

Laser measurements

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Lepcol meeting

April 20, 2020



Laser measurements

- T2K gas
- Grid voltage -340 V
- Drift field 280 V/cm

1	2
guard	
0	3

From cathode

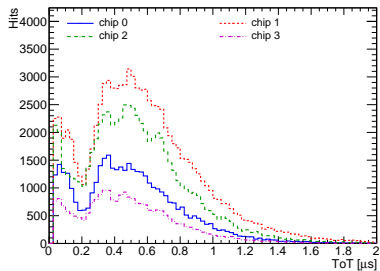
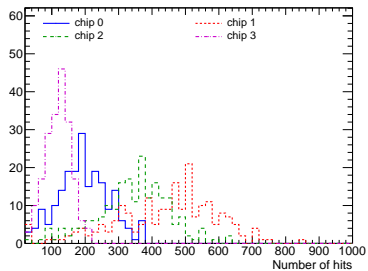
laser \rightarrow

q	2	3	4
q	q	q	q

From ceiling

Run 1090

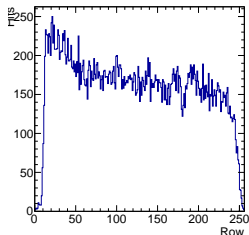
Quad in 2nd position



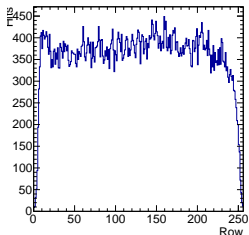
Histogram of rows

Quad in 2nd position

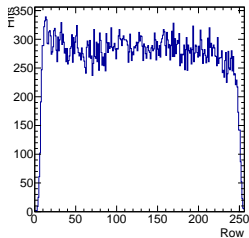
chip 0



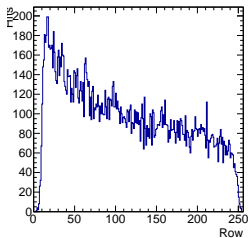
chip 1



chip 2

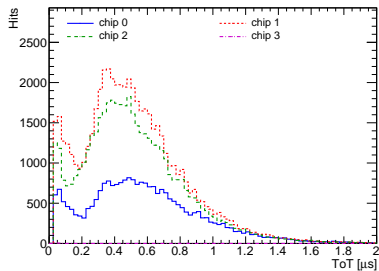
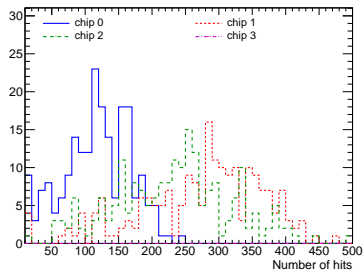


chip 3



Run 1097

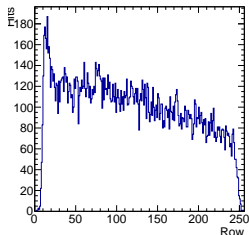
Quad in 3rd position



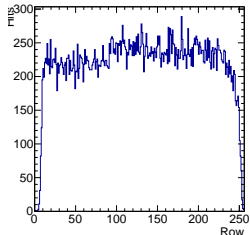
Histogram of rows

Quad in 3rd position

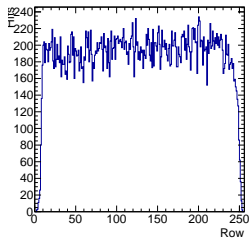
chip 0



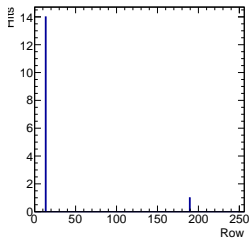
chip 1



chip 2

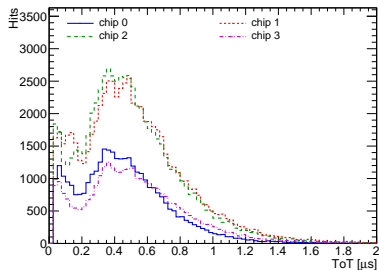
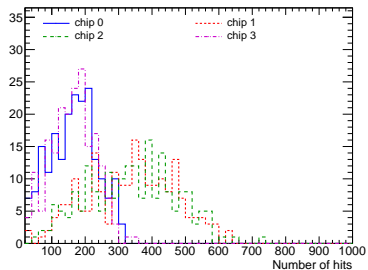


