Bfinder

It's a folder which phyton and c++/root stuff.
It takes AOD data from CMS and it start to do some cuts to reconstruct B meson candidates Ntuples.

AOD ——-> Bfiner —-> Ntuples

This version works with CMSSW_8_0_22 for 2016 data.

HOW DOES IT WORKS

1) prepare the environement (cmsenv and the other stuff)
for us in Lip in lisbon with fermi machine is:

#!/bin/bash

export SCRAM_ARCH=slc6_amd64_gcc530
export VO_CMS_SW_DIR=/cvmfs/cms.cern.ch
source $VO_CMS_SW_DIR/cmsset_default.sh
export CMS_PATH=$VO_CMS_SW_DIR
cd /exper-sw/cmst3/cmssw/users/gghillar/CMSSW_8_0_22/src/
#source /afs/cern.ch/cms/LCG/LCG-2/UI/cms_ui_env.csh
cmsenv

2) do the command "*scram b*" inside the Bfinder folder

3) check
Bfinder_pp_80x_cfg.py

this is the configuration file, where you can choose o run over MC or Data,
Put the gobal tag and the number of events!

4) cmsRun *Bfinder_pp_80x_cfg.py*

ATTENTION!

if you are outside lxplus and you don't use crab you should prepare the proxy for have the assess to the AOD data in the grid in this way:

Get a new user certificate for the grid

https://ca.cern.ch/ca/user/MyCertificates.aspx

Download it
Open the folder where you download it in a normal computer shell

scp myCert.p12 gghillar@fermi.ncg.ingrid.pt:~/

for copy in fermi home (look carefully to the name of "myCert")

Than follow this instruction (all the 3 commands)

https://ca.cern.ch/ca/Help/?kbid=024010

at the end of the instruction do

voms-proxy-init --voms cms

in you home directory in fermi.

If it say "successfully" you are ready!

BRIEF OF THE CODE

Bfinder

Class:Bfinder

404: Real Data or Simulated
444: reconstructing trans and muons
529: html
697: eta cut 2.5
879 RECONSTRUCTION: J/psi + Pi

DumpGenInfo

for get parameters from Montecarlo

CRAB

Since this program run on the AOD files, it is useful to figure out how Crabs works

do

source /cvmfs/cms.cern.ch/crab3/crab.sh

for configure the crab commands and environment

then write a configuration file like this one

https://github.com/giorgioghillardi/Bfinder/blob/master/crab3_bfinder_2016B_cfg.py

here you have to check the dataset, the folder, the name of the project and the global tag.
(You need the proper JSon file connected to your data set: find more info

https://twiki.cern.ch/twiki/bin/view/CMSPublic/SWGuideGoodLumiSectionsJSONFile)

Then use

crab submit crab3_bfinder_2016B_cfg.py

change the config file name! This is mine for my analysis

you can check your works with command

git status

or by browser

https://dashb-cms-job-task.cern.ch/dashboard/templates/task-analysis/#user=default&refresh=0&table=Mains&p=1&records=25&activemenu=2&pattern=&task=&from=&till=&timerange=lastWeek

If:
-all works are red probably there was a mistake in the config file: check the error on the T-wiki

https://twiki.cern.ch/twiki/bin/view/CMSPublic/JobExitCodes

-only few works are red you have to resubmit those
go to to the crab file project and do
crab resubmit --dir/-d <CRAB-project-directory>

All the documentation here

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