

AC-LGAD Noise rate

- arXiv:2211.09698 strip AC-LGAD sensors at test beam after an amplifier and measured with oscilloscope

- Signal $\sim (40-80)$ mV
- Noise ~ 2 mV (pedestal RMS in 5 ns)
- Offline cut (< -15 mV)

Noise level (mV)

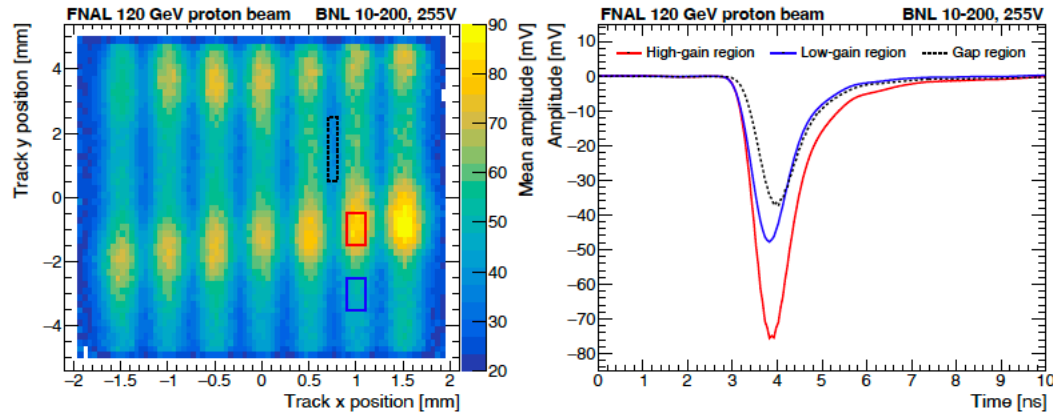
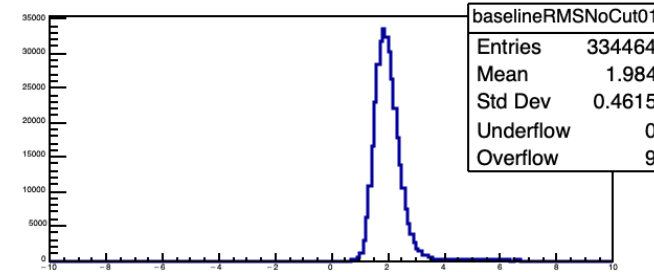
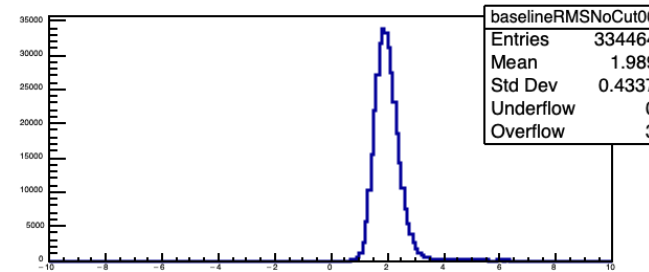


Figure 5: Signal MPV amplitude as a function of the telescope track x and y position (left) for the BNL 10-200 sensor. The different colored boxes represent the high-gain (red), low-gain (blue), and gap (black dotted) regions. The averaged waveform (right) for the three different regions.

