

RunningAthena < Main < TWiki

These are the steps to run the complete athena chain of gen,sim,rec using input A-lines (from Dominique!)

for 14.5.1 Checkout:

```
cmt show versions PhysicsAnalysis/AnalysisCommon/UserAnalysis
cmt co -r UserAnalysis-00-13-09 PhysicsAnalysis/AnalysisCommon/UserAnalysis
cd PhysicsAnalysis/AnalysisCommon/UserAnalysis/run
```

Event generation + simulation (approx 1min/ev + ~4mins init on heppc007)

```
get_files PDGTABLE.MeV
get_files jobOptions.G4Atlas_Sim.py
athena jobOptions.G4Atlas_Sim.py
```

Then change the jobOptions for output filename, events, geometry tag, single particle generator options etc:

```
athenaCommonFlags.PoolHitsOutput='g4hits.root'
athenaCommonFlags.EvtMax=3

#--- Simulation flags -----
from G4AtlasApps.SimFlags import SimFlags
# Look into SimFlags.SimLayout for other possible values
SimFlags.SimLayout='ATLAS-CSC-01-02-00' # specific value
#eram SimFlags.SimLayout.set_On() # uses the default value
...
#SimFlags.ParticleGeneratorOrders={'vertX:' : ' constant 0.0','vertY:' : ' constant 0.0',
# 'vertZ:' : ' constant 0.0','t:' : ' constant 0.0',
# 'eta:' : ' flat -3.0 3.0', 'phi:' : ' flat 0 6.28318',
# 'pt:' : ' constant 50000'}
```

Digitization: (approx 20s/ev +2mins init on heppc007)

```
get_files csc_digi_trf.py
csc_digi_trf.py --help -> provide information on how to run.
Here is an example:
csc_digi_trf.py -l INFO g4hits.root rdo.pool.root -l 0 ATLAS-CSC-01-02-00 73 37
```

Reconstruction: (approx 6s/ev +4mins init on heppc007 for ESD production then 2mins init + < 3s/ev for AOD prod)

To get aszt file out of DB: need to modify a file in MuonGeoModel to dump aszt.txt

```
cmt show versions MuonSpectrometer/MuonGeoModel
cmt co -r MuonGeoModel-00-06-10 MuonSpectrometer/MuonGeoModel
cd MuonSpectrometer/MuonGeoModel/src
```

Modify RDBReaderAtlas.cxx and uncomment following line:

```
// dhaszt->WriteAsztToAsciiFile("aszt.txt");
```

Then gmake:

```
cd ../cmt
gmake
```

Else you can simply do:

```
get_files csc_reco_trf.py
csc_reco_trf.py --help --> provide info on how to use
csc_reco_trf.py -l INFO rdo.pool.root esd.pool.root aod.pool.root ntuple.pool.root -l 0 ATLAS-CSC
```

Now, you have modified the above aszt file, and you want to use it in the reco. **YOU MUST DISABLE MUON BOY.** More about this below ! To load in your own aszt file, check out

```
cmt show versions MuonSpectrometer/MuonReconstruction/MuonRecExample
cmt co -r MuonRecExample-01-02-02-01 MuonSpectrometer/MuonReconstruction/MuonRecExample
```

Then modify `share/MuonRec_jobOptions.py` as follows:

```
#-----
# Apply alignment corrections to geometry
#-----
if muonRecFlags.useAlignmentCorrections():
    from MuonRecExample import MuonAlignConfig

# These lines to add:
from MuonAlignGenTools.MuonAlignGenToolsConf import Muon__MuonGeometryManagerTool, Muon__MuonAlign
muonGeometryManagerTool = Muon__MuonGeometryManagerTool(OutputLevel = DEBUG)

muonDBTool = Muon__MuonAlignDBTool(OutputLevel = DEBUG)
muonDBTool.AlternateASZTFile = "aszt_input.py"
muonDBTool.ASZTOutputFile = "aszt.txt"

ToolSvc += muonGeometryManagerTool
from AtlasGeoModel.MuonGM import GeoModelSvc
MuonDetectorTool = GeoModelSvc.DetectorTools[ "MuonDetectorTool" ]
MuonDetectorTool.AlternateASZTFile = "aszt_input.py"
```

TO DISABLE MUONBOY: Go in `MuonSpectrometer/MuonReconstruction/MuonRecExample/python`

Modify `MuonRecFlags.py` and set all instances of `doMuonBoy` to `False`.

These are the 2 lines to modify:

```
muonRecFlags.doMuonboy = False
...
self.doMuonboy = False
```

Dominique has already produce lots of MC... Look for what he has with panda monitor: panda.cern.ch

search for the user you want, e.g. Fortin (z shift is 2 mm here for all 3 phi sectors):

```
user09.DominiqueFortin_.singleMu.constPT.100GeV.3Sectors.RECO.zshift.pool.march.v1 to
user09.DominiqueFortin_.singleMu.constPT.100GeV.3Sectors.RECO.zshift.pool.march.v50
```

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