LHCb(?) Feedback for RIVET

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Outline

◆ Status of RIVET at LHCb

◆ Suggestions for future RIVETs & Conclusions

⚠ Not completely endorsing LHCb Management point-of-view...

Status of RIVET at LHCb

- LHCb adopted internally a procedure to ensure release of measurements into HEPData.net data base. Activity could be boosted by an updated list of "hot" measurements which need encoding/analysis module (AM) – end-of 2017 status in backups.

- LHCb Physics Management strongly supports the release of AMs for measurements which fall within RIVET goals (quite small number of such measurements); yet, the lack of human resources often blocks the implementation at early stages (one still needs to invest a sizeable amount of time to follow the procedure).

- LHCb Simulation framework (GAUSS) provides a dedicated interface to process HepMC output by integrated event generators using RIVET 2.5.2 (see backups for diagram of implementation)

- Regretfully, I (Alex) did not yet manage to properly publicize the use of RIVET in our community, mostly due to very limited number of measurements which required an analysis module

- As consequence the human resources are very limited and dedicated mostly to activities for the benefit of the experiment (e.g. alternative tuning of event generators)

Suggestions for future RIVETs & Conclusions

- Provide for each experiment a "most wanted" list of analysis modules for published measurements in order to ease setting priorities in analysis module development, i.e. enrich existing "wish list" on RIVET web page with some (manual) mechanism of keeping it up-to-date (or integrate as feature of HEPData.net?).

- Discovered that RIVET does not implement PV smearing which may affect measurements particularly sensible to PV position (i.e. influencing definition of measured prompt particles)

- LHCb is a bit behind (2.5.2 in production now!) in including latest RIVET (2.6.0) into the Simulation software (⚠ latest stack includes 2.6.0).

- Up to now there were no investigations of the detector parametrisation features introduced in versions 2.5.* – BSM physics anayses may not be fully aware of them

- Fully dedicated human resources are still missing at LHCb. Nevertheless, the LHCb community would welcome any theory student willing to implement and validate a "long awaited" AM.
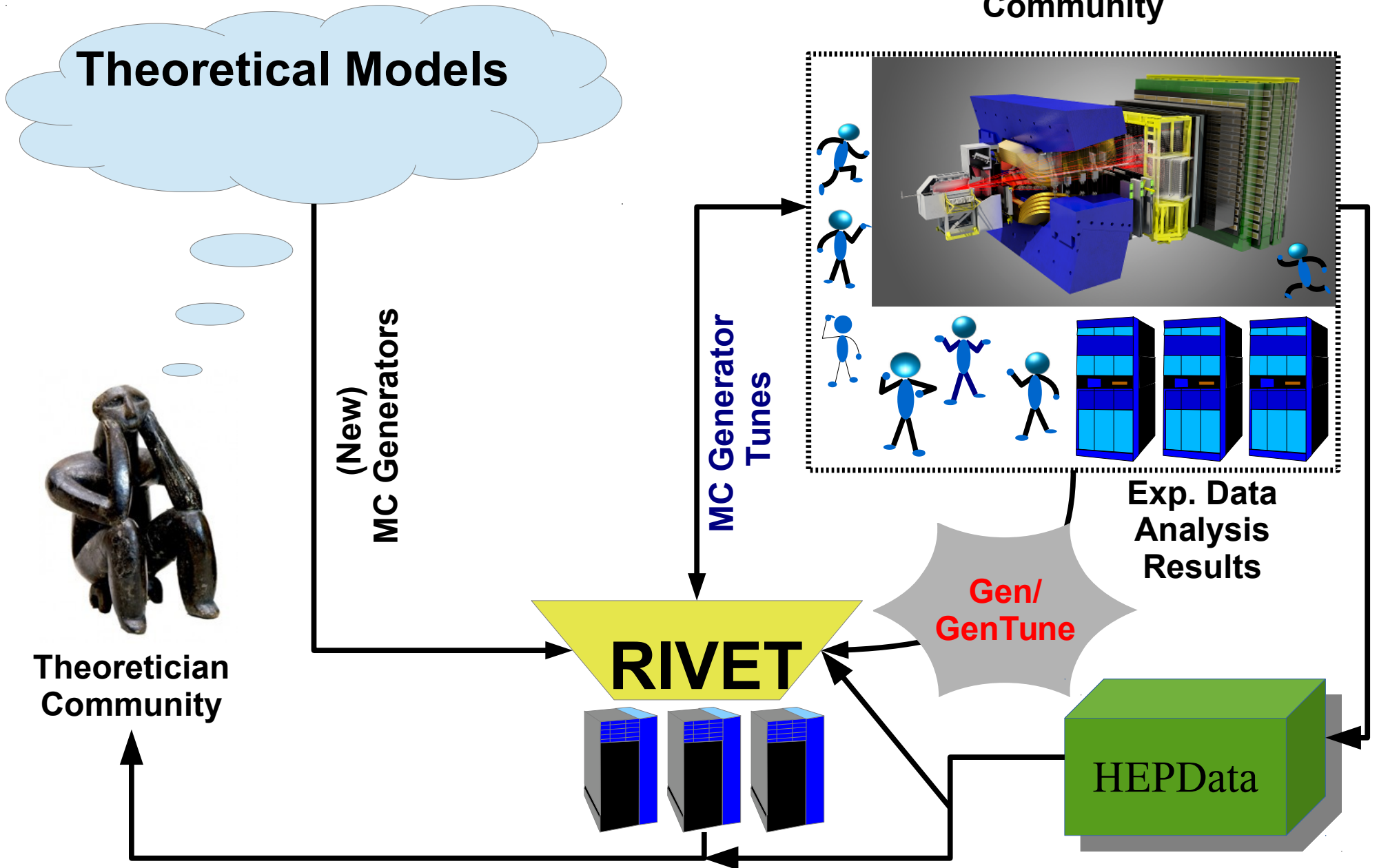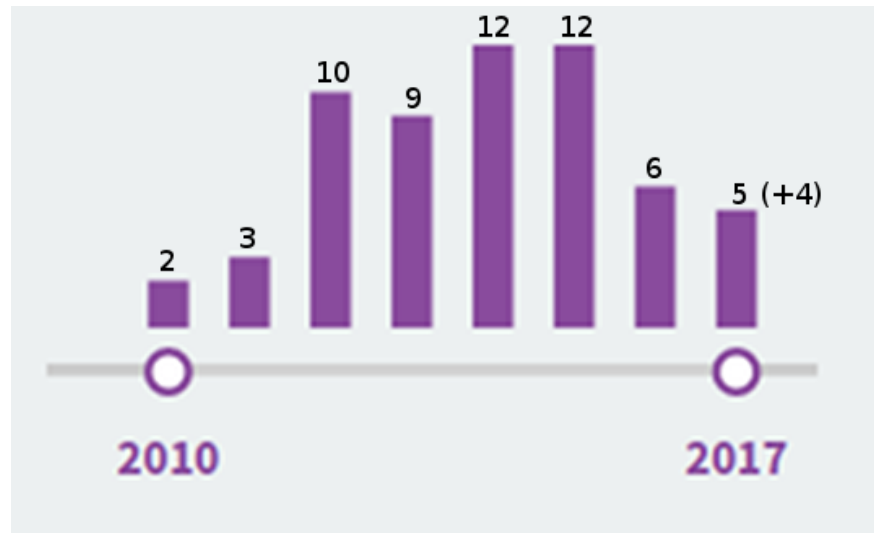
LHCb records HEPData.net at the end of 2017

HEPData Records for LHCb

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