



# Fall 2017 Commissioning Trigger PID Threshold Scans

Hall-C Commissioning Meeting

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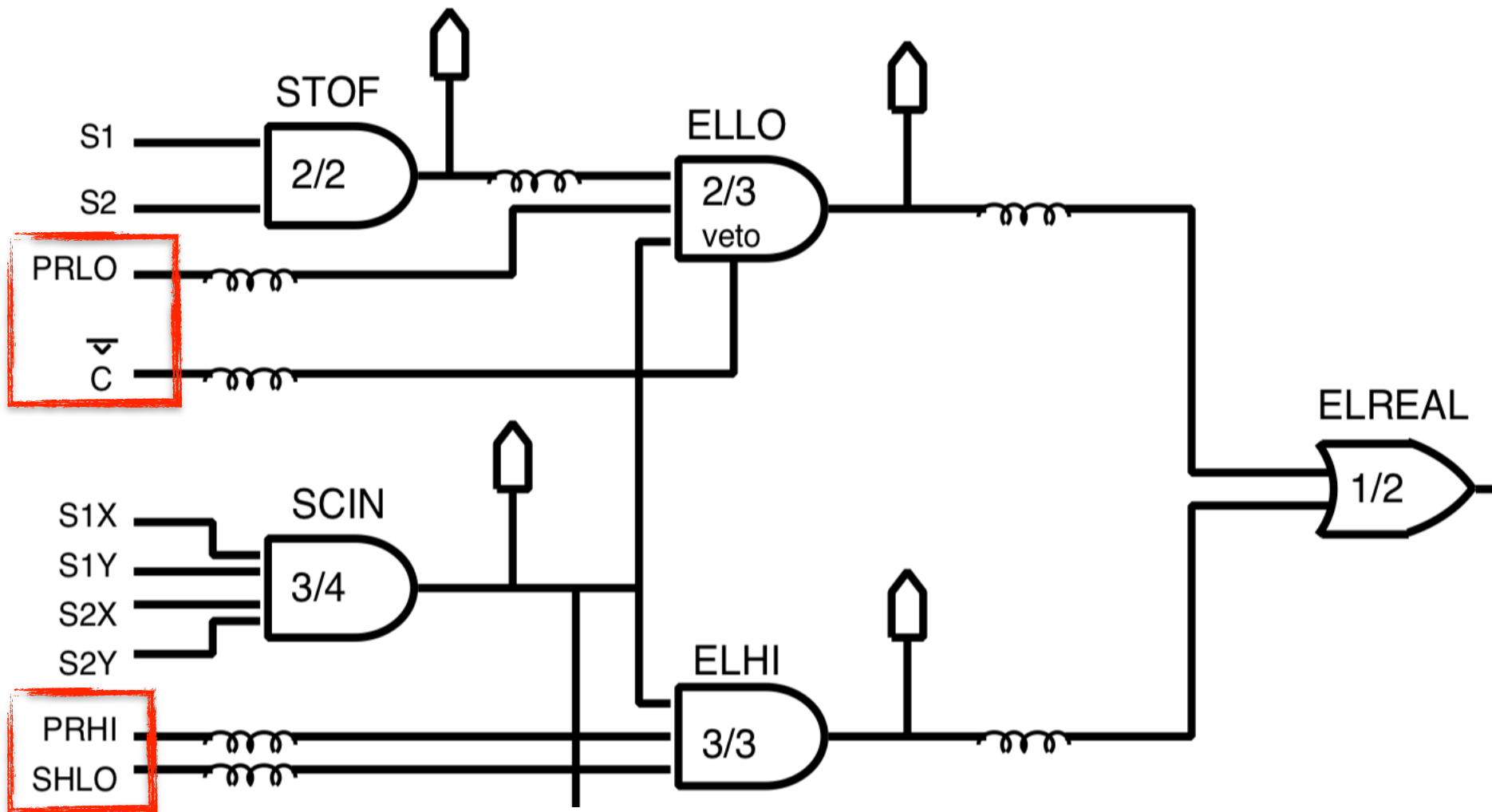
On behalf of the DAQ/Trigger working group



