Generators exercise - set-up

- Plan to take Andreas Albert's exercise from last DAS in Hamburg as a starting point [1]
- For simplicity, focus only on madgraph+pythia, inside CMSSW
- Probably produce plots using Rivet, though NanoGen is also an option
- Is it sufficient to cover cfgs, should we also cover fragments/cmsDriver?

[1] https://twiki.cern.ch/twiki/bin/viewauth/CMS/SWGuideCMSDataAnalysisSchoolHamburg2018GeneratorExercise

Generators exercise – other requirements

- The generic MC exercise isn’t strictly necessary, but would be nice to have as a prerequisite
- The plan is to just use Rivet for plotting, not give a full tutorial on how to make Rivet routines of analyses – should this be a separate exercise?
- No special computing requirements forseen

Generators exercise - content

- Start with pure Pythia process (e.g. ttbar)
  - Try turning things on and off (shower, hadronisation, UE)
  - Plot Z pt for different types of shower (pythia vs vincia)
- Then move to LO madgraph
  - Start with standalone madgraph, then make gridpacks
  - Explain syntax, try varying parameters (e.g. 4fs vs 5fs)
  - mlm matching
  - Use different example, e.g. stop production to explain UFOs
- aMC@NLO with FxFx merging
  - Need to test if a simple example (Z + 1 jets) can be run in a short time from a pre-made gridpack
  - Otherwise could provide LHE events