

LHCb and HepData

Silvia Amerio¹, Gloria Corti², Ulrik Egede³, Alexandru T. Grecu⁴

¹Universita e INFN, Padova, Italy

²CERN, Geneva, Switzerland

³Imperial College, London, United Kingdom

⁴Horia Hulubei National Institute for Physics and Nuclear Engineering (IFIN-HH), Bucharest, Romania

Outline

- ◆ Suggestions and Feature Requests
- ◆ Current HepData Repository Usage @ LHCb
- ◆ HepData and “Data Preservation” – LHCb Point-of-View

Suggestions and Feature Requests

- › Exported data – weak to no links to origin of data. Proposing *comment* fields for various exported formats that should contain DOI of record or paper.
- › Extend type of (multi-dimensional) distributions that can be stored, e.g. correlation tables, Dalitz plots, etc. (do we need to visualize correlation coefficients ? – see [10.17182/hepdata.71549.v1/t12](https://doi.org/10.17182/hepdata.71549.v1/t12)).
- › Better discrimination between correlated and uncorrelated errors reported on measurements. Feature to define a global (*lumi*) error for tables that is conservatively added to total error when exporting data sets.
- › Better converters from various standardized input formats, e.g. .C ROOT script converter and other converters from old HepData portal would be welcome if adapted. PDF/LaTeX basic converters for published tables could be helpful.
- › Ability to download individual tables in various formats from direct URL could be useful in automating usage within fitting programs.
- › Consistent file format for data set download e.g. now YAML downloads as .zip, YODA as .tar.gz.

Current HepData Repository Usage @ LHCb

- HepData mainly used as a tool to put measurements at theorists disposal – main drive in releasing new data sets. If interested please, contact us (use HepData forum?!) and request !
- Repository usage also linked to RIVET analysis module development for tuning of Monte Carlo generators to the forward region with LHC measurements.
- Support of record versioning and improvement of submission management interface – a great feature that would fasten measurement release process (e.g. when paper goes to arXiv). Can always transparently update if values slightly change before publication to journal.
- Mainly publishing differential cross-sections. Would also publish single numbers (branching fractions, cross-sections), though hopefully general opinion is that PDG is a better place for such data.

HepData and "Data Preservation" - LHCb Point-of-View

- › Human resources are scarce. Overlapping efforts is always to be avoided.
- › HepData seems a great tool for advertising and storing published measurements in machine accessible formats. What about integrating it with data preservation and open access portals: [opendata](#) and CERN Analysis Preservation ([@github](#)) - protocols for automatic data grabbing from these sources ?
- › Could be worth integrating effort with HFAG ([Heavy Flavour Averaging Group](#)) in such a way as to reduce manual data extraction from publications.
- › Guide lines/record templates for similar decays (e.g. $B \rightarrow K^* \mu^+ \mu^-$) would be welcome to standardise format for specific information sought by theorists (no more translators).

Thank you!

BACKUPS

LHCb and HepData

- Still in TOP 20. Only 37 datasets recorded to date. Mostly at theorists' direct requests.
- Release mainly driven by necessity to tune generators in the forward region. Clear (some time repeated) requests to release particular measurements would help creating better priority lists.