

Vertex @ GSI (run 2211)

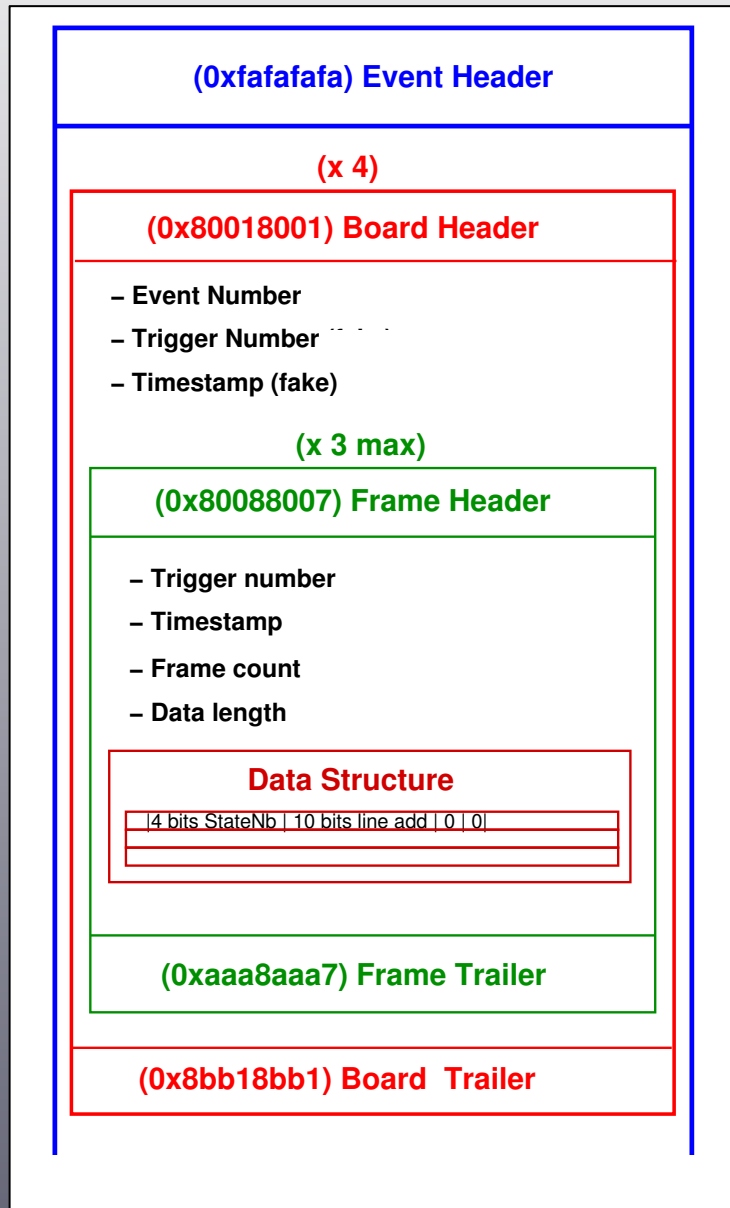
Introduction

DAQ files

Conclusions

Introduction (i)

Data Structure:



- Event/trigger number synchronized with DAQ
- Frame counter consecutive for each sensor
- Time stamp with inner clock

Analysed runs:

Run	Date	Time	Duration	Events
2211	19/04/07	18:41:12	350	61k
2212	19/04/07	18:50:36	626	115k
2242	19/04/08	19:37:21	1425	110k
2251	19/04/09	08:33:29	74	5k

➔ Analyzing run 2211

Introduction (ii)