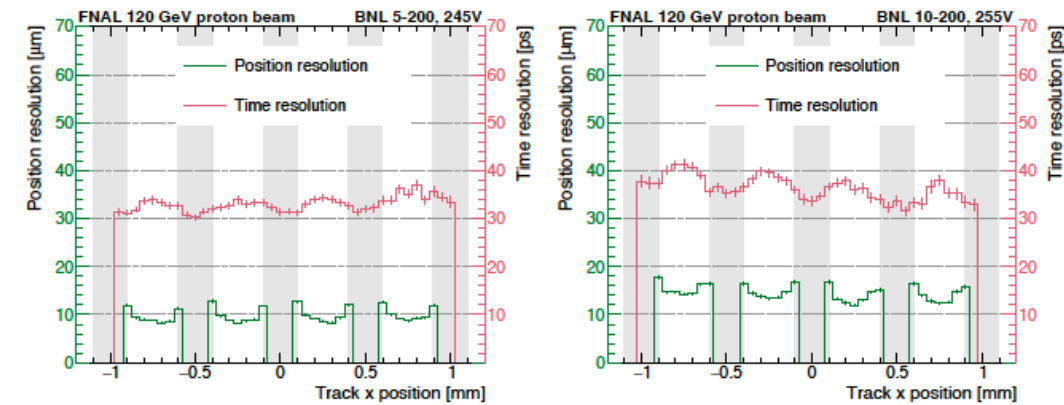


Figure 18: Summary of the position and time resolutions as a function of the track x position for the BNL 5-200 sensor (left) and BNL 10-200 (right). Both the position and time resolutions are measured in the sensor region with high-gain only.

AC-LGAD Noise rate

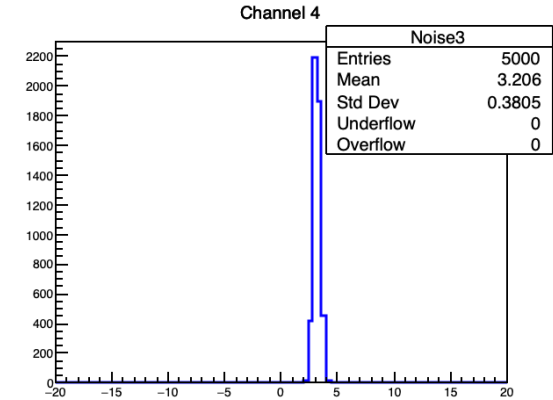
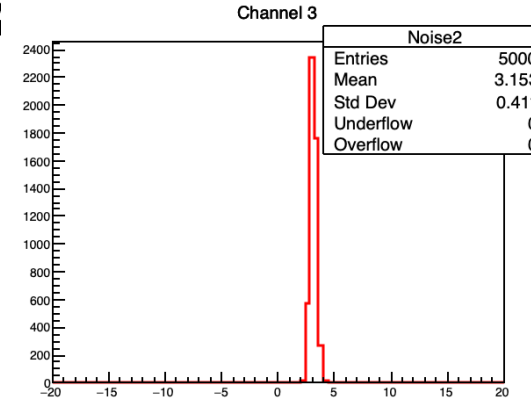
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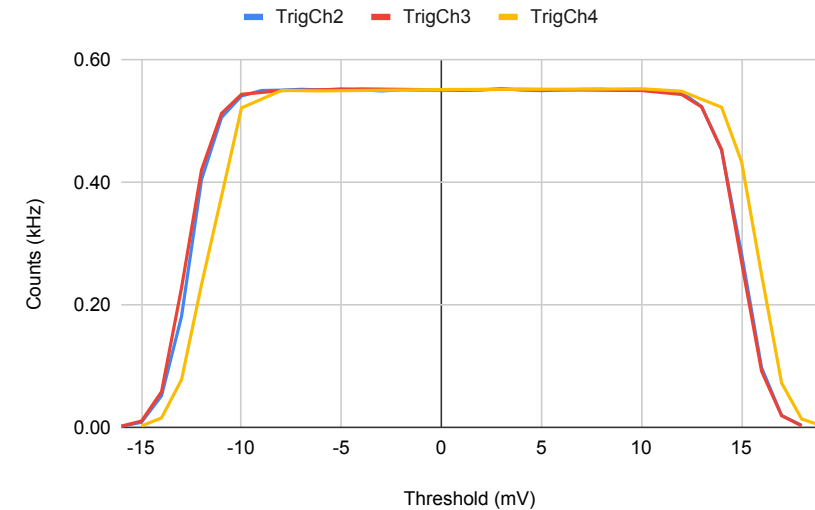
- Noise from strip AC-LGAD sensors after an amplifier and measured with oscilloscope

- No signal
- Noise ~ 3 mV (pedestal RMS in 72 ns)
- Varying thresholds
 - 2-10 Hz at -15 mV