# Low-Level Trigger PID Threshold Scans

- Threshold scans were performed for the various low-level PID trigger legs
- HMS threshold scans
  - Runs 1255-1265
  - $P = -1.0$  GeV,  $\theta = -14^\circ$ , 0.5% C
- SHMS threshold scans
  - Runs 1678-1684
  - $P = -1.785$  GeV,  $\theta = 7.45^\circ$ , 0.5% C

# Low-Level Trigger PID Threshold Scans

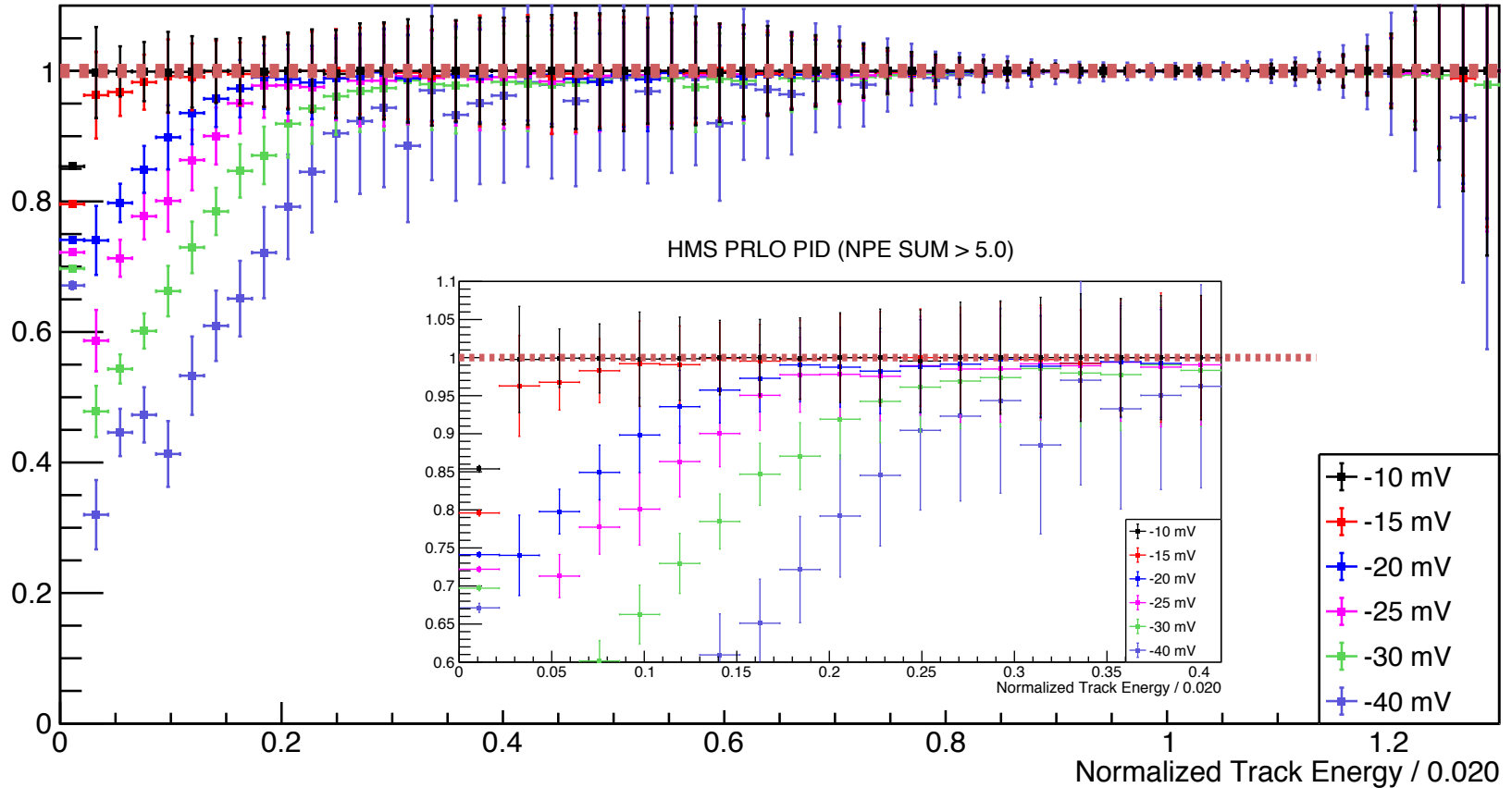


# HMS PID Discriminator Thresholds

HMS Run #	HGCER	PRLO	PRHI	SHLO
1255	40	40	60	40
1256	30	30	50	30
1257	25	25	40	25
1258	20	20	30	20
1259	15	15	20	15
1260	10	10	10	10

