Rivet monthly dev meeting

10 April 2024

Recent activity / TODOs

- **Rivet 4.0.1 development**
  - HepMC 3 master-branch compatibility — compression lib conflict
  - Peter R analyses, and highlighted histogram issues
  - Serialization missing digit
  - Particle-name pretty-print improvements from James Whitehead

- **YODA 2.0.1 development**
  - Profile included division by bin-volume factor
  - AV: Consider switching YODA from zstr to bxzstr?

  ⇒ Decision: release HepMC 3.3.0 now, Rivet and YODA patches for bugs soon/asap, apply HepMC3 clean-up and bxzstr conversion later when HepMC 3.3 established

- **Write-ups**
  - YODA2 referee report/requests from SciPost: generally positive, discuss and implement
  - Rivet4 release note written, circulated internally: iterate and → SciPost Codebases

What next? (copy forward)

- **I suggest we use it to do some physics for a while!**

- **But, main current ideas for development / applications:**
  - HI framework Scatters→Estimates (Leif, Christian B?)
  - Design, refine and explicitly implement primary-particle definitions ⇒ EIC
  - ALICE, EIC, FCC feature requirements?
    - e.g. impact-param and secondary-vertex
    - also useful for LHCb… and some LLPs?
    - HI jet subtraction mechanism
    - post-processing script system: auto-discovery and running of fits etc.?
  - Flavour-sensitive kT clustering in LeptonFinder (AB)
  - Experimental systematics machinery (AB)
  - Further plotting improvements (matplotlib now default!)

- **Other significant plans to put on the radar?** **Also MCnet/LPCC shortie-student projects**

Meetings, coordination, etc.

- **Upcoming and ongoing meetings**

  - Requests for CMS / ATLAS / ALICE / FCC / other Rivet & Contur tutorials…
    - ⇒ **Jon to ping Sihyun re CMS**
    - ⇒ **Andy to ping/enquire in ATLAS**
      - ⇒ cross-group interest, **asked to propose a date**

  - In-person events to meet around
    - **Pythia meeting, Oxford, 29 April - 3 May**
    - **Dark-QCD meeting cf. Deepak in Aviemore (22-25 Apr)**
    - **HSF (Hamburg) 13-17 May**
    - MCnet School at CERN in summer June 10-14
    - Aspen amplitudes/tools workshop, Aug-Sep
    - **IPPP MC tools workshop in summer, IPPP, 25-28 June (CG, AB, Marek)**
    - ⇒ **announce to MCnet, others**

- **MCnet COST network application in ~Oct.** Keeping this here so it happens this year!

AOB

- **Feedback & requests**

  - TODO: filtering to show only most-crucial analyses on coverage pages (if doing this, we should possibly also have an explicit "pre-triage" marker for unclassifieds)

  - TODO: request Mac CI runners (Intel *and* M1) on CERN Gitlab → through ATLAS? Asked: CERN IT have no plan and say Mac users should user containers for physics code. Seems naive / expt-code-centric. Do we have any influence through MCnet→TH?

    AV: A mirror to GitHub with scheduled builds (cheaper!) can do the job.

  - Request for ntupling, specifically EDM4HEP format. AB wrapper analysis base-class half-written; format of FCCAnalysis not 100% clear. Waiting on Sarah W for example. **AB asked re. direct MC→EDM4HEP for FCC-ee etc. — MCnet should be involved**

  - SciPost are looking for editorial fellows in hep-ph…

AOB

- **Feedback & requests**
  - TODO: figure out multiarch Docker builds via CI: GSoC project
    - https://gitlab.cern.ch/feickert/multiplatform-docker-build-example
      https://www.docker.com/blog/how-to-rapidly-build-multi-architecture-images-with-buildx/
    - GSoc MCnet projects taken to proposal stage for LHAPDF and Rivet+YODA
    - https://github.com/hoppet-code/hoppet/blob/master/.github/workflows/main.yml – Github
      Actions CI with multiarch.
      https://gitlab.cern.ch/DPHEP/cernlib/cernlib/-/blob/master/.gitlab-ci.yml – CERN GitLAb
      with multiarch
  - heprivet.org: still fixing the CI deployment blocks
    ⇒ Needs overhaul. CG suggested using the Docker images to generate doc contents.

BACKUP