

Readout Updates for 2019 MC

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A readout steering file from Kyle

```
<execute>
  <!-- SLiC Data Readout Drivers -->
  <driver name="EcalHitsOutputDriver"/>
  <driver name="MCParticleOutputDriver"/>
  <driver name="HodoscopeHitsOutputDriver"/>
  <driver name="TrackerHitsSVTOutputDriver"/>
  <driver name="TrackerHitsEcalOutputDriver"/>

  <!-- SVT Readout Drivers -->
  <!--<driver name="SVTReadoutDriver" />-->

  <!-- Hodoscope Readout Simulation Drivers -->
  <driver name="HodoscopePreprocessingDriver"/>
  <driver name="HodoscopeDigitizationDriver"/>
  <driver name="HodoscopeRawConverterDriver"/>

  <!-- Calorimeter Readout Simulation Drivers -->
  <driver name="EcalDigitizationDriver"/>
  <driver name="EcalRawConverterDriver"/>
  <driver name="GTPReadoutDriver"/>

  <!-- Trigger Simulation -->
  <driver name="StudiesTrigger"/>

  <!-- LCIO Output and Data Management Driver -->
  <driver name="ReadoutManagerDriver"/>

  <driver name="CleanupDriver" />
</execute>
```

- Readout works after removing SVT drivers and fixing a typo issue in the hodoscope database. Omar is working on updates for SVT drivers.
- We do not need to update drivers for SLIC output, digitization, raw hit converters and GTP clusterer, but some parameters need to be changed based on the 2019 DAQ configurations
- Drivers for trigger simulation need to be updated and developed. I am working on it.

Trigger Simulation

- Need a 2019 version for the class “TriggerModule” to handle trigger cuts based on 2019 DAQ configuration
- Trigger simulation:
 - ★ Develop drivers for various 2019 triggers; Start from singles and pairs
 - ★ For driver of singles trigger, hoodscope signals need to be handled for Ecal-hodo matching

Off Topic: Cosmic-Ray MC in SLIC

- Andrea requested to run cosmic events in SLIC. Here are event examples with lund format
 - 1000000000
10113000.00479519 -2.01352 -0.0113221 2.01724 0.105 -84.8068 319.509 52.4703
 - 1000000000
10113000.101526 -0.102706 -0.031865 0.181796 0.105 -289.953 157.39 54.0438
- A format converter from lund to stdhep has been developed. Will add it into hps-mc
- Segmentation fault when running SLIC. Norman suggests that it is because vertices of cosmic events are out of world volume.
 - ★ Do we have options to set world volume?
 - ★ Otherwise, we can try to propagate cosmic particles to inside of world volume according to information of vertex and momentum
 - ★ Andrea has run cosmic events in GEMC. So the task is not high priority.