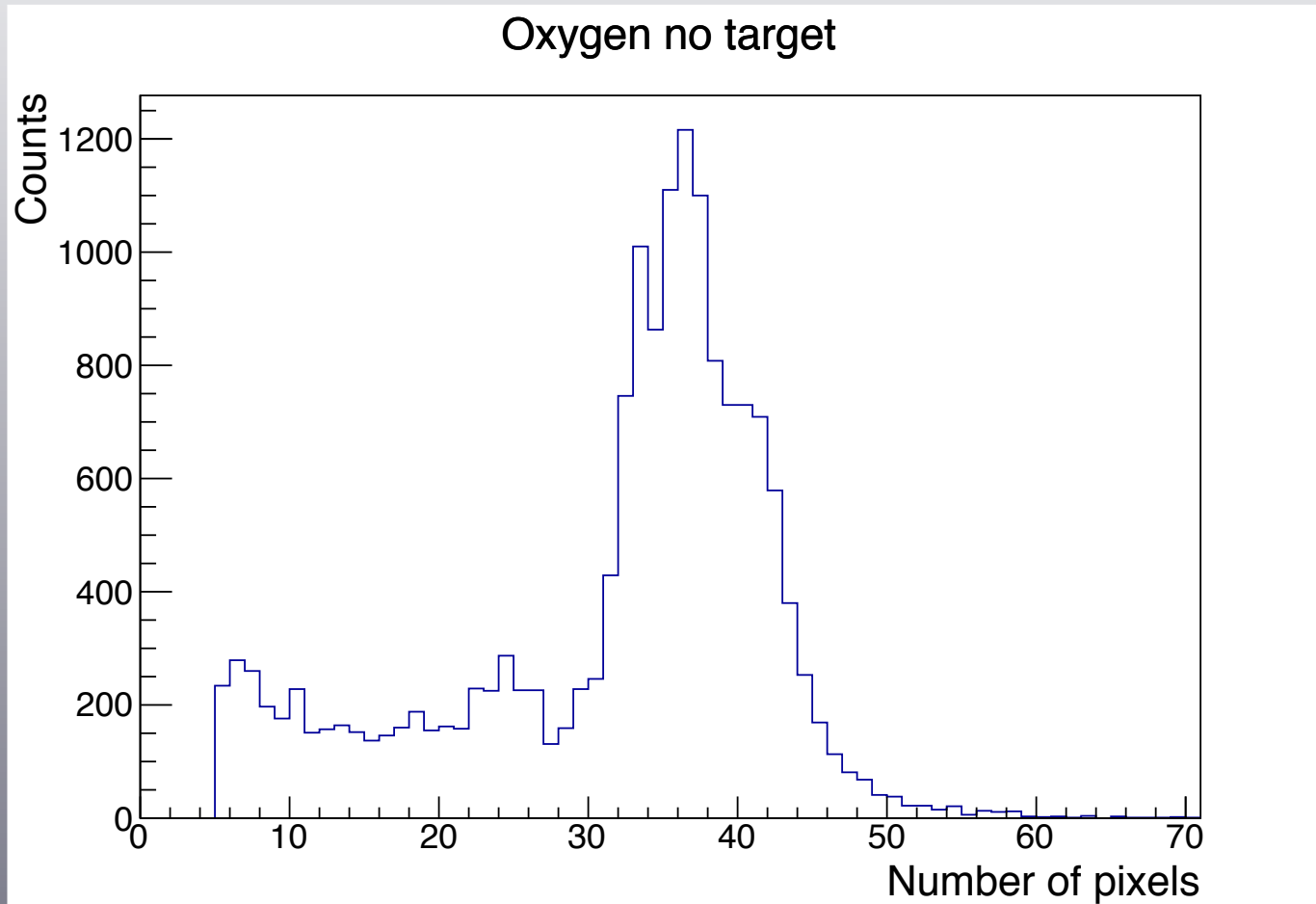
Summary

Run	Date	Obs	Status
2211	19/04/07	Reset of all sensors (#95) Sensor 2 desynchronized after 18654 evts	✓
2212	19/04/07	Reset of trigger number in sensors Resynchronized after 500 triggers	✓
2242	19/04/08	Jump/reset of trigger number of sensor 1 Sensor 4, sending no data Sensor 3 sending data not all the time	X
2251	19/04/09	Reset of all sensors (#62)	✓

- All files re-synchronized
- Send files run2212 - 2242 - 2251 to DAQ people for new integration in full DAQ files
➡ Still waiting...