chip 3



Run 1103

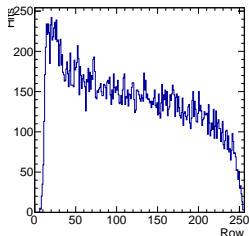
Quad in 4th position



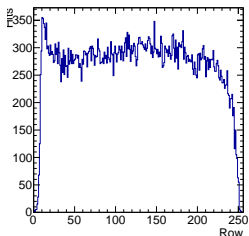
Histogram of rows

Quad in 4th position

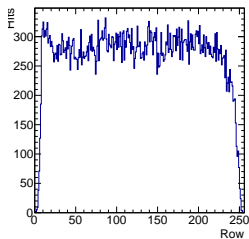
chip 0



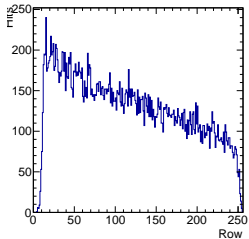
chip 1



chip 2

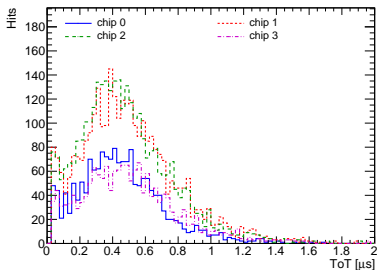
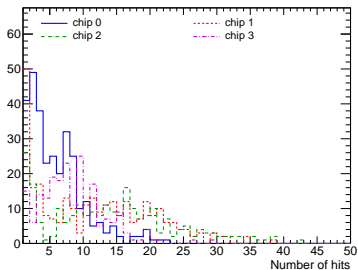


chip 3



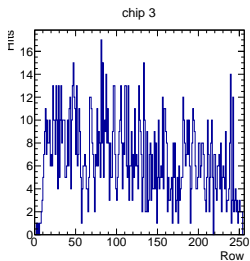
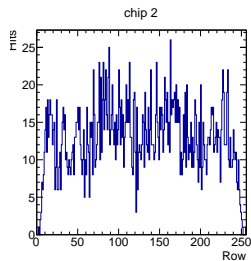
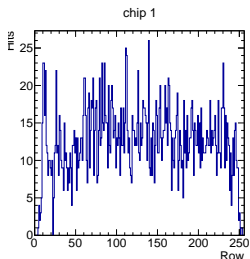
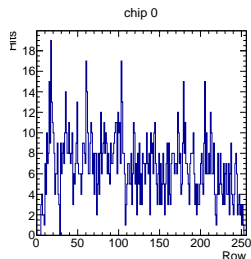
Run 1104

Quad in 4th position at low laser intensity



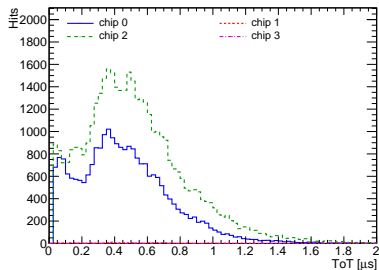
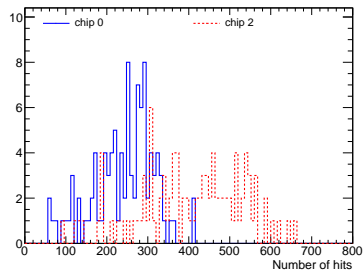
Histogram of rows

Quad in 4th position at low laser intensity



Run 1116

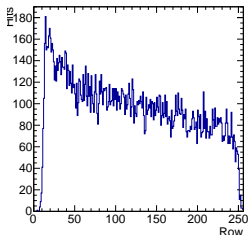
Quad in 4th position with the laser beam at an angle



