Weekly Update

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Progress: ZDC Simulations

- Installed and set up EIC environment to generate simulation data for the ZDC
- Found where ZDC geometry is stored, how to compile it, how to modify it, and how to visually inspect current ZDC geometry
- Successfully generated data for muon, neutron, double photon and lambda events with registered hits in the ZDC
- Beginning work to find angular resolution of simulated data

Progress: ZDC Visualization

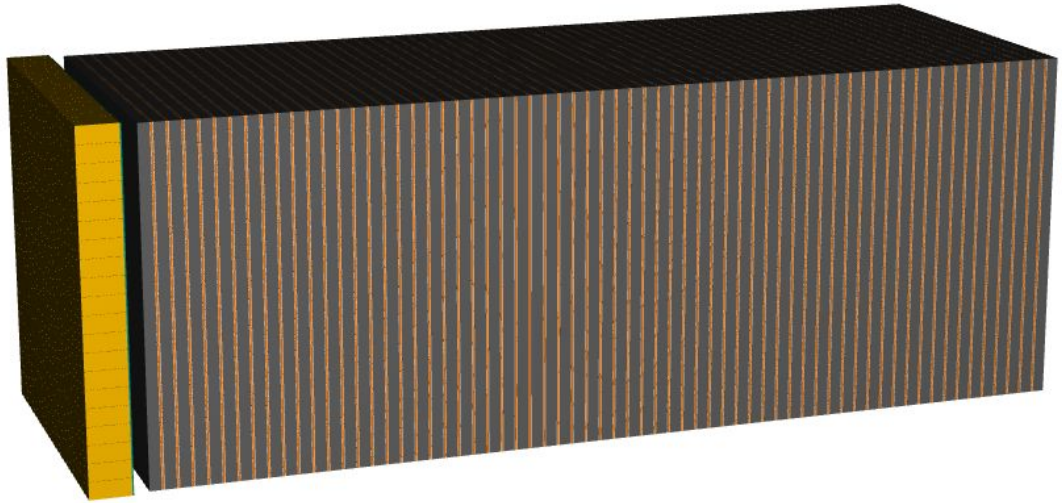

Fig. 1: Visualization of ZDC geometry

Progress: TPC Hardware Build

- Set up scintillator-PMT apparatus that we will use for a coincidence study. This same study will later be conducted for the TPC once built
  - Current apparatus consists of 3 scintillators connected to 4 PMT's, an oscilloscope, wave generator and DAQ
- Using the oscilloscope we have visually confirmed that each PMT is working and that each one has a different count rate due to differing scintillator geometry
- Currently collecting data to determine the optimum threshold for the discriminator (in the DAQ) for each PMT. Optimum value will be found using a plot of the threshold vs. count rate.

Progress: TPC Hardware Build

Fig. 2: Back view of Scintillator-PMT Apparatus

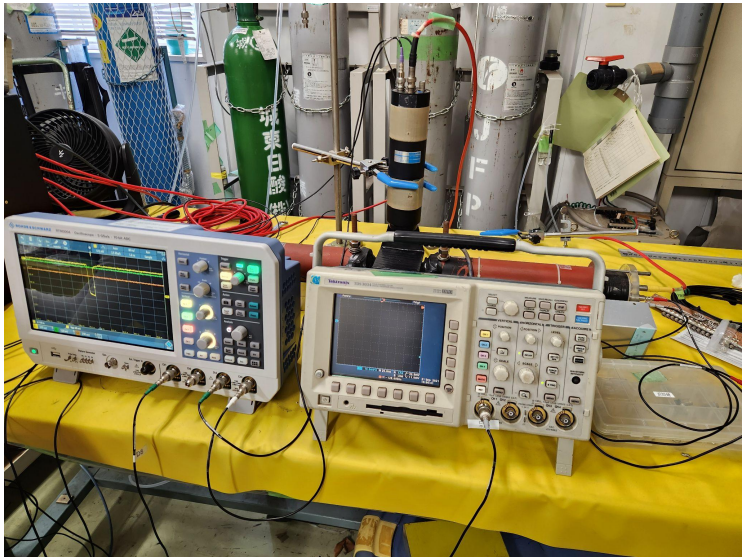

Fig. 3: Front view of Scintillator-PMT Apparatus

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Progress: TPC Hardware Build

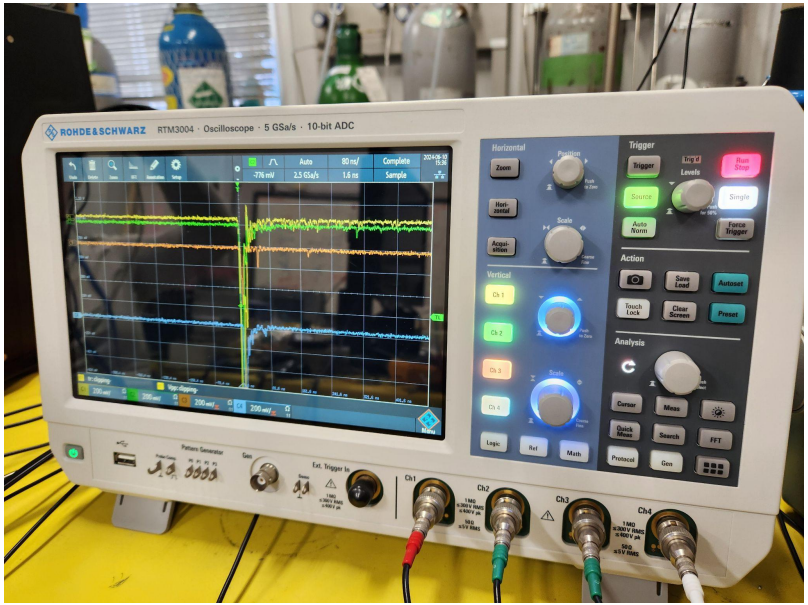

Fig. 4: Oscilloscope reading of possible muon

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Plan for coming week

ZDC Simulation:

- Continue to work on event display using GEANT4
- Continue working on determining angular resolution

TPC Hardware Build*:

- Continue working on coincidence study

*Prof. Taku will be out for most of this week, so hardware progress is expected to be a bit slower than last week.

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