DAQ files (i)

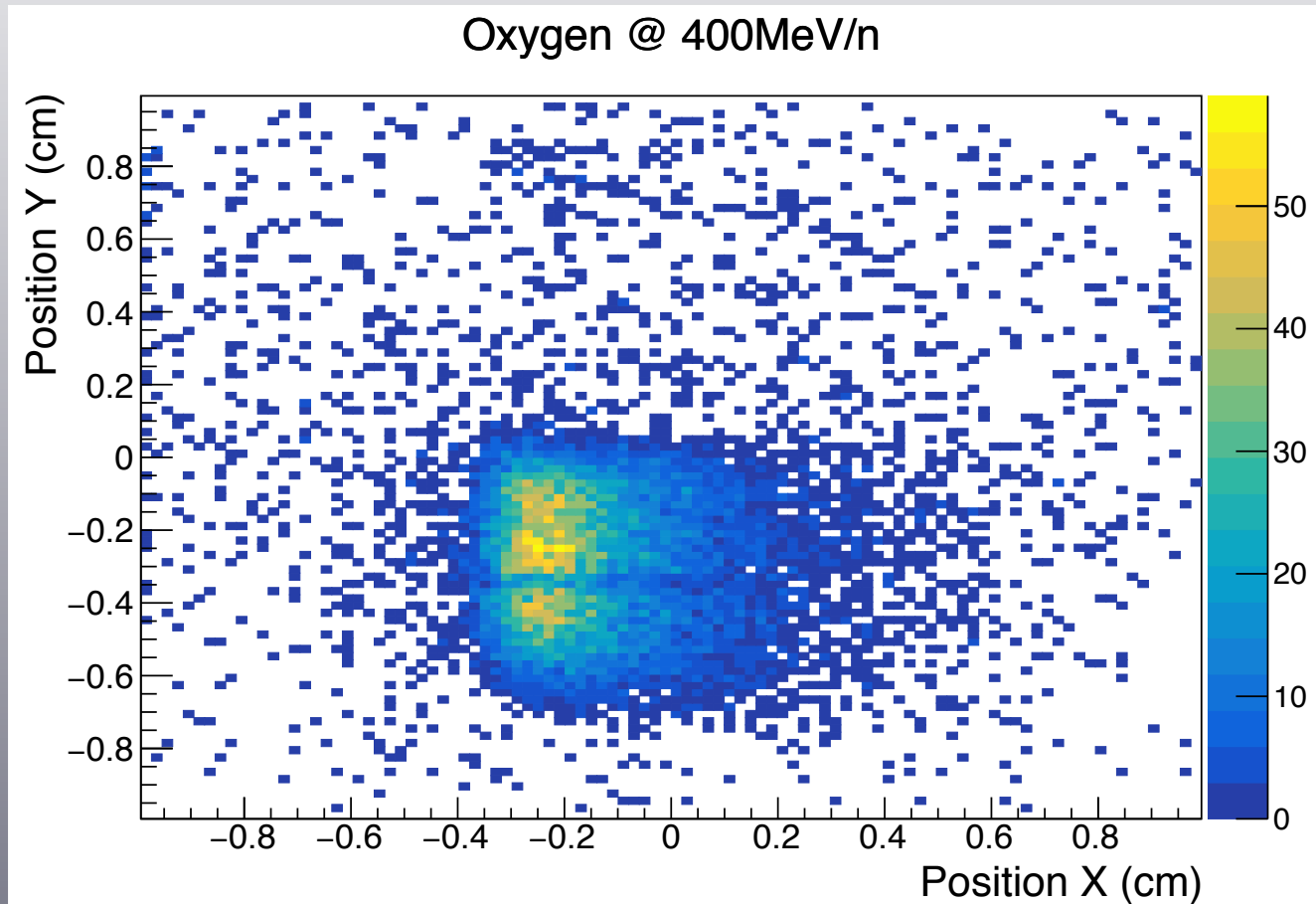
• Cluster size (sensor 4):



- Cut at 5 pixels
- See different cluster size due to noise

DAQ files (ii)