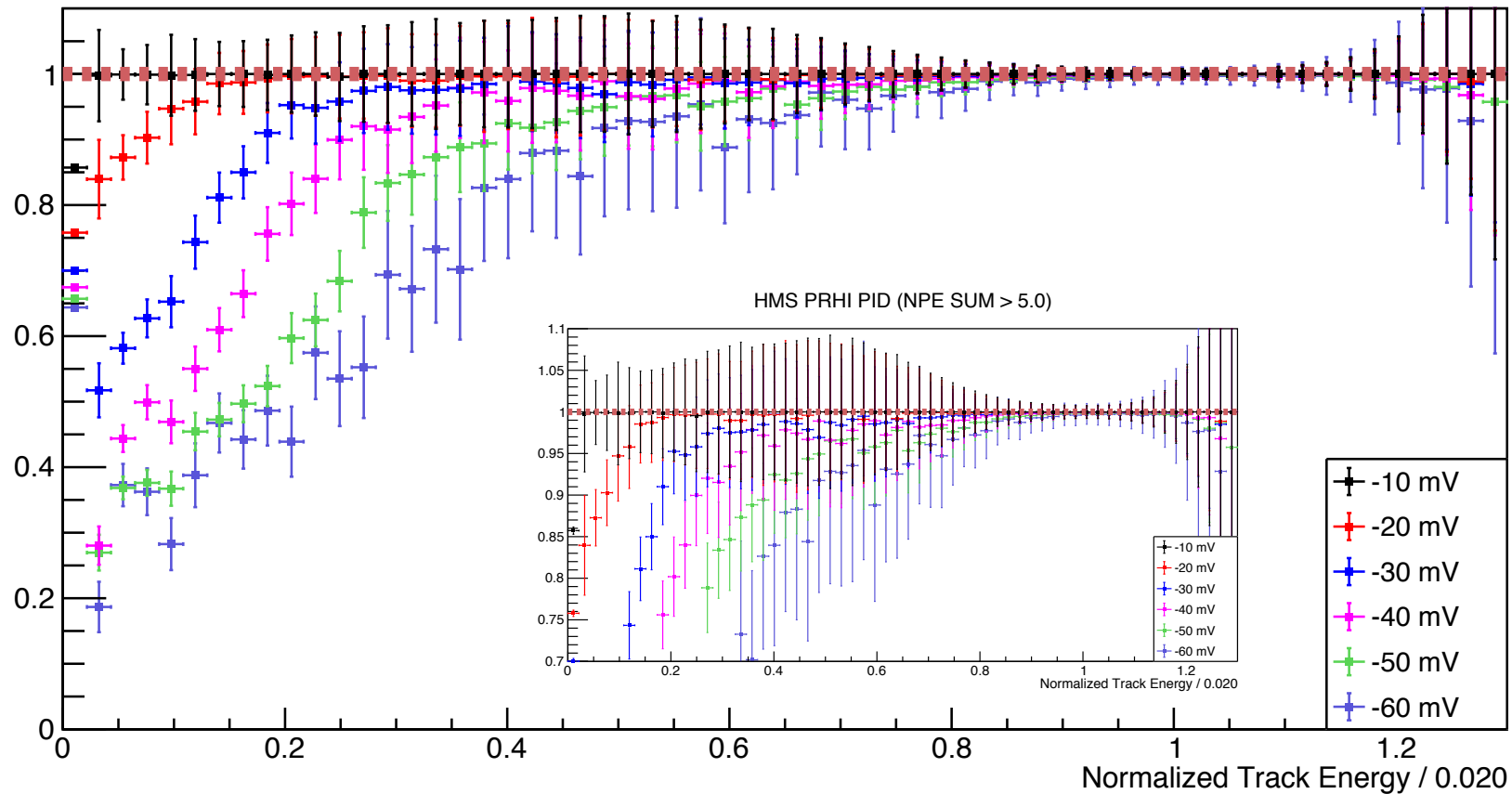
# HMS PID Electrons

HMS PRLO PID (NPE SUM > 5.0)



