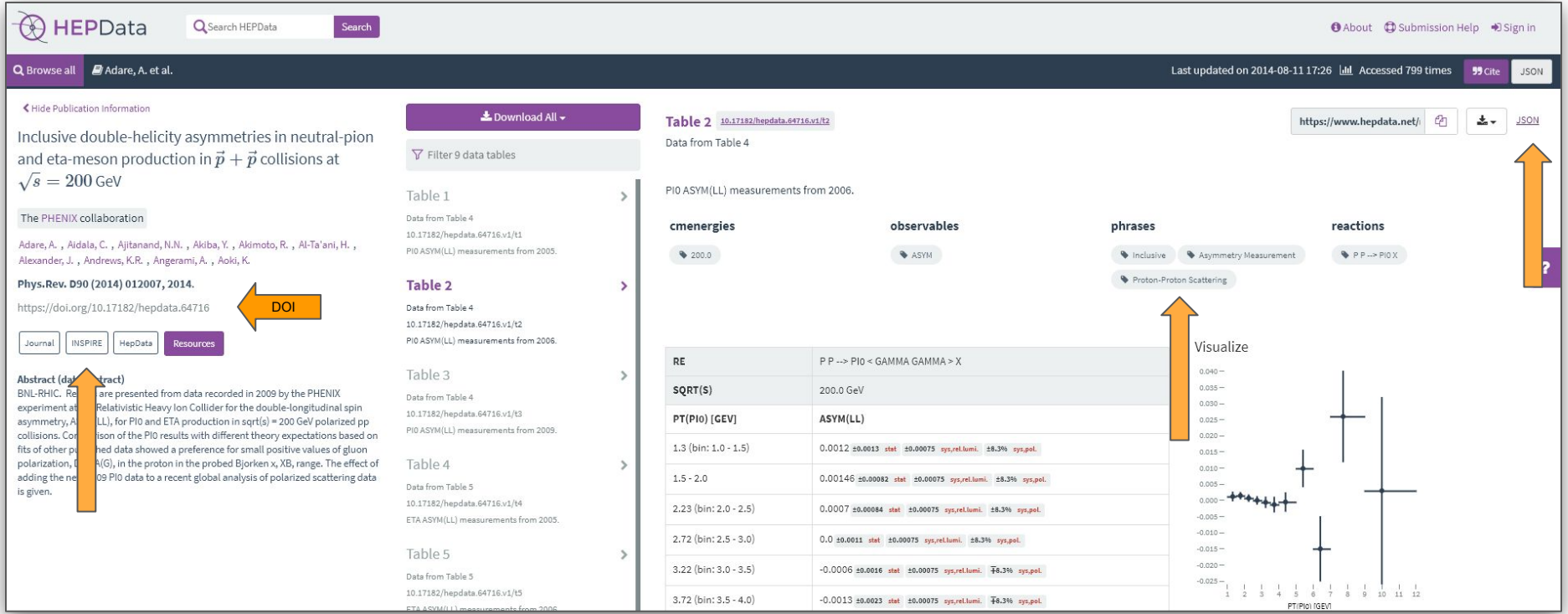

About
Submission Help
HEPData
Repository for publication-related High-Energy Physics data
This new site replaces the old site at http://hepdata.cedar.ac.uk.
Search on 9046 publications and 85608 data tables.
Search for a paper, author, experiment, reaction
Search
Advanced
e.g. reaction P P --> LQ LQ 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

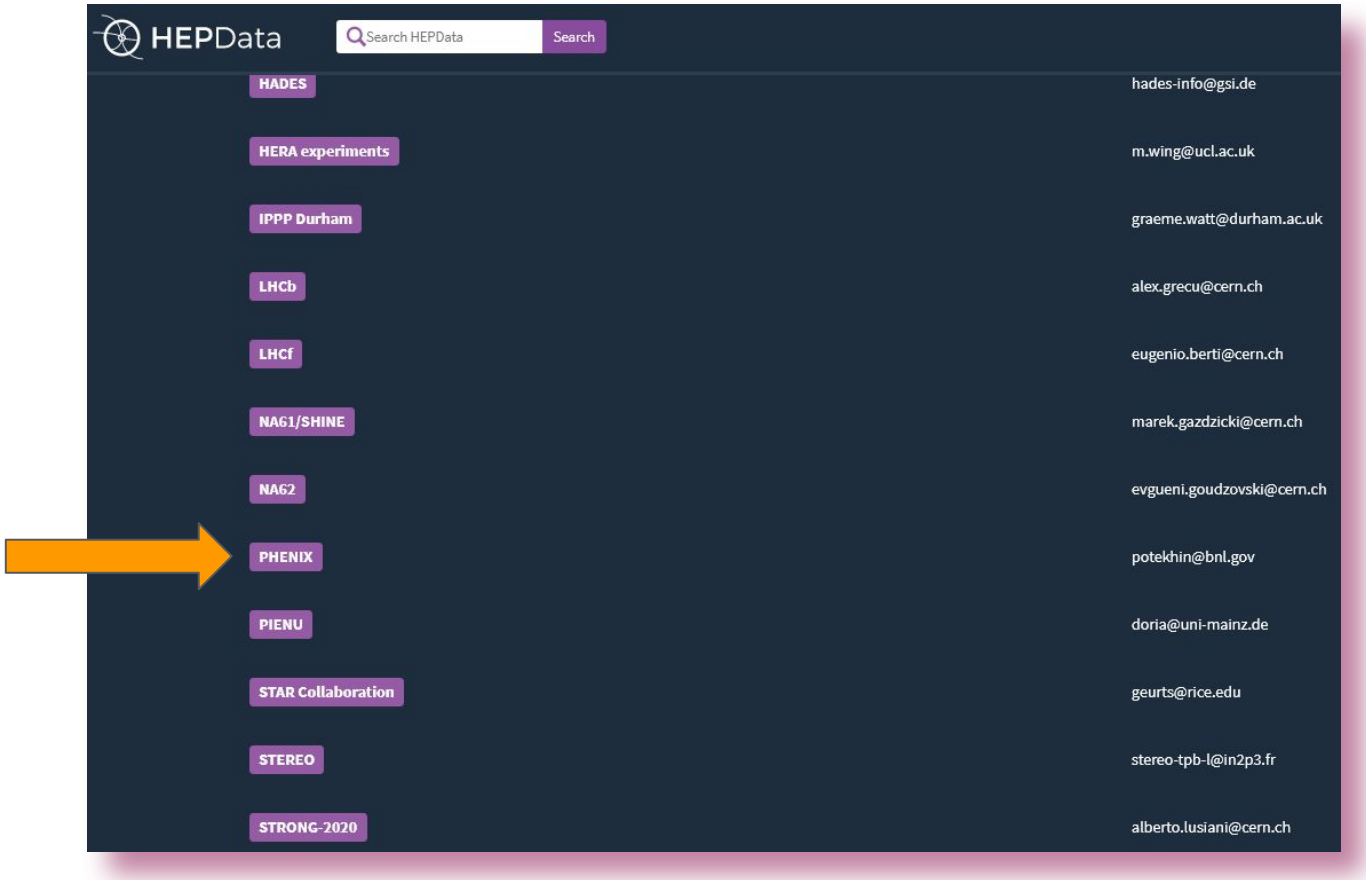


Working Links

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



PHENIX HEPData upload coordination



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