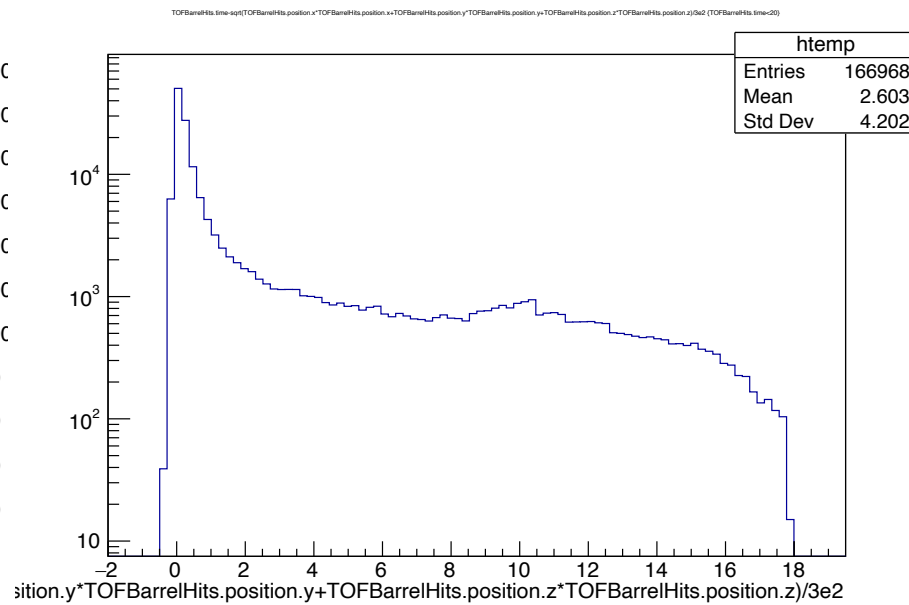
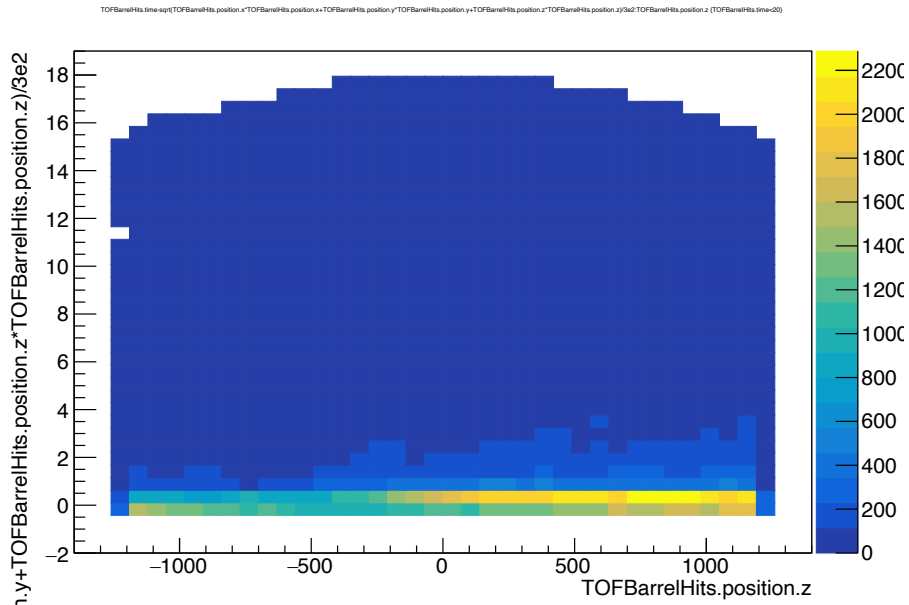