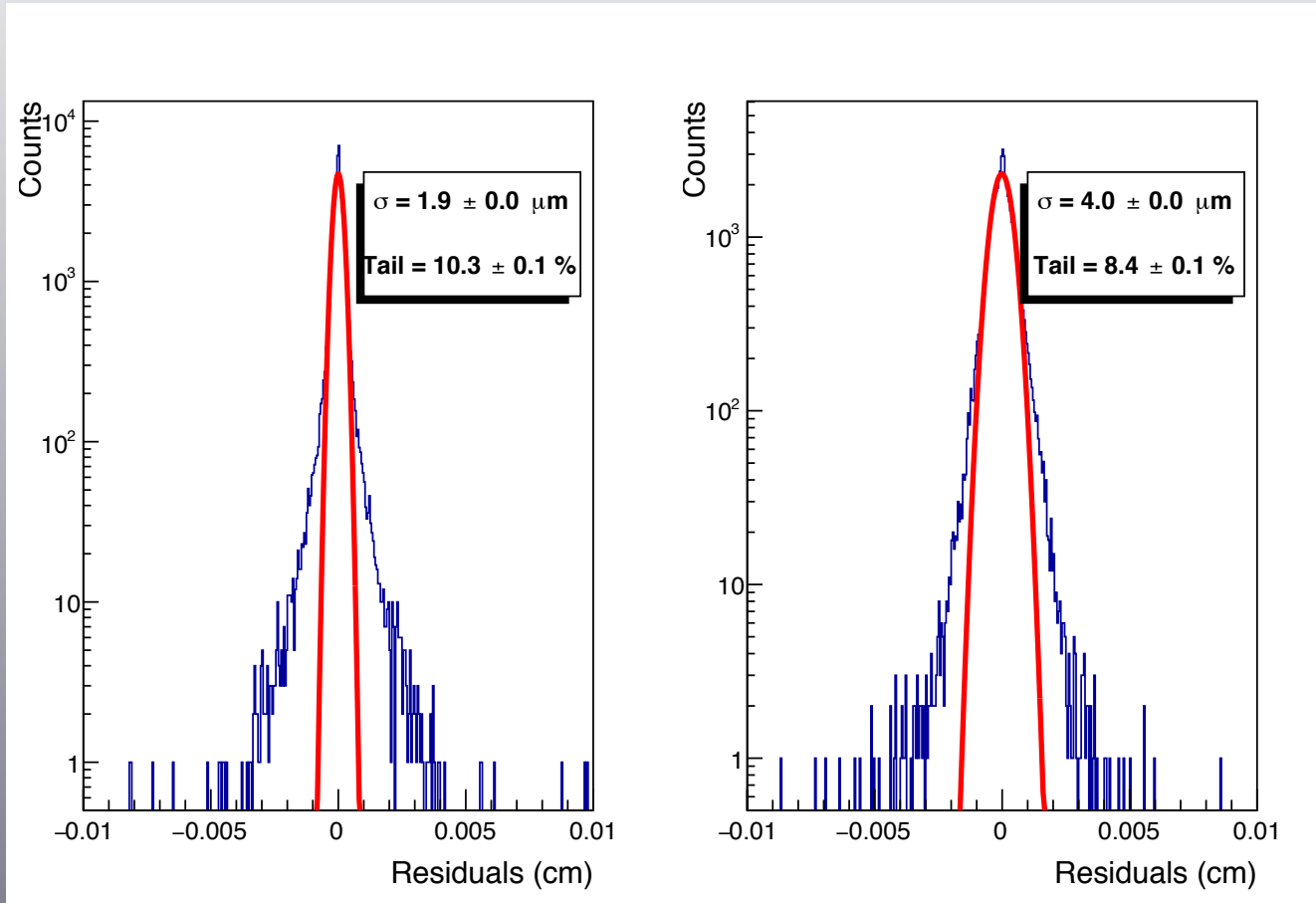
- Beam profile (sensor 4, cluster size > 4):



