Start Counter Attenuation Corrections

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Tracks selection and applied Cuts

• Get a quality charged track with the following cuts:
  • Number of Hits per track $\geq 14$
  • Track_FOM $\geq 2.69 \times 10^{-3}$
  • $|\text{vertex}_z - \text{target center}| \leq 15$ cm
  • Radial cut $< 1$ cm

• Define $t_0$ as the time based track time

• Loop over the ADC digihit object and get the hit time, sector, and pulse integral corrected for pedestal.

• Plot the time difference between the hit time and $t_0$. 
Timing Cut

- $0 \leq t-t_0 < 4 \text{ ns}$

250K events of run30279

<table>
<thead>
<tr>
<th>h_pulse_time</th>
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</thead>
<tbody>
<tr>
<td>Entries</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Std Dev</td>
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Counts

- $t-t_0$

Graph showing the distribution of $t-t_0$ with counts on the y-axis and time (in ns) on the x-axis.
Track sector is the same as hit sector.
MPV of PCPI Vs Z

Starting from $z = 65$ cm, divide each start counter geometrical section into two intervals.

Fit the peak using vavilov function (The fit range adjusted manually)
To do list

• Run the plugin for 1 full run.

• Get the MPV vs Z for each individual paddle.

• Apply the attenuation corrections and compare dEdx before and after corrections.

• Create the calibration figures for the NIM paper.