

12/1/2023 GELATO Weekly

Max Cohen



Event Trigger Decisions

```
c.algorithm("BasicEventSelection", {
  "m_truthLevelOnly": False,
  "m_applyGRLCut": True,
  "m_GRLxml": "/eos/home-m/mmcohen/temp/xaodanahelpersminimalexample/data/GRLs/data22_13p6TeV.periodAllYear_DetStatus-v109-pro28-04_MERGED_PHYS_Standards",
  "m_doPUreweighting": False,
  "m_vertexContainerName": "PrimaryVertices",
  "m_PVNTrack": 2,
  "m_triggerSelection": "HLT_j420_pf_ftf_presel225_L1J100|HLT_3j200_pf_ftf_L1J100|HLT_2j250c_j120c_pf_ftf_presel2j180XXj80_L1J100|HLT_j460_a10sd_cssk",
  "m_storeTrigDecisions": True,
  "m_storePassL1": True,
  "m_storePassHLT": True,
  "m_name": "myBaseEventSel"})
```

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```
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  "m_truthLevelOnly": False,
  "m_applyGRLCut": True,
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  "m_storeTrigDecisions": True,
  "m_storePassL1": True,
  "m_storePassHLT": True,
  "m_name": "myBaseEventSel"})
```

```
19  ▾ c.algorithm("TreeAlgo", {
20      "m_name": "Jets_Tree_AOD",
21      "m_jetContainerName": "HLT_AntiKt4EMPFlowJets_subresjesgscIS_ftf",
22      "m_jetBranchName": "HLT_jet",
23      "m_jetDetailStr": "kinematic",
24      "m_trigDetailStr": "basic passTriggers"
25  })
26
```

Multiple Electron/Muon Containers

```
19  c.algorithm("TreeAlgo", {
20      "m_debug": True,
21      "m_name": "HLT_Tree",
22      "m_jetContainerName": "HLT_AntiKt4EMPFlowJets_subresjesgscIS_ftf",
23      "m_jetBranchName": "HLT_jet",
24      "m_jetDetailStr": "kinematic",
25      "m_photonContainerName": "HLT_egamma_Photons",
26      "m_photonDetailStr": "kinematic",
27      "m_elContainerName": "HLT_egamma_Electrons HLT_egamma_Electrons_LRT",
28      "m_elBranchName": "HLT_el HLT_el_LRT",
29      "m_elDetailStr": "kinematic",
30      "m_muContainerName": "HLT_MuonsIso HLT_MuonsCB_LRT",
31      "m_muBranchName": "HLT_muon HLT_muon_LRT",
32      "m_muDetailStr": "kinematic",
33      "m_TrigMETContainerName": "HLT_MET_pfopufit",
34      "m_TrigMETDetailStr": "kinematic",
35      "m_trigDetailStr": "basic passTriggers"
36  })
```

LRT Containers

```
# Muons
muon_data = [np.asarray([pt for pt, mask in zip(event.HLT_muon_pt, muon_mask) if mask]),
              np.asarray([m for m, mask in zip(event.HLT_muon_m, muon_mask) if mask]),
              np.asarray([eta for eta, mask in zip(event.HLT_muon_eta, muon_mask) if mask]),
              np.asarray([phi for phi, mask in zip(event.HLT_muon_phi, muon_mask) if mask])]

muon_LRT_data = [np.asarray([pt for pt, mask in zip(event.HLT_muon_LRT_pt, muon_LRT_mask) if mask]),
                 np.asarray([m for m, mask in zip(event.HLT_muon_LRT_m, muon_LRT_mask) if mask]),
                 np.asarray([eta for eta, mask in zip(event.HLT_muon_LRT_eta, muon_LRT_mask) if mask]),
                 np.asarray([phi for phi, mask in zip(event.HLT_muon_LRT_phi, muon_LRT_mask) if mask])]

muon_data_combined = [np.concatenate([data_1, data_2]) for data_1, data_2 in zip(muon_data, muon_LRT_data)]
muon_list.append(sort_and_pad(muon_data_combined, max_objects=NUM_MUONS))
```

LRT Containers

524:

