

HGTD meeting

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Introduction

- An increase in the collected charge has been observed for the reference sensor LGA35
 - By comparing different test beam campaigns

T = -30° / HV = 200V		Charge (fb)
April		18 ± 0.08
June		15.3 ± 0.12

T = -30° / HV = 180V		Charge (fb)
September		12.8 ± 0.04
October		10.9 ± 0.05

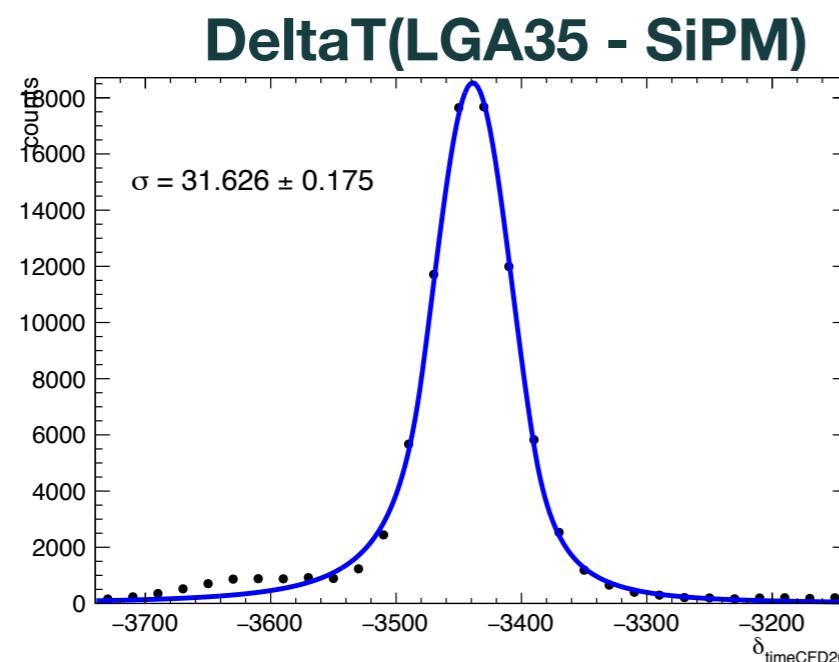
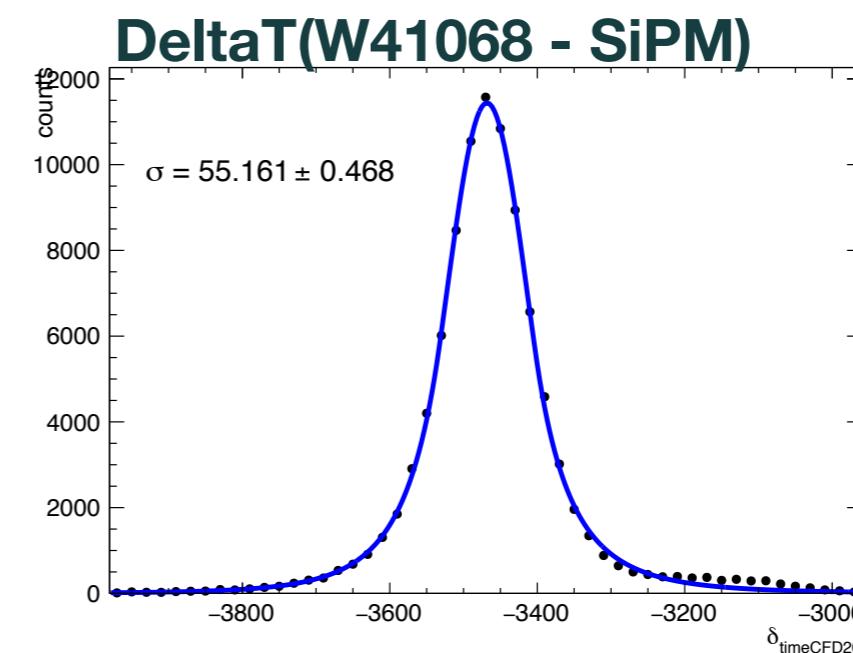
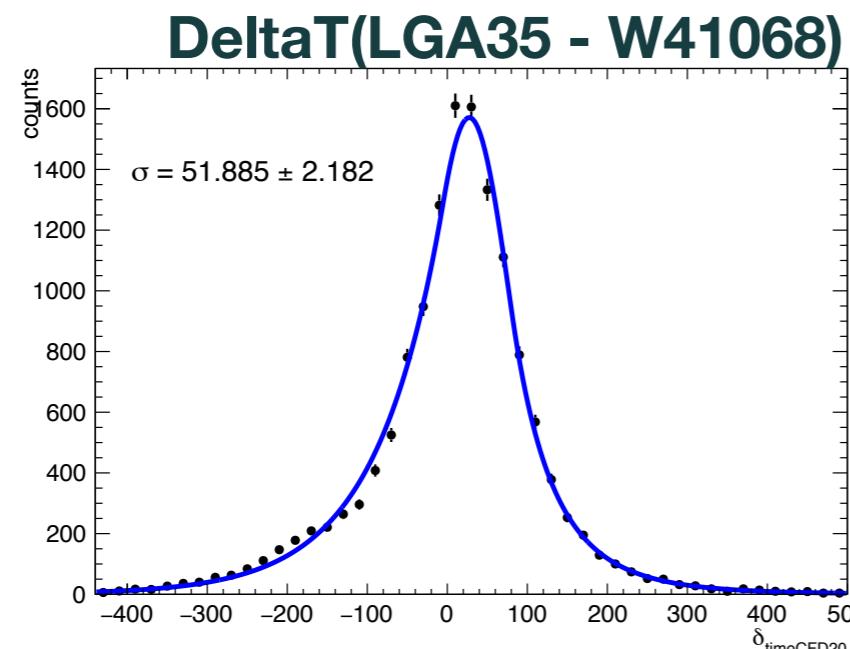
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- Recently studied the time resolution and compared it between two test beams

