Project Lookup Document

Glossary of Terms

Definitions in order of appearance in notes book

4	α	fine structure constant
	G_μ	Fermi constant
		Drell-Yan Process
5		Parton
	PDF	Parton distribution function
6	η	pseudorapidity
	p_T^l	Charged lepton transverse momentum
	p_L	Longitudinal momentum
		Rest mass – energy equation
7	fb^{-1}	Inverse femtobarn
8		Quarkonium
		BACKGROUND PROCESSES
10	**A**	Curvature Matrix
	C	Covariance or Error Matrix
	σ_{AB}	Covariance
	ρ_{AB}	Correlation Matrix & Correlation coefficient

Command Line Prompts

Ctrl+z	Stops job (python process)
Ctrl+c	Cancels currently running program
Ctrl+d	Exits python fully, but cannot if there are stopped jobs
fg	Reloads stopped job
cat *filename*	Shows contents of file
python *filename*	Runs python code
python -i *filename*	Runs python code interactively
ls	Lists contents of current directory
cd *directory*	Enters directory
cd ..	Enters parent directory
module spider *Program*	Search tool for programs
emacs -nw *filename*	Opens emacs terminal, a python editor
(in emacs) ctrl+x, ctrl+c	Exit emacs terminal
Right click	Copy and Paste

Accessing Server & Files, Command Line set up

Use putty and filezilla.

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ALWAYS START WITH:

```
module use /warwick/epp/modules
module load linuxbrew
```

To load code from GitHub:

```
git clone https://github.com/r-preston/MPhysProject2021.git
```

To view data source:

```
ls/storage/epp2/phshgg/MPhysProject2021/
```

To run example.py

Load in code from GitHub if necessary

```
module use /warwick/epp/modules
module load linuxbrew
python example.py
```

Use filezilla to access produced pdf

To open Spyder (SCRPT Intro Video)

```
module spider Spyder
module spider spyder/4.0.1.Python.3.7.4
module load GCC/8.3.0 OpenMPI/3.1.4
module load spyder/4.0.1.Python.3.7.4
spyder3
```

ROOT

ROOT Commands

gDirectory->ls()	List files in directory
gDirectory->cd(“directory”)	Enter a directory
gDirectory->cd(“..”)	Enter top directory
DecayTree->GetEntries()	
DecayTree->Show()	Argument to choose specific branch entry
DecayTree->Draw(“mum_PT”)	Argument is name of branch
c.SaveAs(“filename.filetype”)	
.q	Exit root

Produce Plot directly from ROOT, example

1. `root -l /storage/epp2/phshgg/DVTuples__v23/5TeV_2017_32_Down_EW.root`
2. `gDirectory->ls()`
3. `dDirectory->cd(“Z”)`
4. `DecayTree->GetEntries()`
5. `DecayTree->Show()`
6. `TCanvas c`
7. `DecayTree->Draw(“mum_PT”)`
8. `c.SaveAs(“plot.pdf”)`
9. `Use filezilla to access plot.pdf`