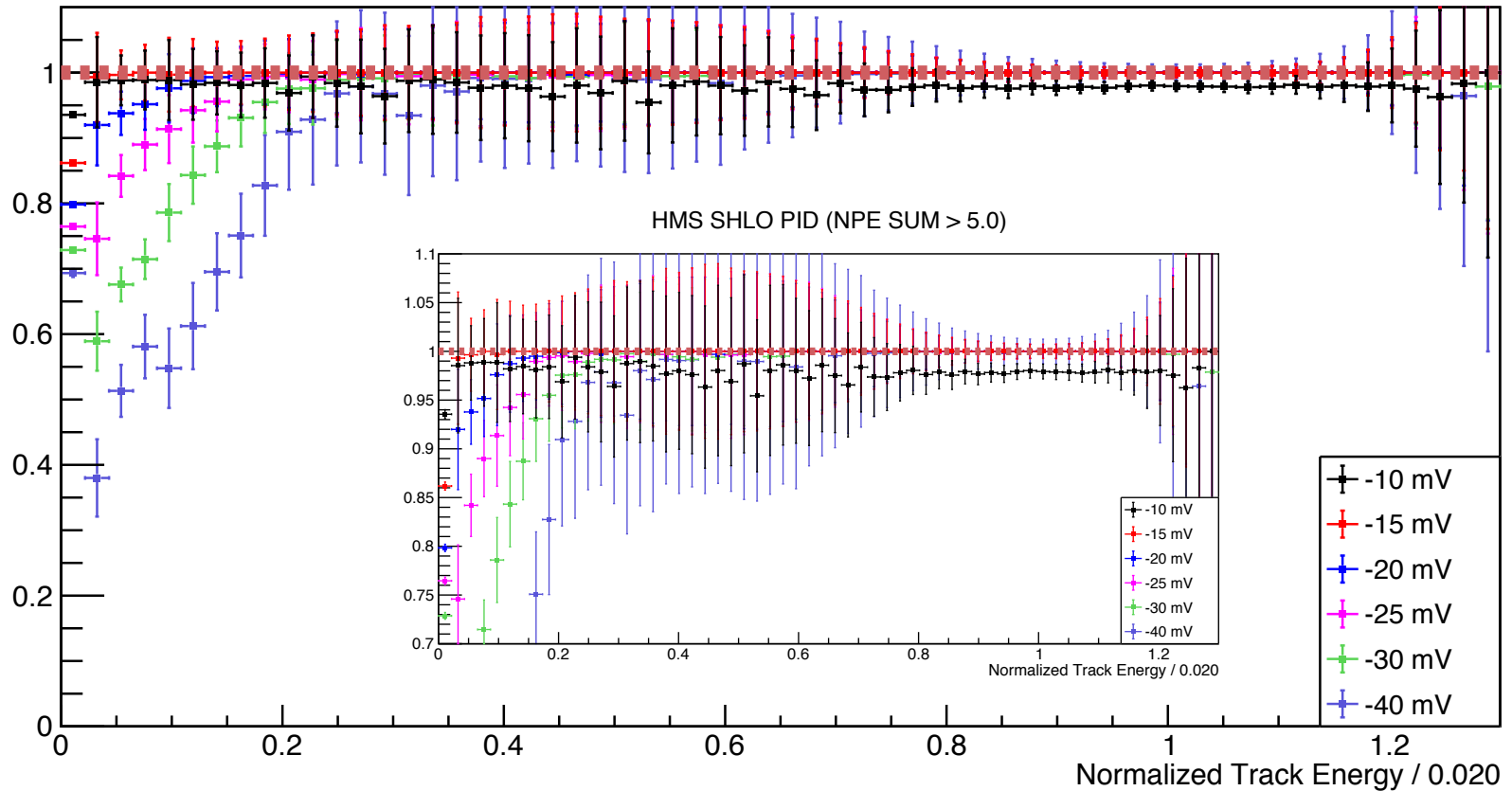
# HMS PID Electrons

HMS PRHI PID (NPE SUM > 5.0)