Time resolution

- Extracted from the width of the time difference between the LGADs and SiPM ([Talk](#))
 - Using 3 devices: 2 sensors and 1 SiPM
 - Plot the time difference between each combination of devices
- Apply a cut on the amplitude to reject background events:
 $\text{PulseHeight} > 10 \text{ mV}$
- Use a Gaussian to fit the distributions
- The time resolution is then calculated using the common script developed by Nikola ([script](#))

Time resolution fits - April

- Used the sensors: [LGA35](#) and W4-1068 (and the channel 4: SiPM)

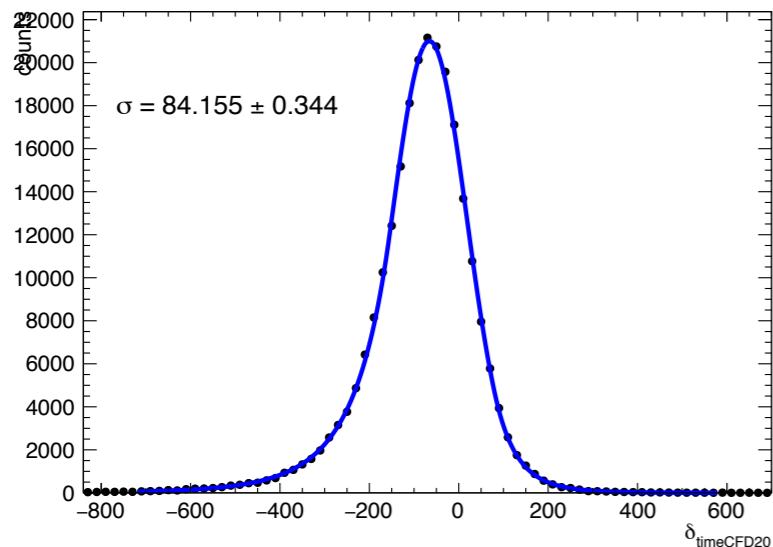


HV: 200V
Temperature: -32°C

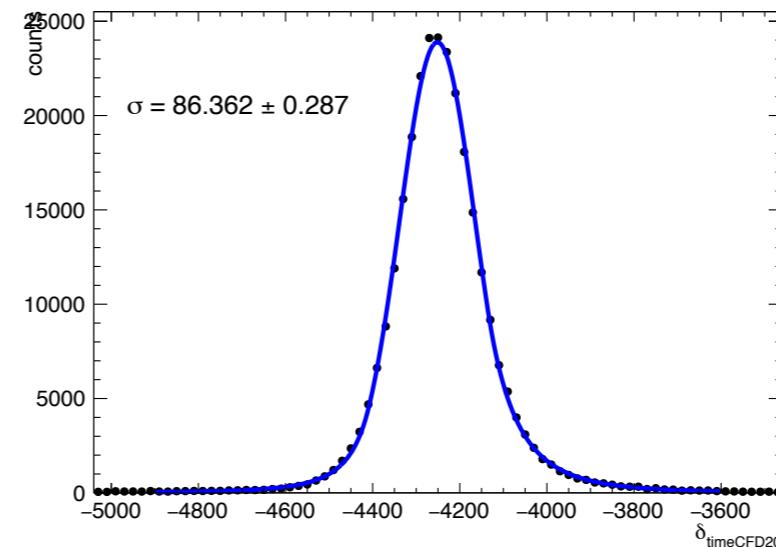
Time resolution fits - September

- Used the sensors: **LGA35** and **W6-S1021** (and the channel 4: SiPM)
Temperature: -32°C

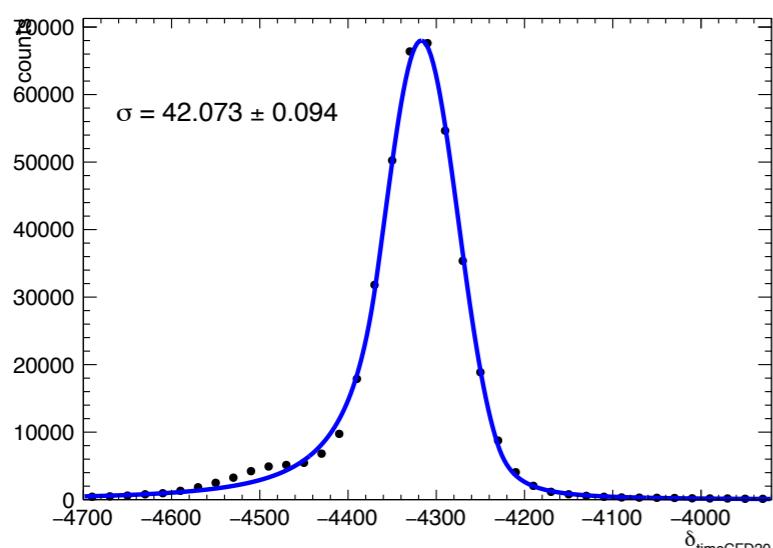
DeltaT(LGA35 - W6S1021)



DeltaT(W6S1021 - SiPM)



DeltaT(LGA35 - SiPM)



Time resolution of
LGA35

Avril

19 +/- 3.2

September

26 +/- 0.4