Start Counter Calibration

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GLUEX

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Propagation Time Corrections

- Find a track matched to the TOF and not the SC. Get the TOF time corrected for the walk and propagation, then correct for the flight time and calculate (t_tof_Corr= TOF time – Flight time)

- Determine the RF time for the event at the center of the target and correct for the location of the vertex along the target (tv_rf)

- Calculate t_0 = dRFTimeFactory->Step_TimeToNearInputTime(tv_rf, t_tof_Corr);

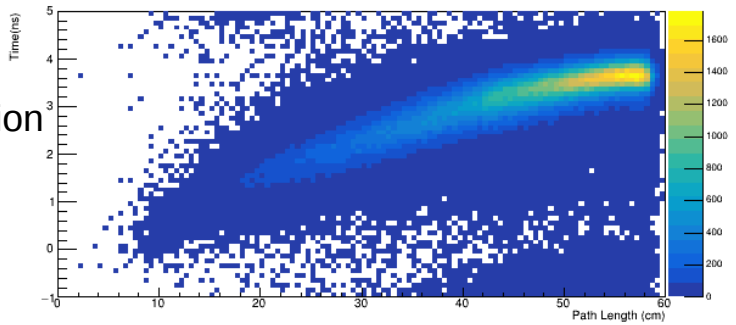
- Find a track matched to the SC. Get the walk corrected SC time (t_w) and the flight time (t_f). Define (t_sc = t_w – t_f)

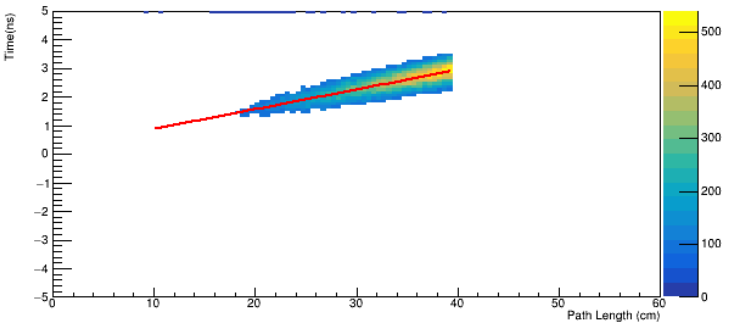
- The SC propagation time is given by (t_sc - t_0)

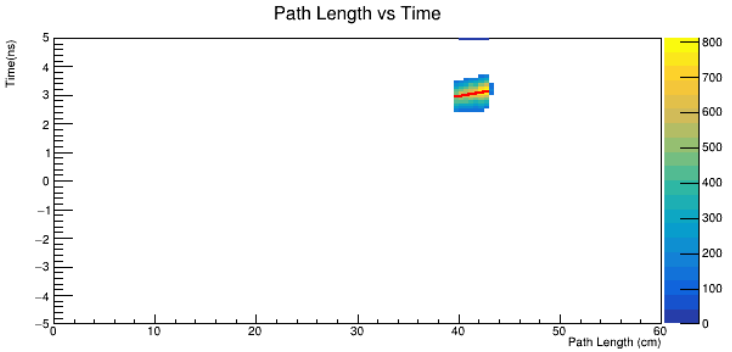
- Set the bin content that have 15% than the maximum to zero then fit a straight line to each geometrical section

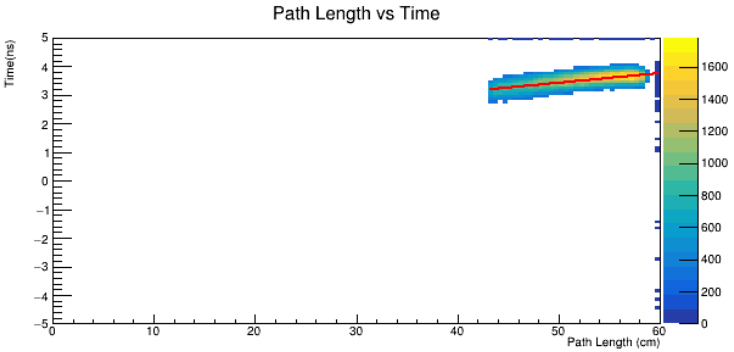
SC Propagation Time (ns)

