

CgemLineFit Results and Propagation Study

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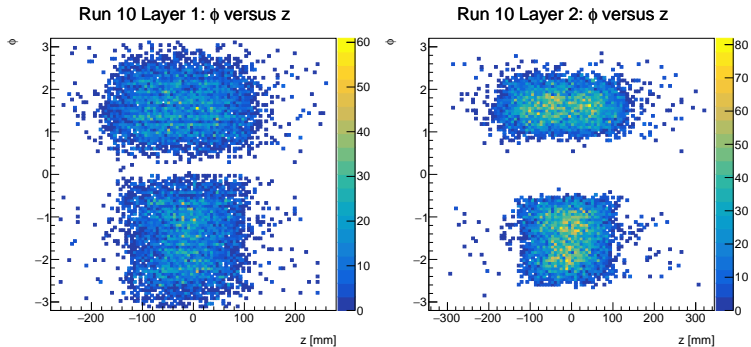
May 26, 2020

Intro

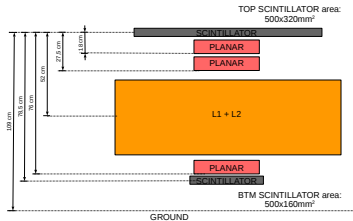
- ▶ CgemLineFit loops over clusters with most charge in the event
- ▶ Memory leak makes it hard to run over large # of events
- ▶ N_{comb} varies from run to run due to the memory leak
- ▶ % of events kept varies a lot run to run (due to setup and choice of N)

Run	Events Fit	Total Events	Percent	N_{comb}
10	10623	136582	7.78%	100
11	7635	127358	5.99%	80
12	5495	23709	23.18%	200
13	3497	70002	5.00%	200
14	3700	86400	4.28%	100
15	1458	5026	29.0%	500
16	5707	22411	25.5%	200
17	33275	234153	14.21%	19
Total	71390	705641	10.12%	-

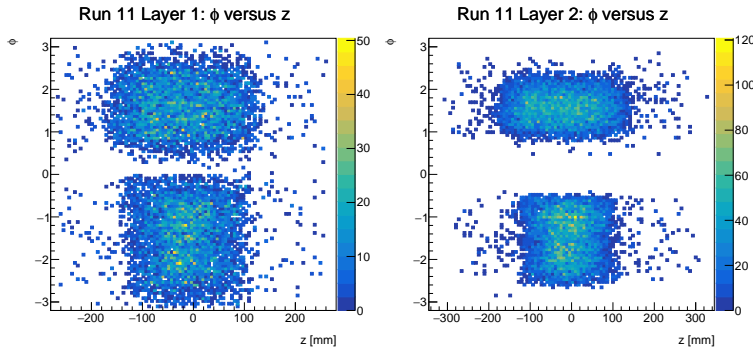
Run 10



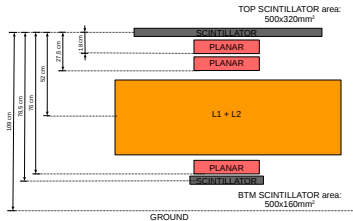
2019/12/21



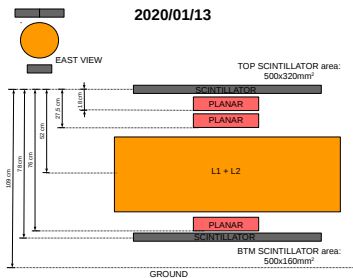
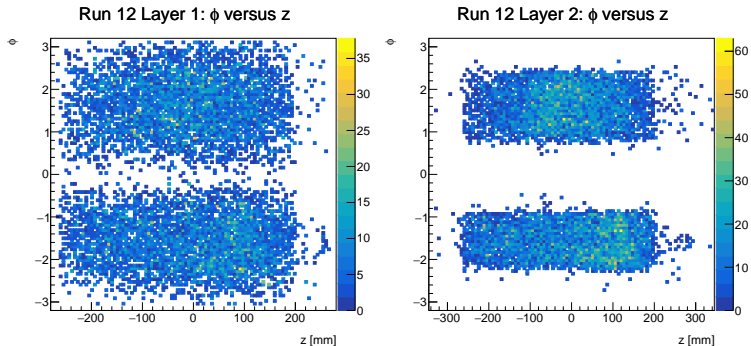
Run 11