- The beam is not gaussian (especially in Y) with tails

DAQ files (iii)

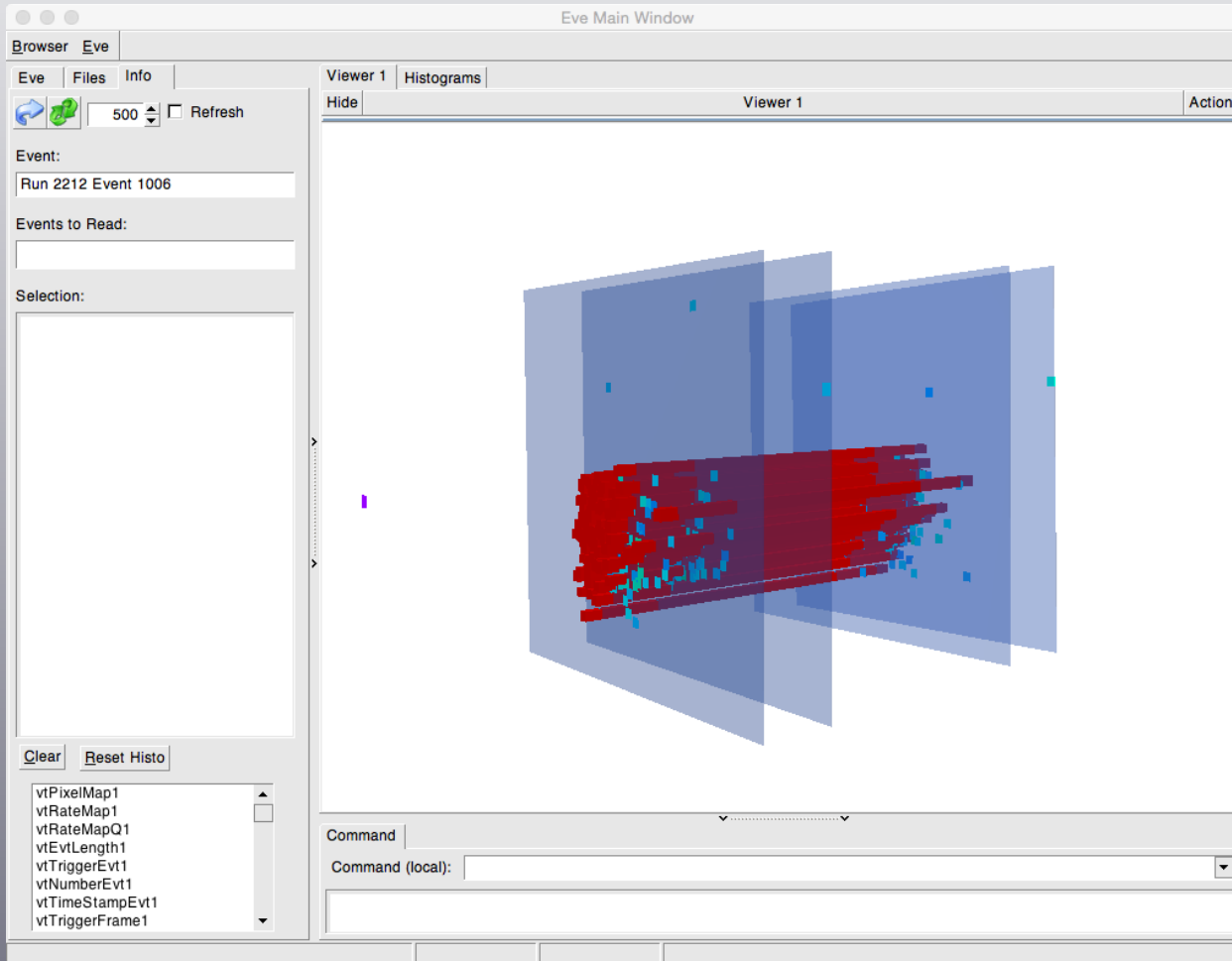
Alignment (cluster size > 30):



- Bad shaped beam
- ➡ Good alignment considering the conditions !

