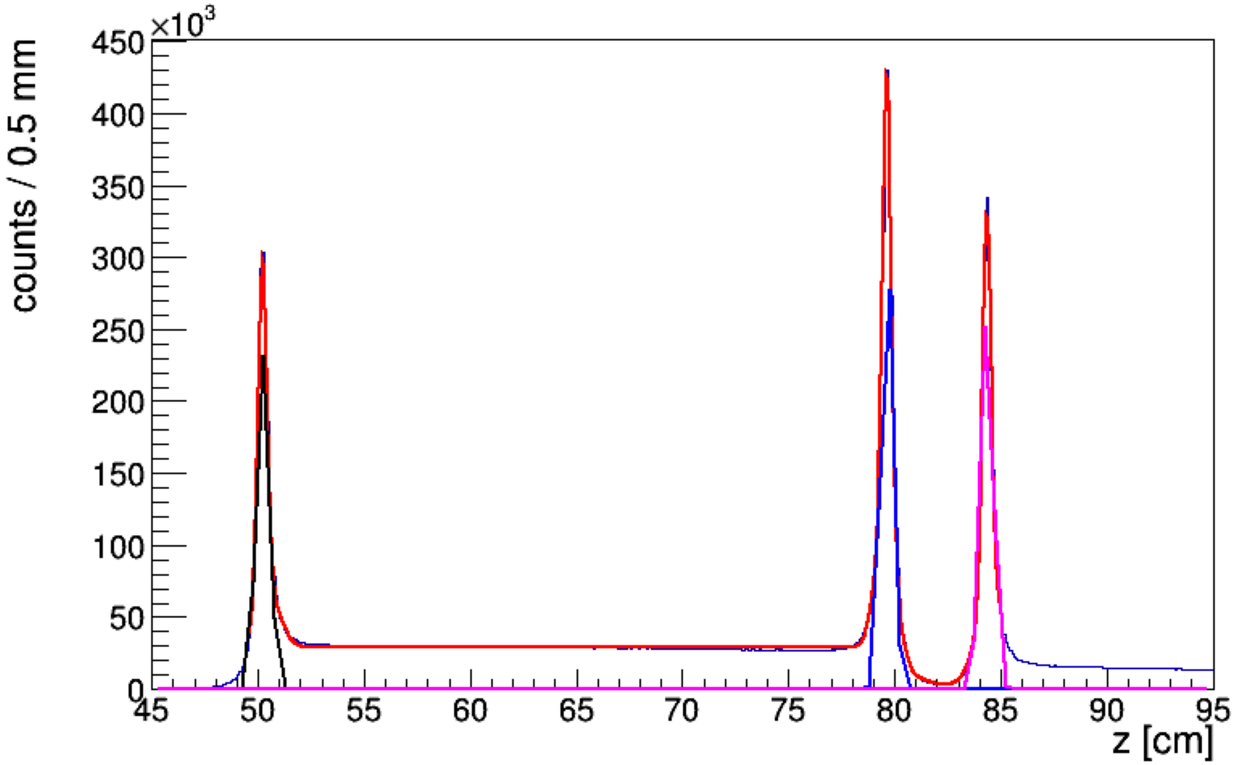
Empty target analysis

- Spring 2017 empty target data
- Fit yield of 2-track vertices and extract contributions from windows
- Ratio of yields between gas and windows matches areal density?



	Position (cm)	Density (g/cm^3)	Length (cm)	Area density (g/cm^2)	2-track yield
LH_2 gas	50-79.5	0.0015	29.5	0.04425	8.58×10^6
Kapton 1	50	1.42	75×10^{-4}	0.011	1.79×10^6
Kapton 2	79.5	1.42	75×10^{-4}	0.011	2.19×10^6
Aluminum	84.5	2.7	25×10^{-4}	0.007	1.96×10^6

Rough scaling of empty target rate

- Empty target run 30728 had a trigger rate of 7 kHz
- Scale factors for getting to GDH conditions
  - Target density: 10 cm butanol / 75 um Kapton = 620
  - Current x RL: 240 nA x 1.9e-5 RL / 100 nA x 4e-4 RL diamond = 0.11
  - Fraction of events from Kapton 1 window in run 30728: ~ 0.11
- Total scale factor = 620 * 0.11 * 0.1 = 6.82
- Scaled rate for GDH from run 30728: 7 kHz * 6.82 = ~50 kHz
  - Below DAQ rate and in the ballpark of the estimation from simulation