2019/12/21

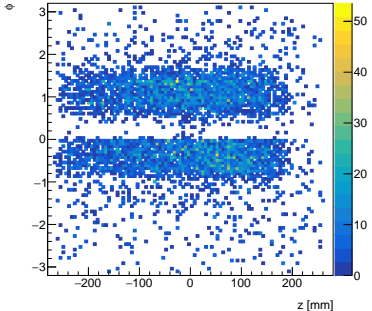


Run 12

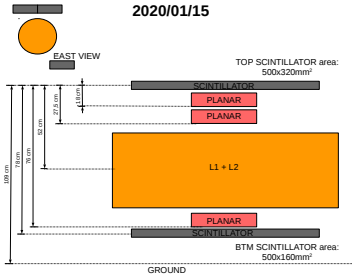
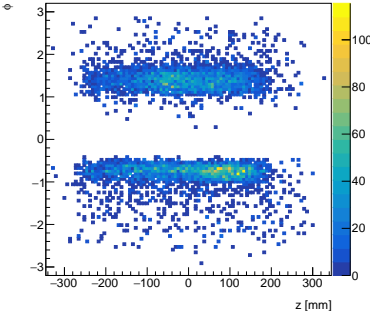


Run 13

Run 13 Layer 1: ϕ versus z

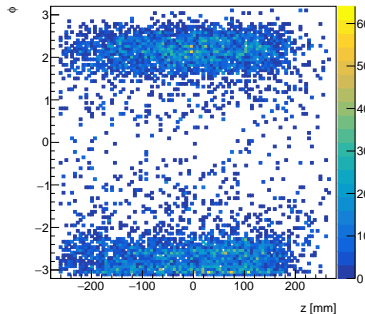


Run 13 Layer 2: ϕ versus z

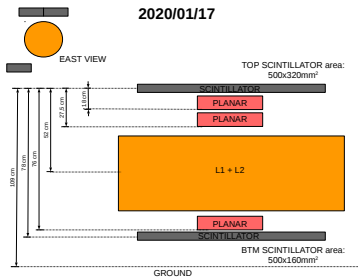
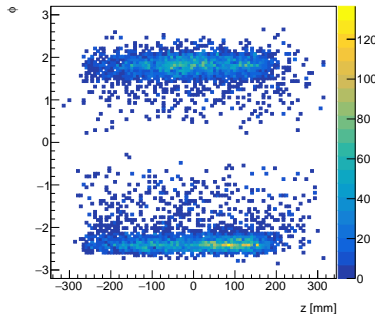