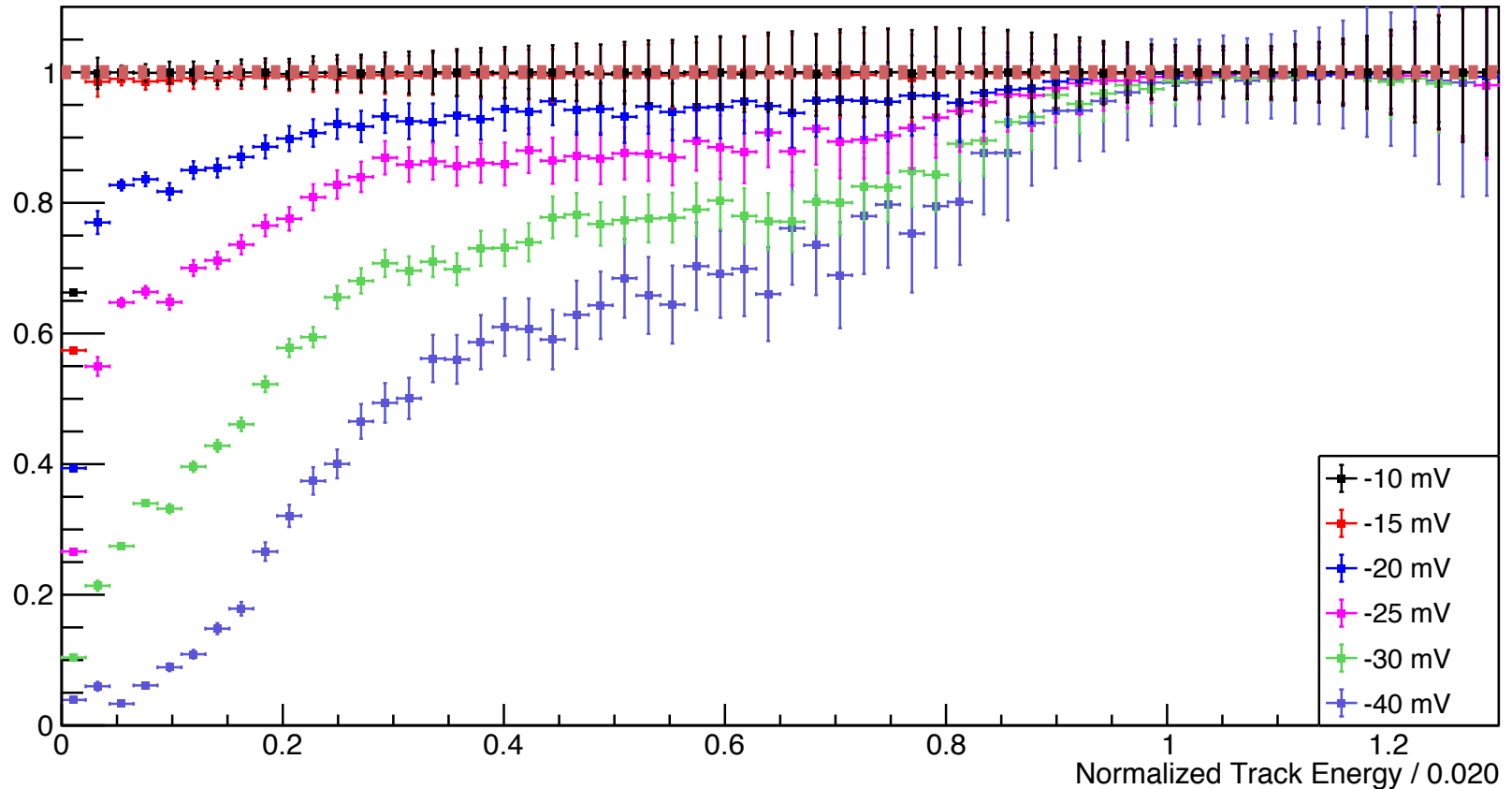
# HMS PID Electrons

HMS SHLO PID (NPE SUM > 5.0)