Paddle 15





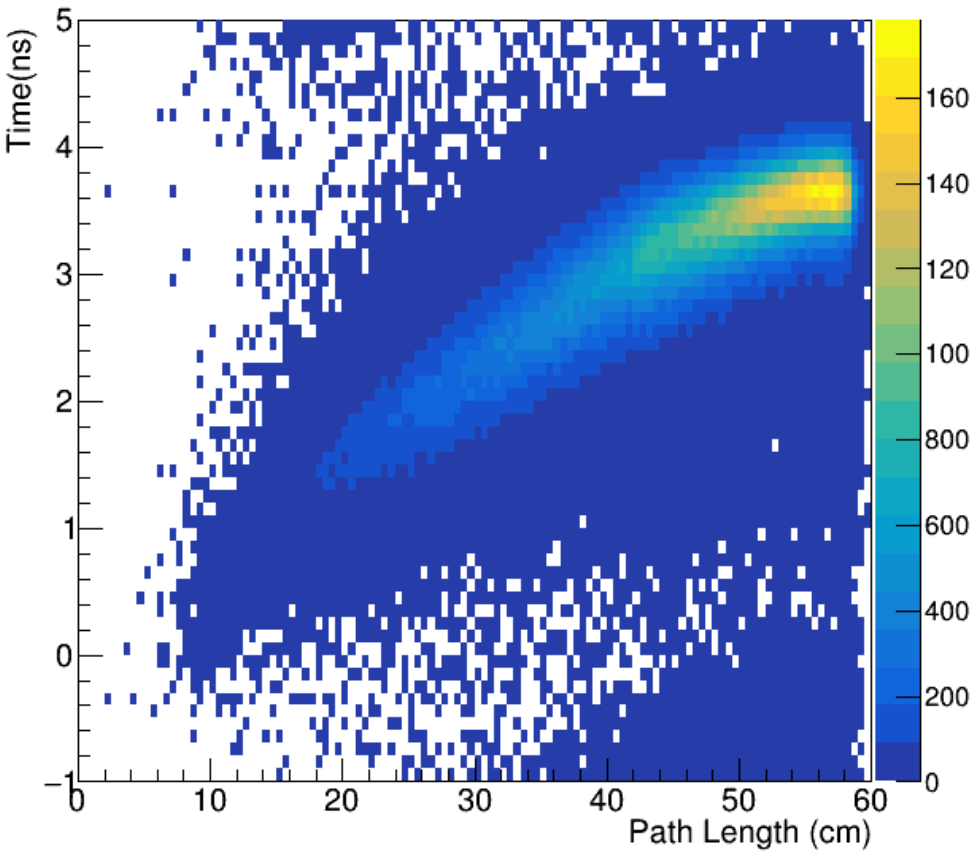




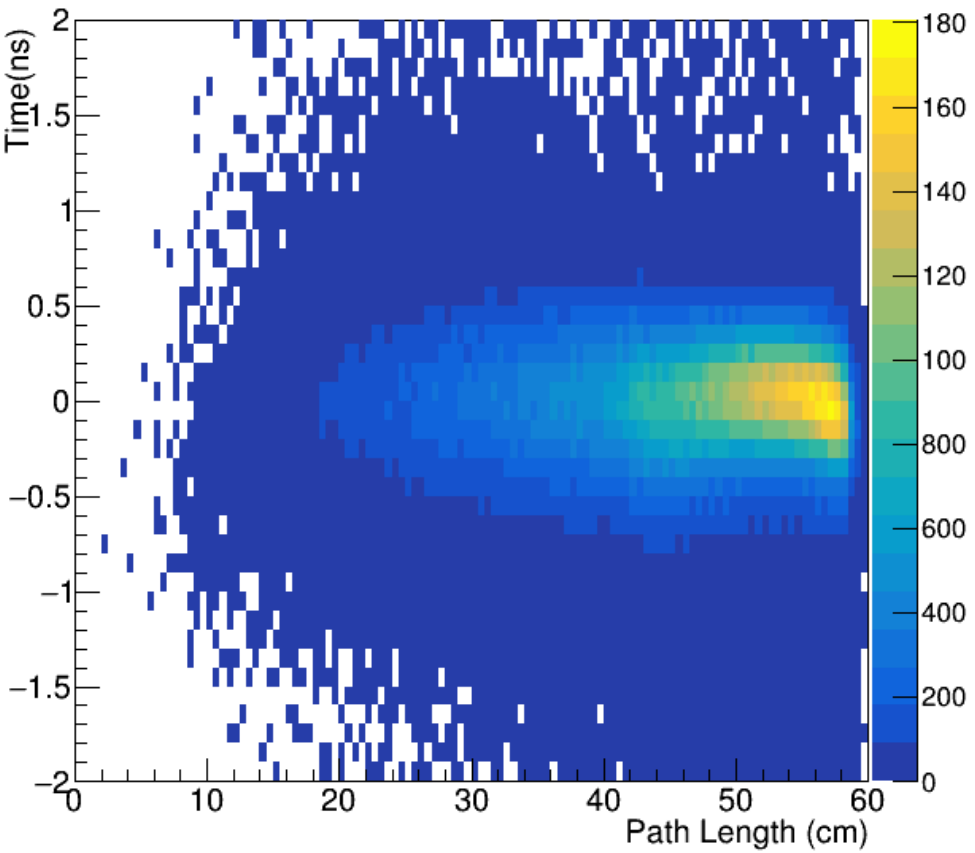
Propagation Time Corrections

- Correct for the propagation time

Before Correction



After Correction



Paddle 15

SC Time Resolution

•Find a track matched to the SC. Find the RF time at the center of the target and correct for the location of the vertex along the target (T_RFv).