Run 14

Run 14 Layer 1: ϕ versus z

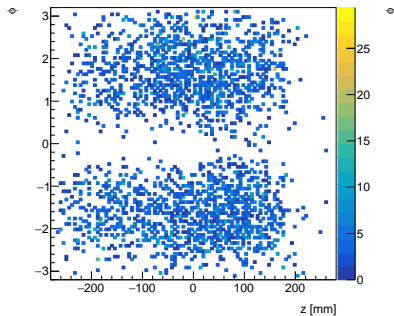


Run 14 Layer 2: ϕ versus z

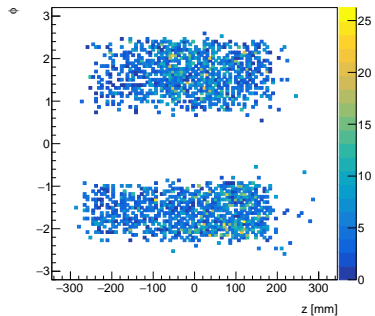


Run 15

Run 15 Layer 1: ϕ versus z

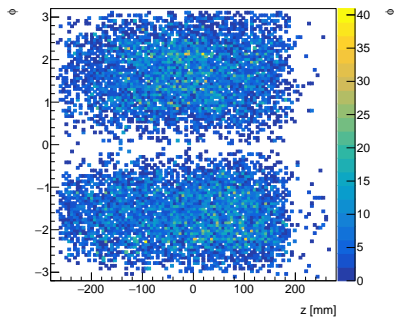


Run 15 Layer 2: ϕ versus z

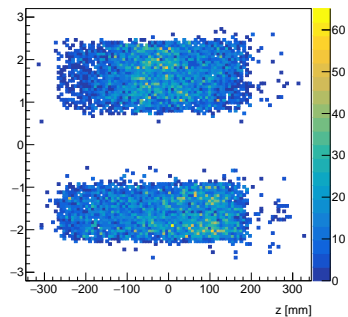


Run 16

Run 16 Layer 1: ϕ versus z

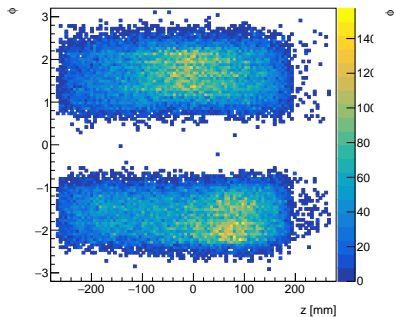


Run 16 Layer 2: ϕ versus z

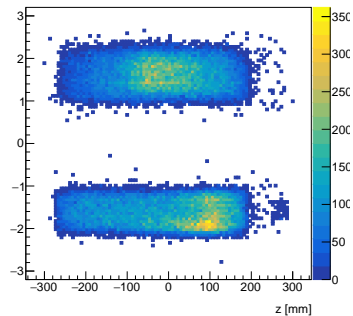


Run 17

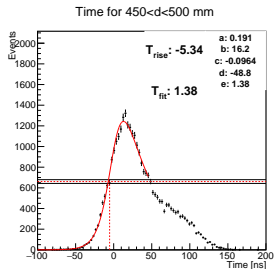
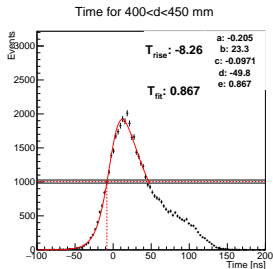
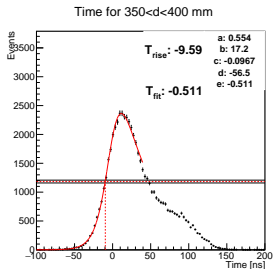
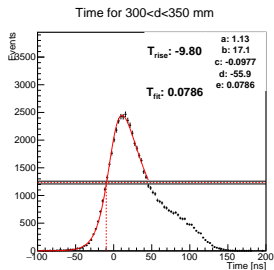
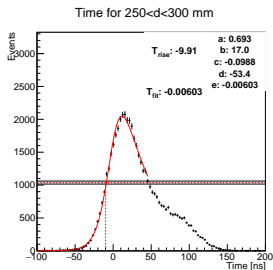
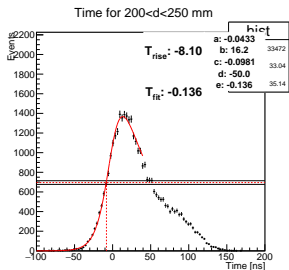
Run 17 Layer 1: ϕ versus z