# HMS PID Pions

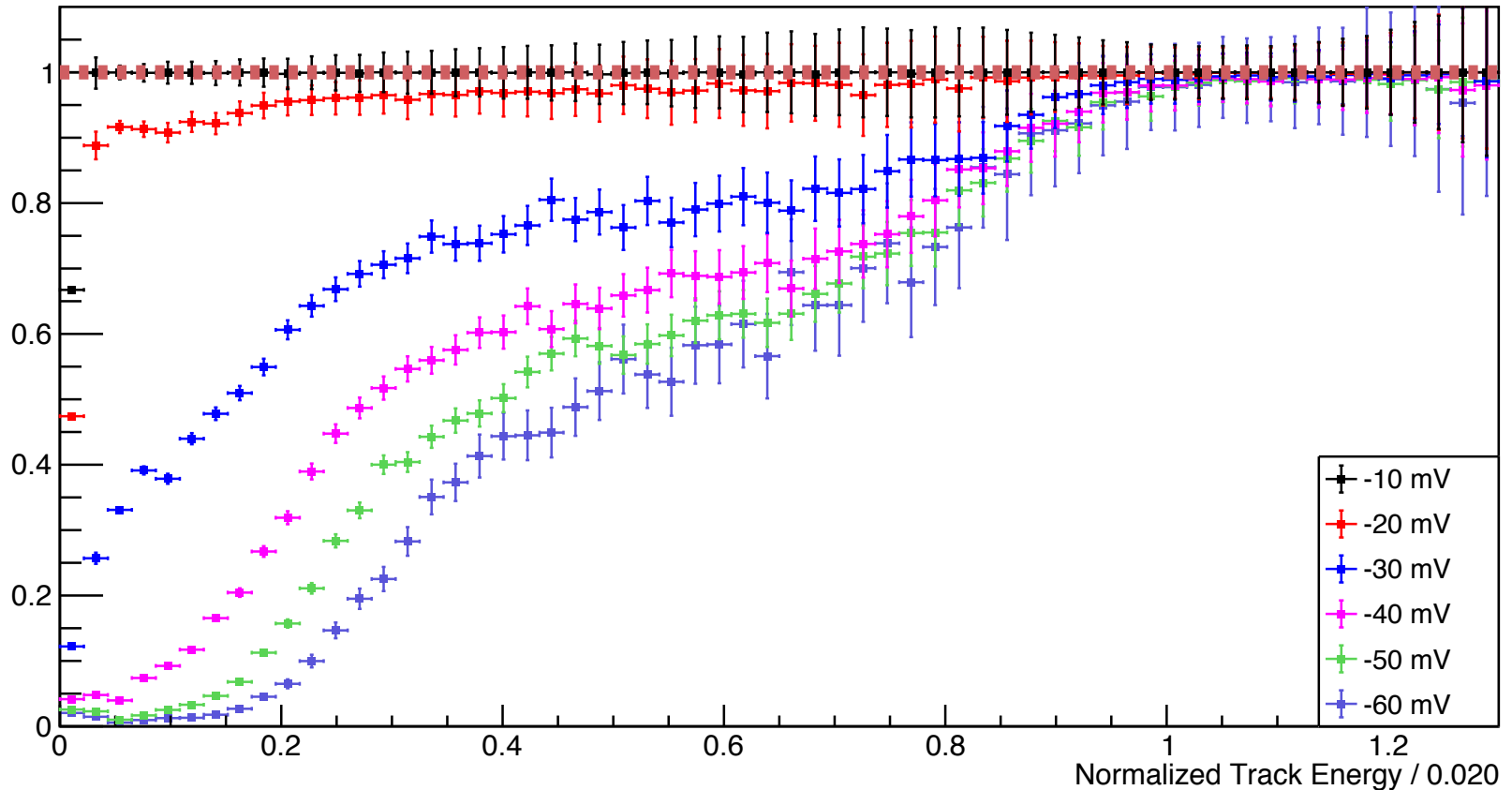
HMS PRLO PID (NPE SUM = 0.0)