```
[[64.44489288 0.10565837 2.30946708 -0.65680104]
 [64.44489288 0.10565837 2.30946708 -0.65680104]
 [ 0.          0.          0.          0.          ]]
```

LRT Containers

524:

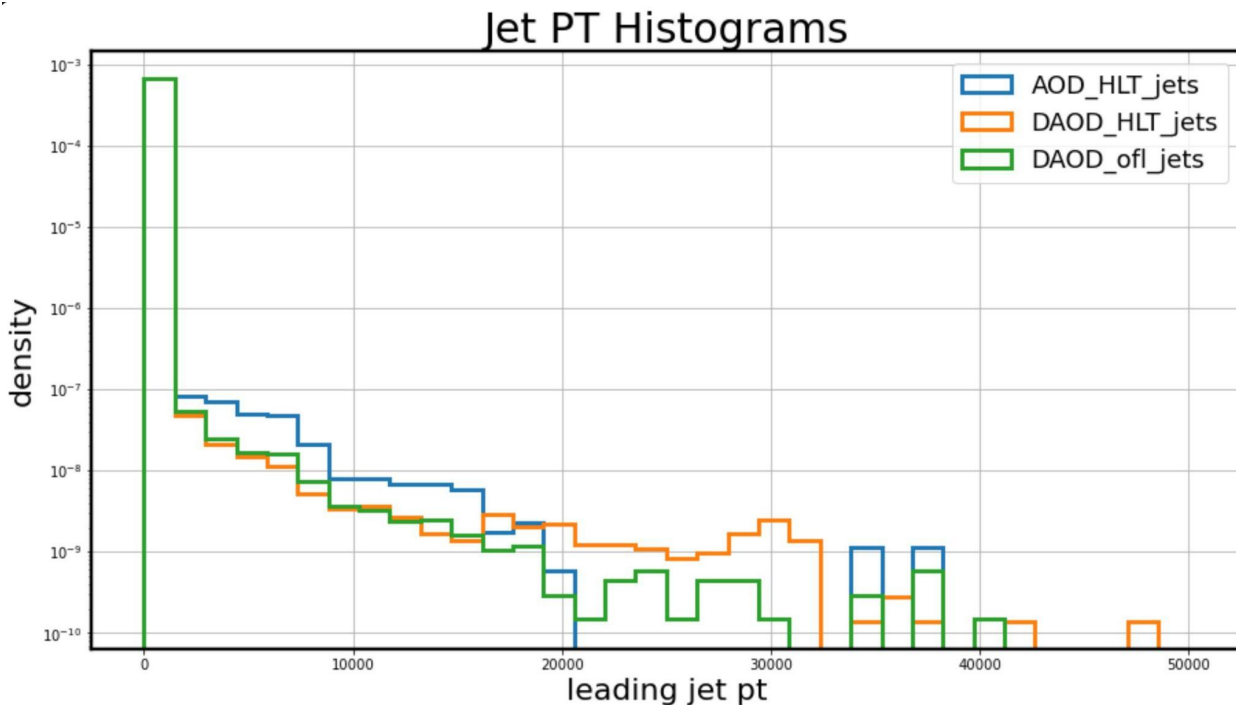
```
[[64.44489288  0.10565837  2.30946708 -0.65680104]
 [64.44489288  0.10565837  2.30946708 -0.65680104]
 [ 0.          0.          0.          0.          ]]
```

442:

```
[[61.23835373  0.10565837 -0.88760042  1.73510766]
 [59.96107864  0.10565837 -0.88558686  1.73204684]
 [22.3009758   0.10565837  0.50944716 -1.03199887]]
```

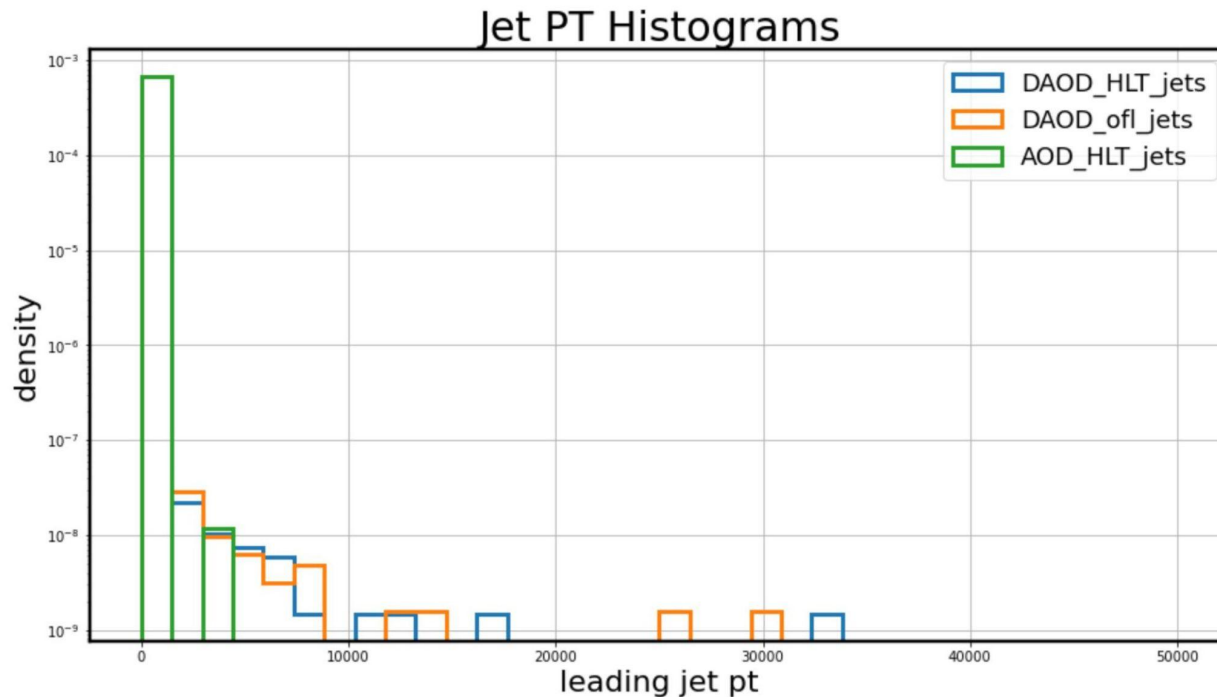
Good Run List (GRL)

No GRL



Good Run List (GRL)

With GRL



Zerobias and Minbias

```
|HLT_noalg_zb_L1ZB|HLT_noalg_L1A11",
```