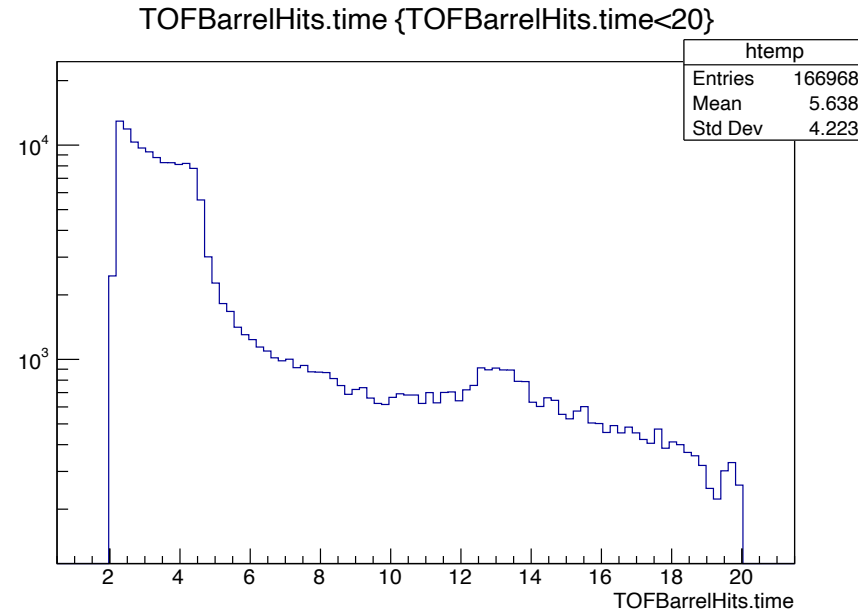
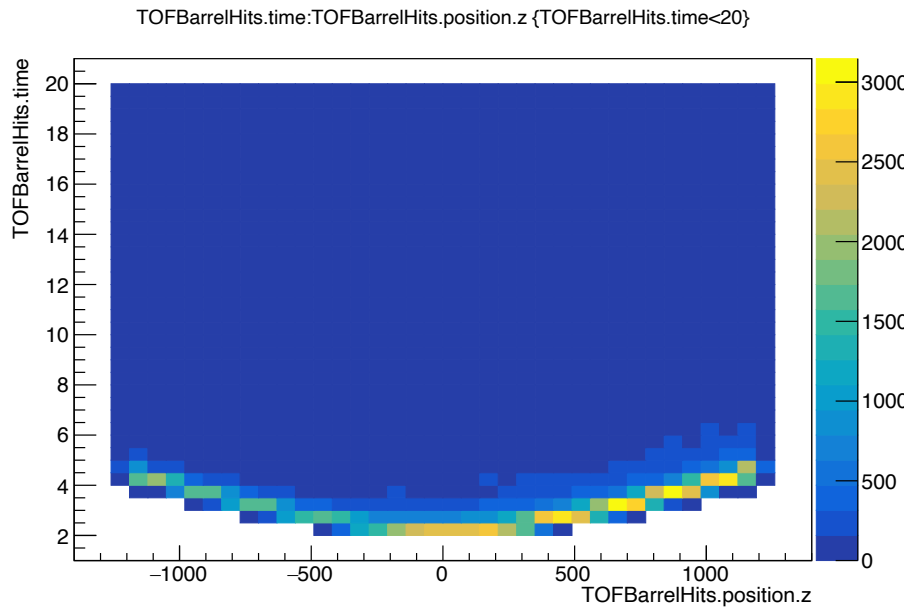
Noise level (mV)