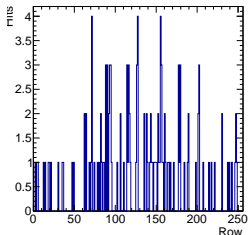
Histogram of rows

Quad in 4th position with the laser beam at an angle

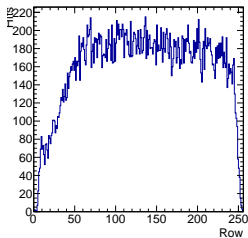
chip 0



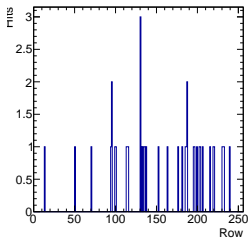
chip 1



chip 2

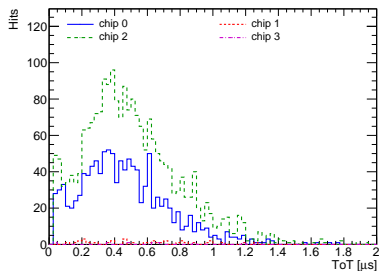
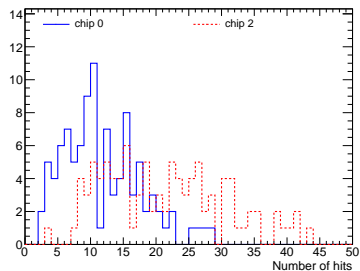


chip 3



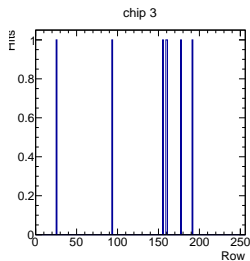
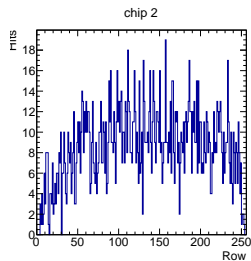
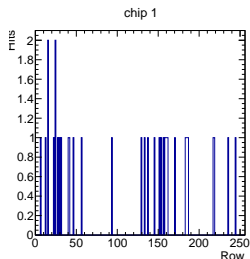
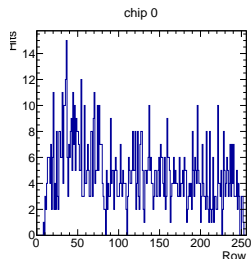
Run 1117

Quad in 4th position with the laser beam at an angle and at low laser intensity



Histogram of rows

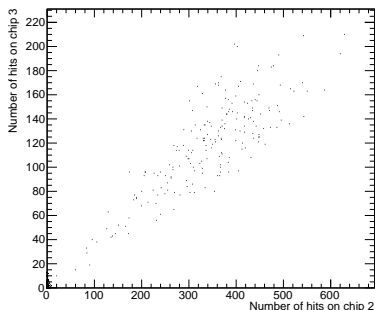
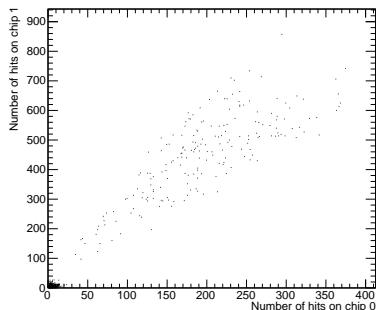
Quad in 4th position with the laser beam at an angle and at low laser intensity



Correlation between hits

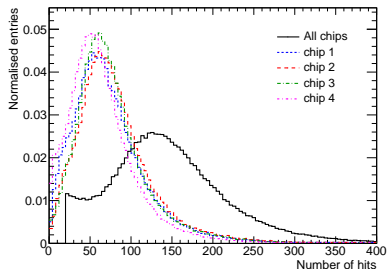
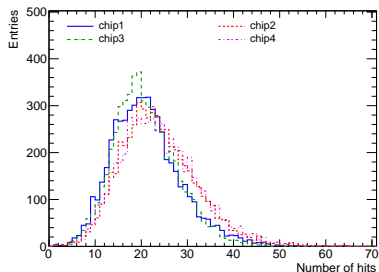
Run 1090: quad in 2nd position

Hits are correlated between two chips in a quad



What's the laser beam energy spread?

Other tests



Effect not visible in old laser spot measurements

Effect seems to be weaker in test beam measurements