Run 17 Layer 2: ϕ versus z

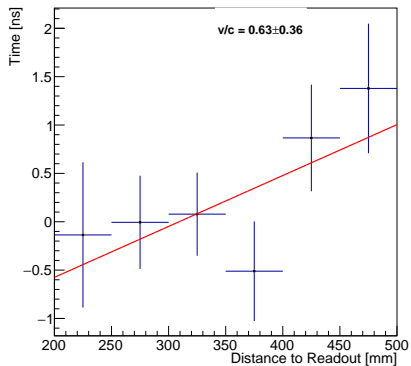


Fits for FEBs 17-20, 25-27, 32-34, and 39-41 combined

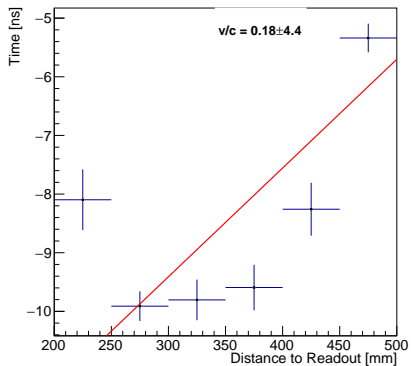


Fits for FEBs 17-20, 25-27, 32-34, and 39-41 combined

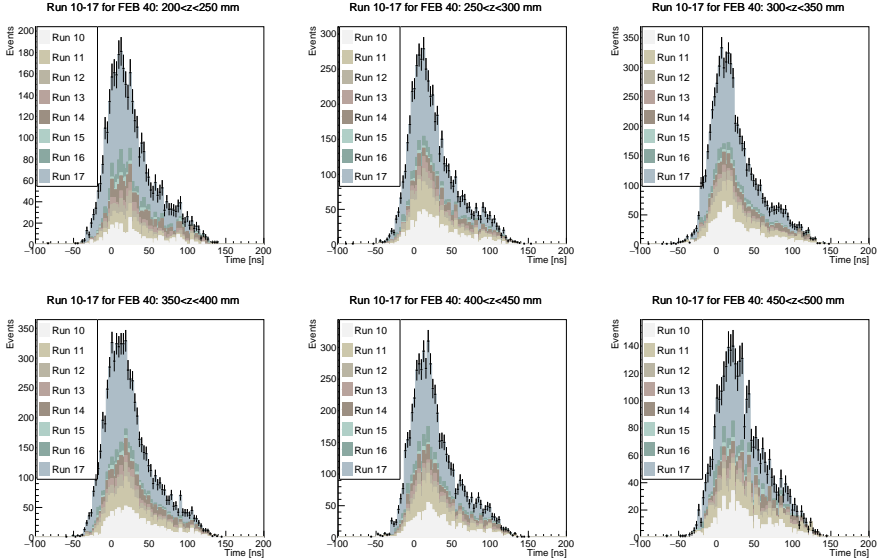
Fit Time versus Distance to Readout Layer 2



Interpolated Time versus Distance to Readout Layer 2

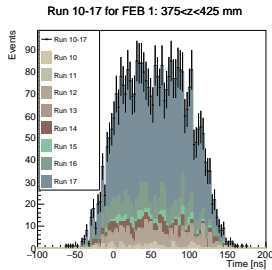
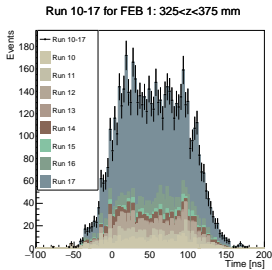
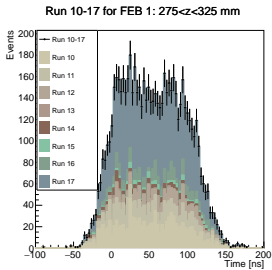
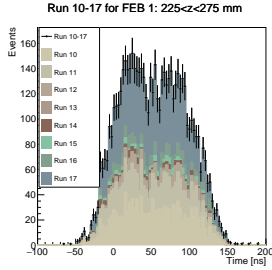
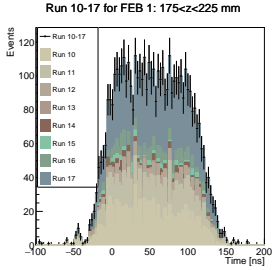
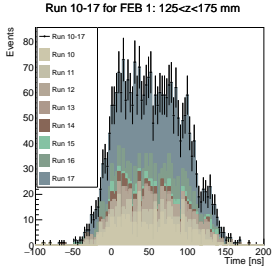


Readout 40



Clean signal shape with large statistics

Readout 1



Broad time distribution, similar statistics

Summary

- ▶ ϕ versus z distributions are quite clean
- ▶ Combining FEBs gives decent statistics for layer 2
- ▶ Even after fit, some FEBs have broad time distributions

