Imperial College London

LHCb and HEPData

W. Barter
Imperial College London

(with thanks to Alex Grecu, Ulrik Egede, and others)

HEPData Advisory Meeting

Status

- Currently 14% of LHCb papers on HEPData (68/~500)

- Papers may feature a delay of over a year before appearing
  - Upload to HEPData sometimes determined by external request rather than being performed automatically
  - Upload to HEPData also determined by use of measurements to tune LHCb simulation.
  - In cases where records not made by analysts who performed the measurement, scarce personpower for the task in LHCb then forces prioritization of which records to create.

LHCb Data Records

- Papers focusing on production physics reasonably well represented
  - Cross-section measurements for hadrons or EW bosons
  - Measurements useful for MC tuning

- Other measurements also represented:
  - e.g. Pentaquark observation

- Some measurements typically not considered for HEPData records:
  - Single number measurements (eg CP-asymmetries, BF measurements)
  - Authors tend to look towards PDG here. *(Other measurements also look more towards HFLAV, depending on the quantity measured.)*
  - Some measurements featuring many quantities – eg Dalitz analyses – not typically uploaded.

LHCb Practice

- LHCb operates with one coordinator (Alex Grecu)
- Records created by both analysts while an analysis is in progress:
  - Kindly encouraged by experiment's management (physics coordination and Editorial Board) and collaboration policy is to produce HEPData records for appropriate results during internal LHCb publication procedure.
  - the *de facto* decision on whether it is appropriate to produce HEPData records is often made by individual analysts. Some communities within LHCb clearly value the production of HEPData records and their creation is strongly encouraged.
- Records also created after an analysis is 'complete', often by those working on RIVET routines to utilise the measurements, or after specific external requests:
  - LHCb operates with limited personpower in this area – hard to fill uploader and reviewer roles once an analysis is 'complete'.

LHCb Feedback

- We have begun using the option for preliminary records with restricted access.
  - This has already been used within LHCb to ensure that HEPData entries can be created while an analysis is under internal review (and the analyst's energies are focussed on the paper).
  - Should be an important path to enable "more simultaneous" upload to HEPData and journal submission.

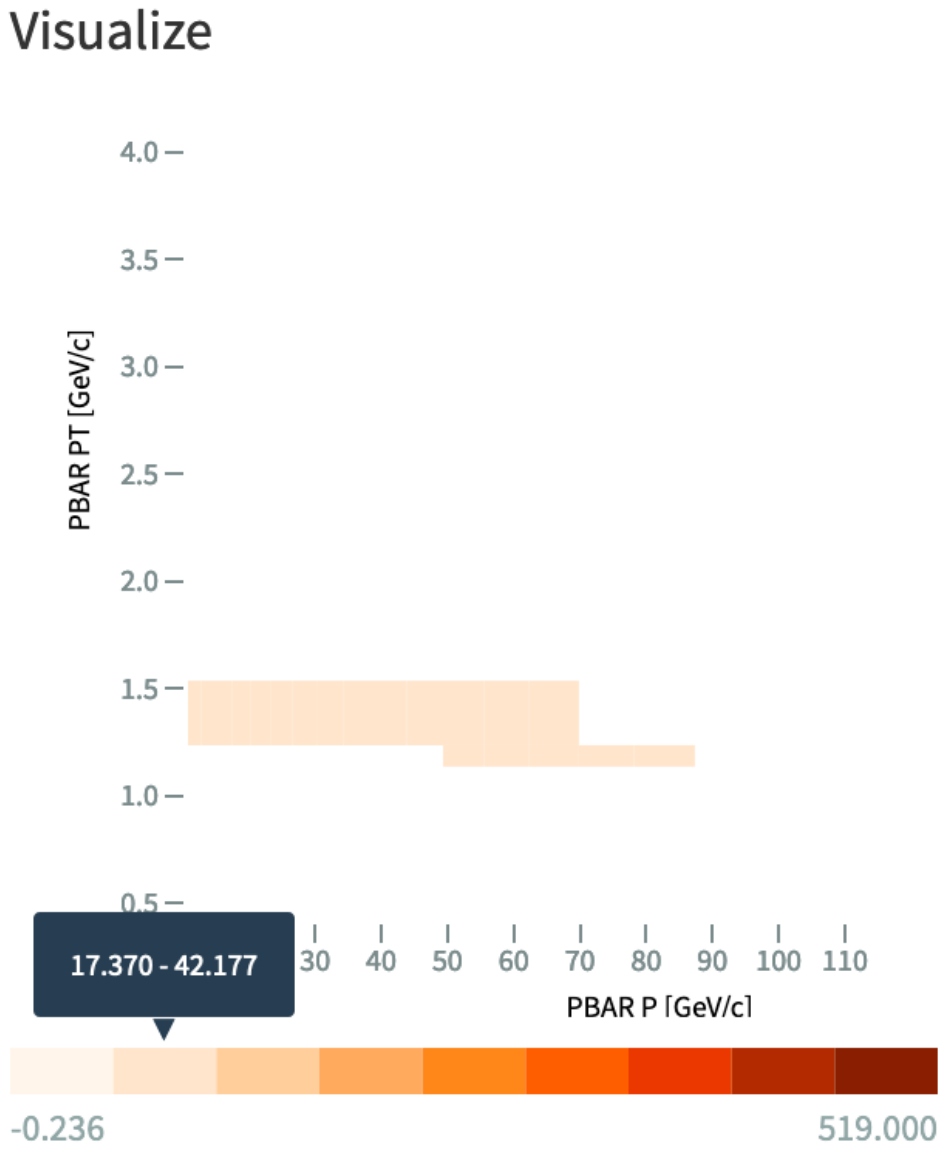
- If possible, would welcome automatic retrieval of information from INSPIRE to note when the status of a paper changes (addendum, erratum) and requires confirmation from coordinator that results in HEPData have not changed.
  - LHCb coordinator (Alex) has already raised this as an option.

https://www.hepdata.net/record/84584

LHCb Feedback

- Multi-dimensional tables still a challenge to represent.
  - An option to not display such tables graphically might be useful where the graphics displayed are not useful/confusing?
  - Could improve by letting user choose which columns in a multi-dimensional table to plot?

- How to best express correlations between different records and papers remains unsure.



LHCb Feedback

- HEPData is working extremely well.
  - Most LHCb issues with HEPData use are internal to the collaboration.

- We thank and congratulate the HEPData team for the development and maintenance of the portal as it is now and encourage any attempt to secure the resources for further development