Software Tutorials

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MCnet

Tutorial schedule

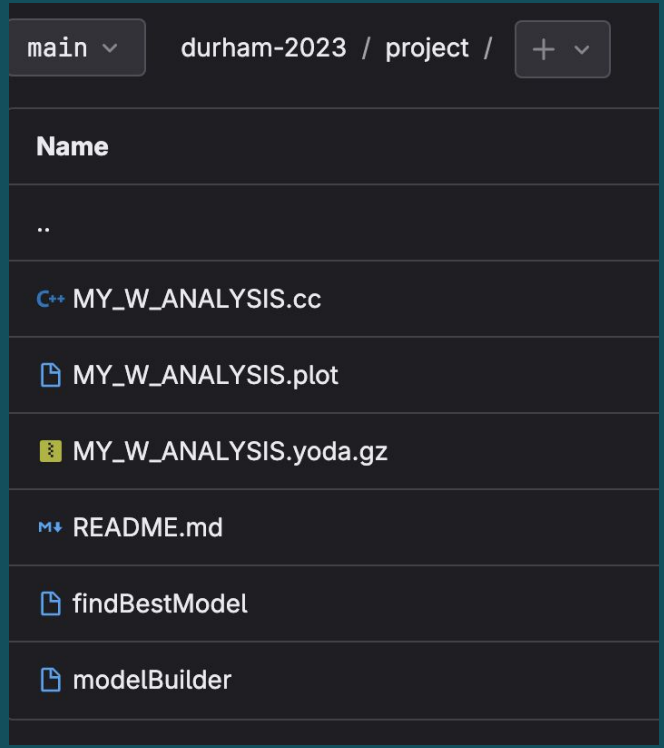
- Monday afternoon:
  - Getting set up with Docker
  - Getting started with the generators:
    Herwig (132), Pythia (OC218), Sherpa (OCW017)
  - Common project: W mass extraction

- Tuesday afternoon:
  - Discussion of common project
  - Madgraph + Rivet + Contur (Ph8)

- Wednesday afternoon:
  - Introduction to GPU programming

Common project

- Rivet routine
  - produces histograms of transverse mass, lepton pT and missing pT
- Plotting cosmetics
  - axis labels etc.
- (Fake) reference data
  - $W^{\pm} \rightarrow ev,\mu v$ 13 TeV
- Helper scripts to combine YODA files, multi-weights combine, or make simple chi2 comparisons (cf. README)



Rivet cheat sheet

- Compile the routine
  - `rivet-build RivetMY_W_ANALYSIS.so MY_W_ANALYSIS.cc`
  - `export RIVET_ANALYSIS_PATH=`pwd`` (to ensure it can be found)
- Run the routine over a HepMC file
  - `rivet -a MY_W_ANALYSIS file.hepmc`
- Plot the output file
  - `rivet-mkhtml --errs file.yoda`
- See also the `README` files for more information or check out the self-guided Rivet tutorial in the repo

Summary

- Collaborate (e.g. to scan the *W* mass range more efficiently)
  - Feel free to roam (coffee will be served around 4pm where we had lunch)
- Ask questions - the lecturers and tutors will be happy to discuss!
- Most importantly: have fun!

For tomorrow: as a team, prepare a couple of slides summarising what you've done and what you observed.