This page documents the details of the common xAOD ntuples for the VV exotic analysis at University of Edinburgh.

Instructions and developments

Instructions

- Please contact either Ben Wynne or Yanyan Gao for comments/questions
- Instructions: VVXAOD README
  - Default: AthAnalysisRelease
    - 20.7 `install_bash_AthAnalysisBase-2.4.11.sh`, supports tag since `VXAOD-00-00-44` and trunk
    - 20.1 `install_bash_AthAnalysisBase-2.3.34.sh`, supports tag up to `VXAOD-00-00-43`
  - Option of Derivation release, only use this if you need to remake the fat jets
    - Latest tag `VVXAOD-00-00-16`, matching `share/install_bash_Derivation.20.1.5.3.sh`
    - do not support trunk, make sure put the right tag in the installation script before executation
- See the ChangeLog for the details of changes.

On-going developments for release 20.7

Instructions on the PC recommendations link to release 20 recommendations

- electron and photon
  - ElectronRun2
  - Photon ID Run2
  - calibration
  - ~~Electron selections~~
  - ~~Electron calibrations~~
  - ~~Photon calibrations~~
    - Photon calibration does not work in the EXOT12 error message is missing auxdata x
  - Electron trigger efficiency
    - Off for the moment as the package does not compile for 2.4.9 (ElectronEfficiencyCorrection-00-01-52)
- muons
  - calibrations
  - selections
  - efficiency scale factors
- ~~MET~~ ~~Met20p7~~
- ~~small R jet calibrations~~
- large R jets JetMet2016
  - recommendations have not available yet
- jet cleaning
- overlap removal, implemented but not yet tested
- ~~b-tagging~~
  - btag recommendation
  - need to use MV2c10 instead of MV2c20 (change in the configuration file is needed)

Notes for developers

Please stick to these procedures for bookkeeping.

- Any change on the trunk must be tagged
- For a new tag make sure the following changes are applied
  - ♦ Document the changes in `ChangeLog`
  - ♦ Update version in `cmt/versions`
  - ♦ Update version at the top of the src/TestAlg.cxx
- Example for tagging command (note avn.py does not work for institute code for some reason)

```
svn cp svn+ssh://svn.cern.ch/reps/atlasinst/Institutes/Edinburgh/VVXAOD/trunk svn+ssh://svn.cern.
```

- Any new release must be paired with installation script, see example:

install_bash_AthAnalysisBase-2.3.21.sh

- Before checking out a specific tag check the version of the package in the release by `pkgco.py -s PACKAGE`. If the version in the release is higher than the recommended, do nothing.

Show details Not needed
Special instructions for Edinburgh PPE machines

Before doing any asetup commands on the PPE machines you have to asetup an old release first. I do not know why. Try something like this:

```
asetup 17.8.0,here asetup WhatYouActuallyWanted,here
```

More on running locally at PPE machines:

List of files on ECDF (this should be changed to the FAX method but those paths don't seem to work with athena at the moment while this does.)

```
dq2-ls -f -p -L UKI-SCOTGRID-ECDF_LOCALGROUPDISK mc14_13TeV.147914.Pythia8_AU2CT10_jetjet_JZ4W.re
```

Setup

```
setupATLAS
localSetupEmi
voms-proxy-init -voms atlas --valid 48:0
localSetupXRootD
cd VVAnalysis/
asetup 17.0.2,slc5,here
asetup 19.2.0,here
cd VVXAOD/share/
```

Execute over all the files in the list. For this changed runTrimmingfromxAOD.py to svcMgr.EventSelector.InputCollections = [os.getenv('FNAME)] (athena -c FNAME=$line also probably works)

```
while read line ; do export FNAME=$line ; athena runTrimmingfromxAOD.py >& /Disk/ecdf-nfs-ppe/atl
```

Output ntuple Contents

- Cross-sections
  - ♦ Check with AMI for the value and update the python script cross-sections code

- Follow the `share/addmcweight.py` to add the weights after the gridHarvest.sh
- branches are `evt_scale1fb, evt_kfactor, evt_filtereff, evt_nEvts` calculated by mcweight calculation code
- Physics objects follow instructions from the data15 Data 15 CP Recommendations
- Electrons (calibrated)
  - Impact parameters
  - Likelihood ID: el_id_medium, el_id_tight, el_id_tight
  - Isolation: el_iso_loosetrackonly, el_iso_loose, el_iso_tight
- Muons (Calibrated)
  - Selected muons
  - Likelihood ID: el_id_medium, el_id_tight, el_id_tight
  - Isolation: el_iso_loosetrackonly, el_iso_loose, el_iso_tight
- Ungroomed Large R jets both LCtopo and truth = AntiKt10LCTopo, CamKt12LCTopo =
- groomed Large R Jets both LCTopo and Truth
  - Jet substructure variables, check the wishlist from Run-1 CP group Run-1 W-tagging variable list

Show details Hide details
Implemented

```
Angularity
Dip12, Dip13, Dip23, DipExcl12
PlanarFlow
PullMag, PullPhi, Pull_C00, Pull_C01, Pull_C10, Pull_C11
SPLIT12, SPLIT23, SPLIT34
Tau1, Tau2, Tau3
TauWTA1, TauWTA2, TauWTA3
WIDTH
ZCUT12
ECF1, ECF2, ECF3

** You can calculate the c2 d2 from the ECF1->3
  oss << "Energy Correlator observable C2 ECF(3,beta)*ECF(1,beta)/ECF(2,beta)^2 for ";
  oss << "Energy Correlator observable D2 ECF(3,beta)*ECF(1,beta)^3/ECF(2,beta)^3 for ";
```

-- YanyanGao - 08 Aug 2014

This topic: Main > EdinburghVVXAOD
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