Count (KHz) vs. Threshold (mV)

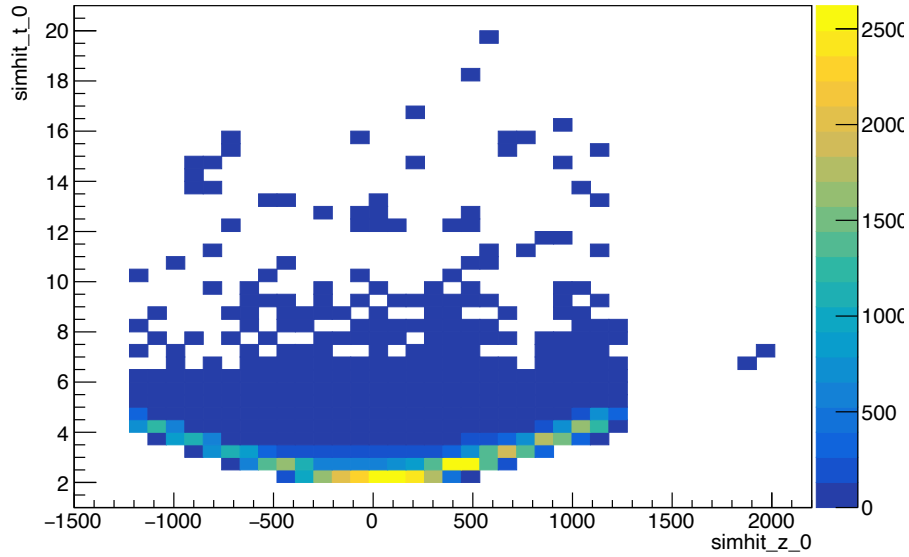


All Barrel TOF Hits in 80k NC DIS (5x41 GeV) events

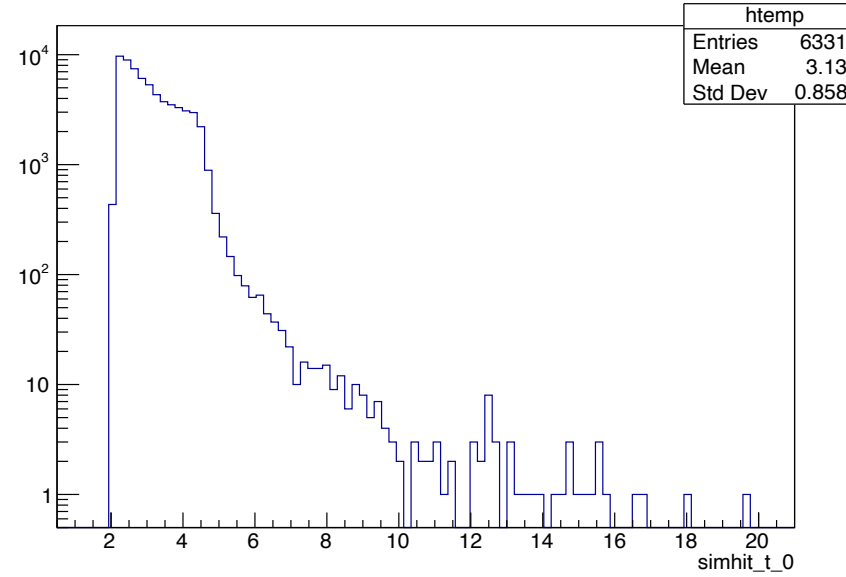


Track-Matched BTOF Hits in 80k NC DIS (5x41 GeV)

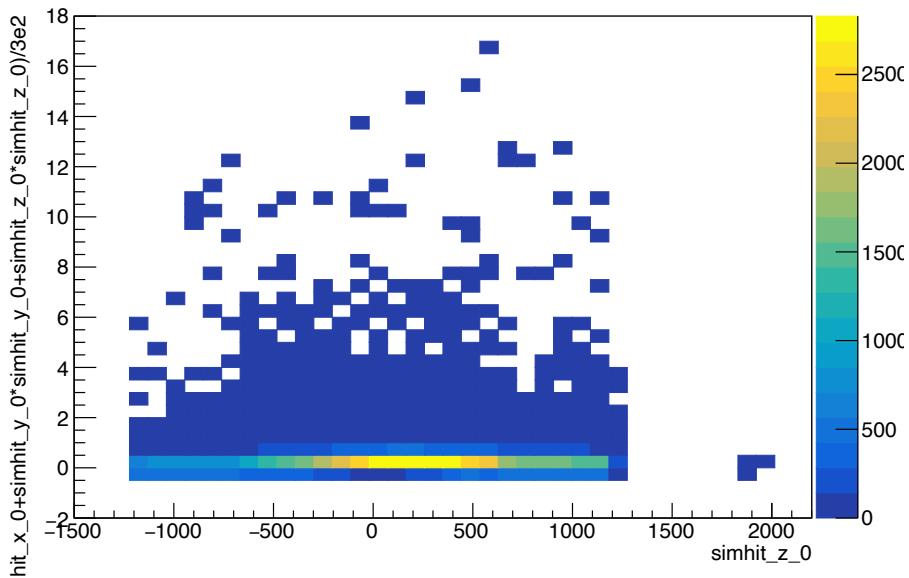
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simhit_t_0 {proj_det_0>0&&simhit_t_0<20}



simhit_t_0*sqrt(simhit_x_0*simhit_x_0+simhit_y_0*simhit_y_0+simhit_z_0*simhit_z_0)/3e2:simhit_z_0 {proj_det_0>0&&simhit_t_0<20}



simhit_t_0*sqrt(simhit_x_0*simhit_x_0+simhit_y_0*simhit_y_0+simhit_z_0*simhit_z_0)/3e2 {proj_det_0>0&&simhit_t_0<20}