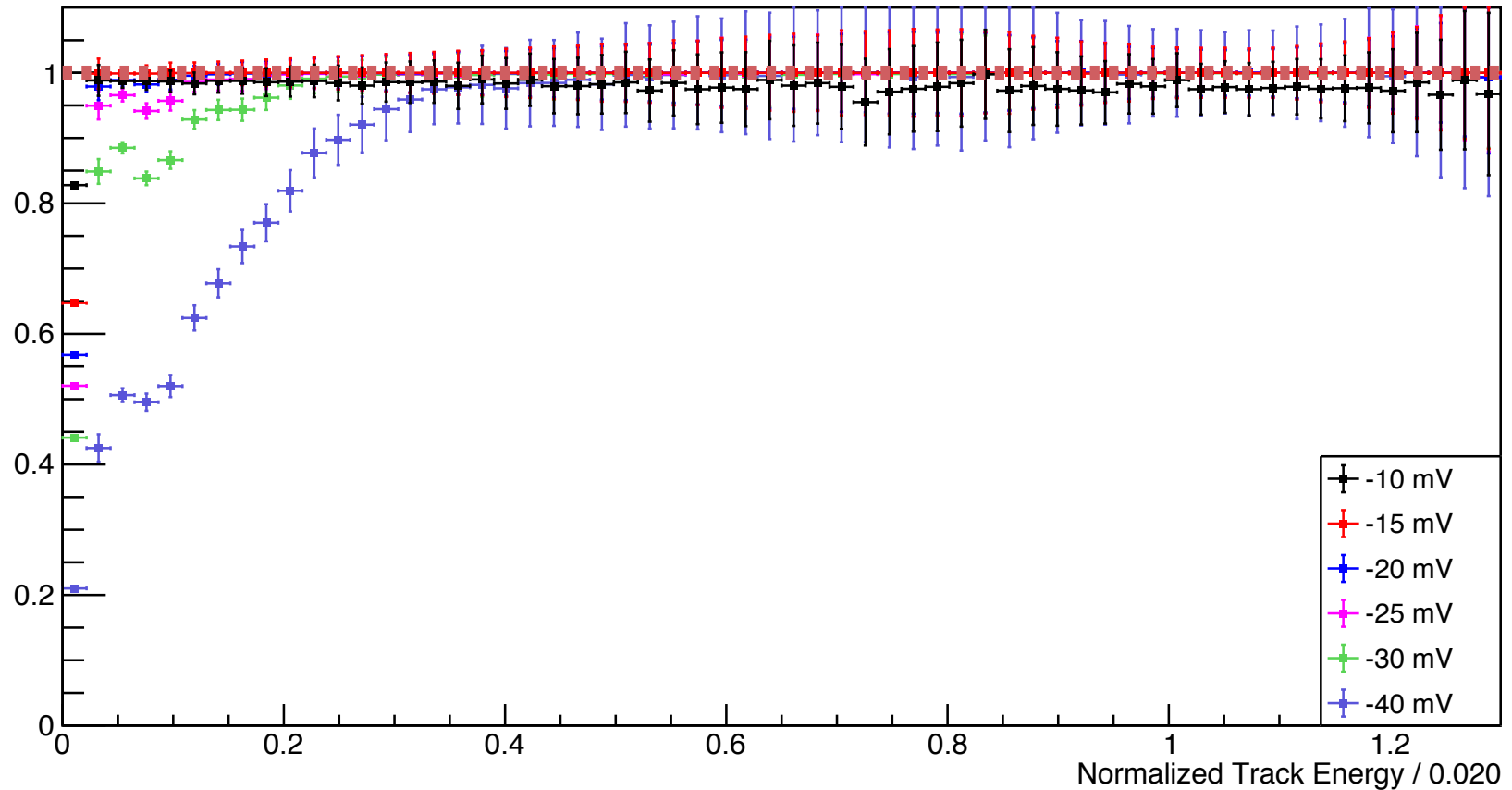
# HMS PID Pions

HMS PRHI PID (NPE SUM = 0.0)



