

CMSSW WORK Documentation

Appendix:

A. Setting up a CMSSW Release

B. Preparing Data Ntuples

b.1 EDAnalyzer (Preparing my own)

EDAnalyzer beginner's tutorial

<https://twiki.cern.ch/twiki/bin/view/CMSPublic/WorkBookWriteFrameworkModule?>

LOCALSHELL=bash&LOCALWBRELEASE=7_4_15

b.2 Given Analyzers

b.2.1 MC RSG signal Analyzers

<https://github.com/cms-exotica-diphotons/diphoton-analysis/tree/master/ExoDiPhotonRSGSignalAnalyzer>

a.) Follow instructions in README.md

b.) try for a subset cmsRun <configurationfile>

- compile everything - scram b
- cmsRun *.py

c.) Analyse subset -> See documentation on events loop using myclass.C

b.2.2 Background Analysers

<https://github.com/cms-exotica-diphotons/diphoton-analysis/tree/master/ExoDiPhotonBackgroundAnalyzer>

b.) try for a subset cmsRun <config file>

cmsRun *.py

c.) analyse subset —> See documentation on events loop using myclass.C

b.3 Submission to CRAB

<https://twiki.cern.ch/twiki/bin/view/CMSPublic/WorkBookCRAB3Tutorial>

<https://twiki.cern.ch/twiki/bin/view/CMSPublic/SWGuideCrab2>

<https://twiki.cern.ch/twiki/bin/view/CMSPublic/WorkBookCRAB2Tutorial>

Some notes: better if the crab.cfg file and your pset are in the same directory. create jobs and then submit. (check recheck by crab -status)

a.) Set-up crab (we use CRAB 2)

b.) edit the configuration file - crab.cfg (see template in main folder)

c.) Edit 1.) datasetpath from DAS 2.) pset = python config file 3.) optional (.root)

d.) set up crab—> source /afs/cern.ch/cms/ccs/wm/scripts/Crab/crab.sh

which crab

==> to check crab version

e.) SUBMIT, RESUBMIT type PEM Passphrase: upr00tCRAB

crab -create -cfg <name_of_crab_cfg_file>

```
crab -submit
crab -status
crab -get
crab -status
crab -resubmit <job number> (if necessary)
```

d.) when jobs are finished you get several jobs by doing

```
crab -getoutput
```

=====> This will save your files to lxplus

=====> You can begin transferring your files to your hard drive

=====> go to the results directory and do a

```
ls -altrh *.root
```

=====> to check the file size before transferring files to your desktop

scp into your local computer and then put together all the ntuple files into one
.

=====> DO THIS

=====> hadd <name of compiled ntuple.root> *.root

C. Selection Criteria and Plotting

Looping over events by creating a Class with MakeClass

1.) TBrowser b to check name of tree

2.) fTree->Print() to check if it works

3.) fTree->MakeClass("myClass_name"). This will generate a macro template and a .h file that will loop over the events in your ntuples.

4.) Add selection criteria and you are ready to make plots from the data.

Github Repository for Analysis Macros

<https://github.com/uzzielperez/CMS-UPD-MS-Thesis>

DATASETS and WORKFLOW

1.) **RSG Signal:** /RSGravToGG_kMpl-001_M-1500_TuneCUEP8M1_13TeV-

pythia8/RunIIFall15MiniAODv2-PU25nsData2015v1_76X_mcRun2_asymptotic_v12-v1/MINIAODSIM

2.) **Background:** /GGJets_M-1000To2000_Pt-50_13TeV-sherpa/RunIIFall15MiniAODv2-

PU25nsData2015v1_76X_mcRun2_asymptotic_v12-v1/MINIAODSIM