•Get the walk corrected SC time (t_w) and the flight time (t_f). Define t_sc = t_w – t_f

• Apply the propagation time corrections to obtain t_pc

• Calculate t0 = dRFTimeFactory-> Step_TimeToNearInputTime(T_Rfv,t_pc);

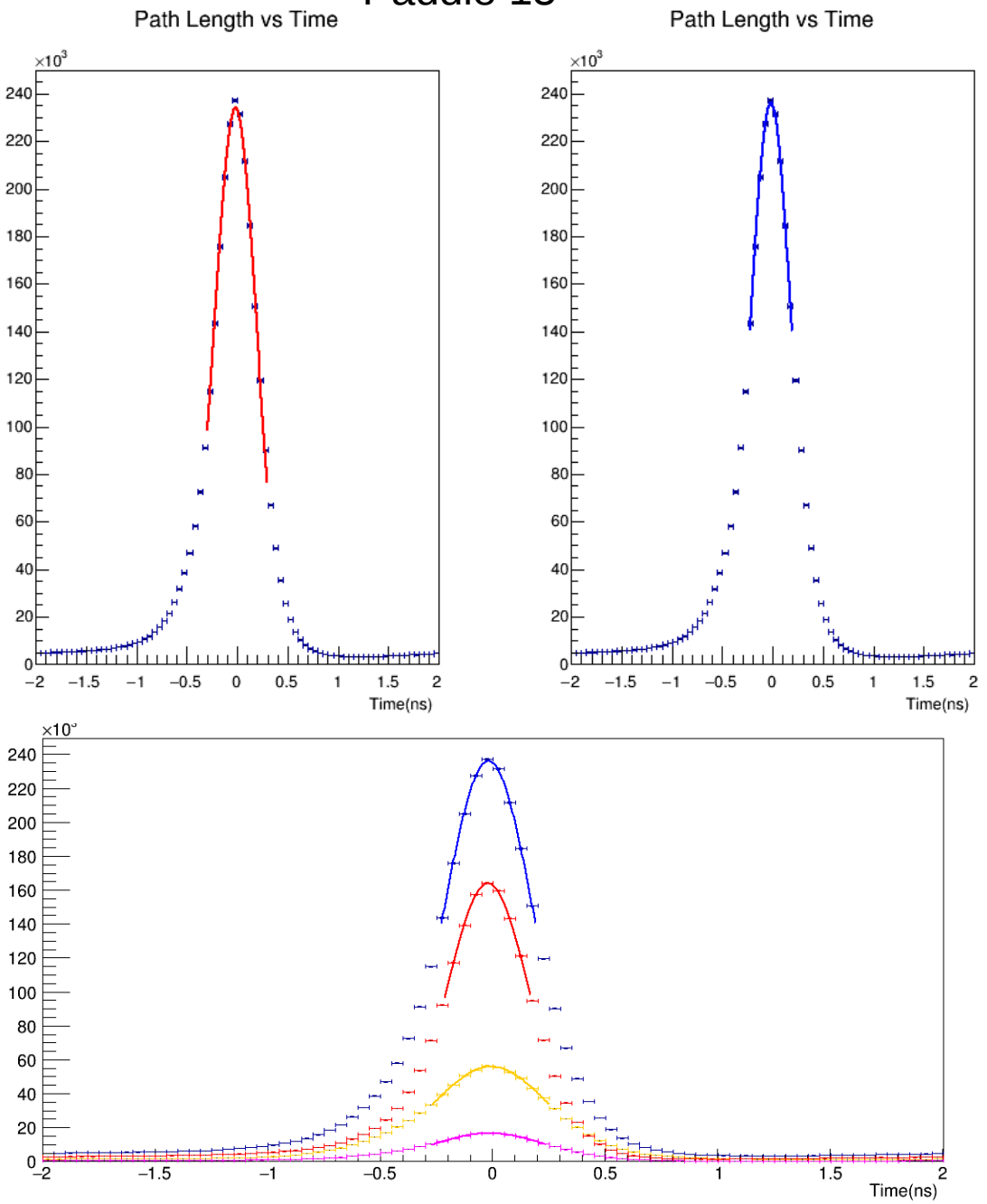
• Time resolution = t_pc – t0

•This time is plotted for each paddle and fitted in a range of -0.3 ns to 0.3 ns (Top Red Fit).

•Another fit is done with the mean of the previous one for 1 sigma (Top Blue Fit).

•Same procedure is used to fit each geometrical section.

Paddle 15



SC Time Resolution