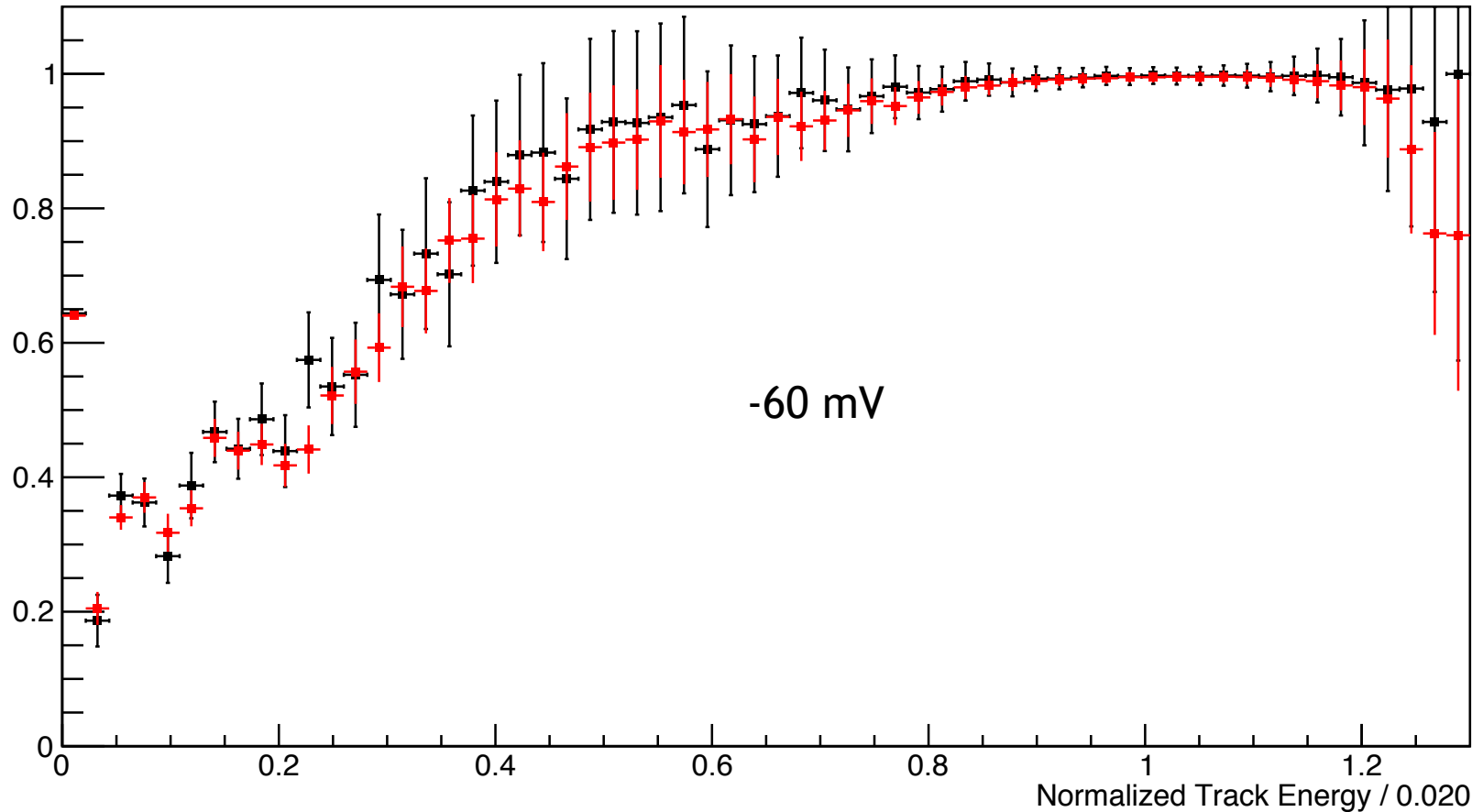
# HMS PID Pions

HMS SHLO PID (NPE SUM = 0.0)



# PID Cuts Via FADC

HMS PRHI PID



# Looking Forward

- PID legs of trigger proven to behave as expected during the fall 2017 commissioning run
- Multiple failure points regarding the trigger PID legs and thresholds were identified and understood
  - Control measures are now in place to ensure these types of failures do not occur in the future
- Tools have been developed which allow trigger PID thresholds to be examined in real time
- Standard run plan for future trigger PID threshold scans have been developed and will be executed during the spring 2018 commissioning period