DAQ files (iv)

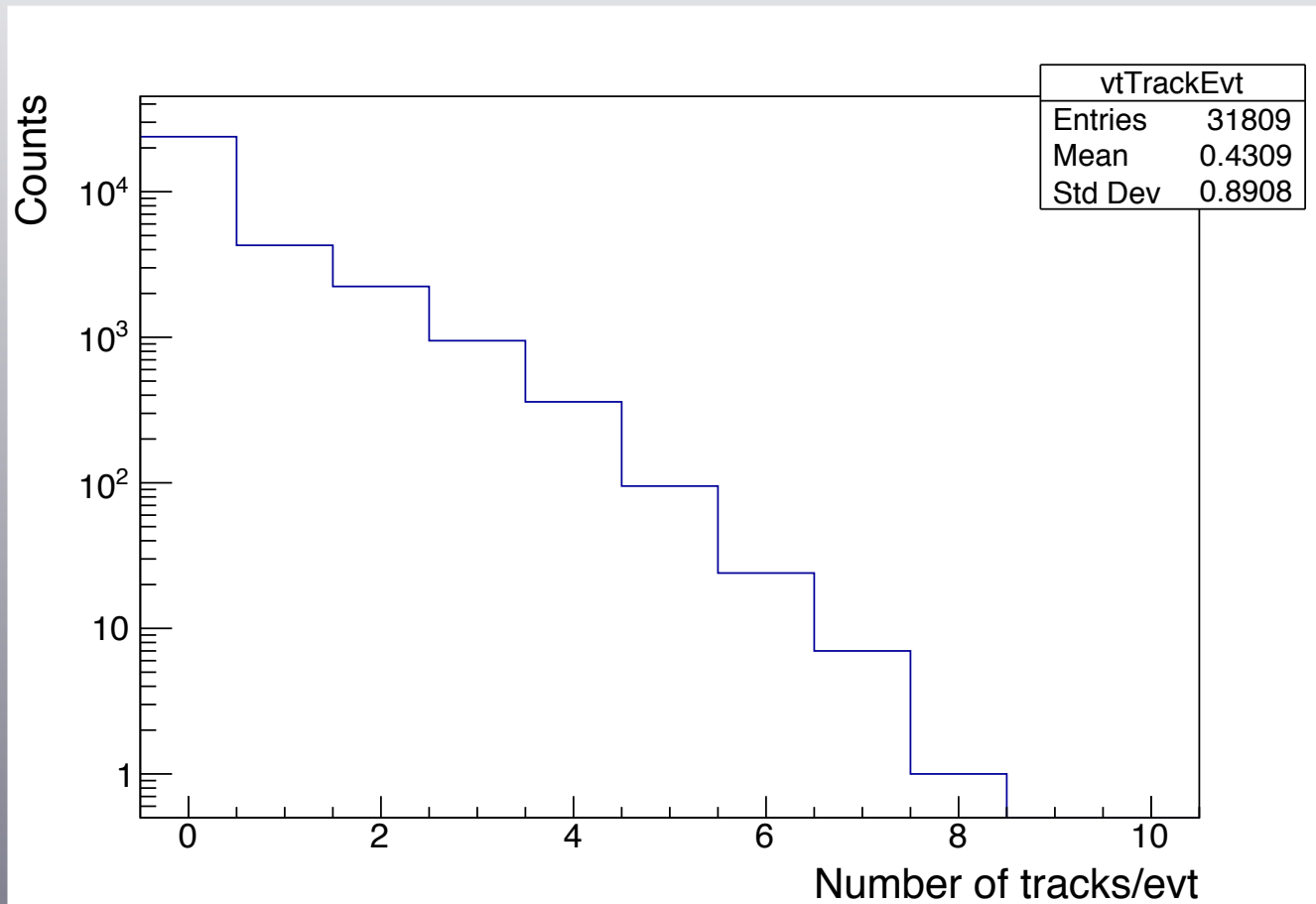
• Event display (cluster size > 25):



- Beam tracks

DAQ files (v)

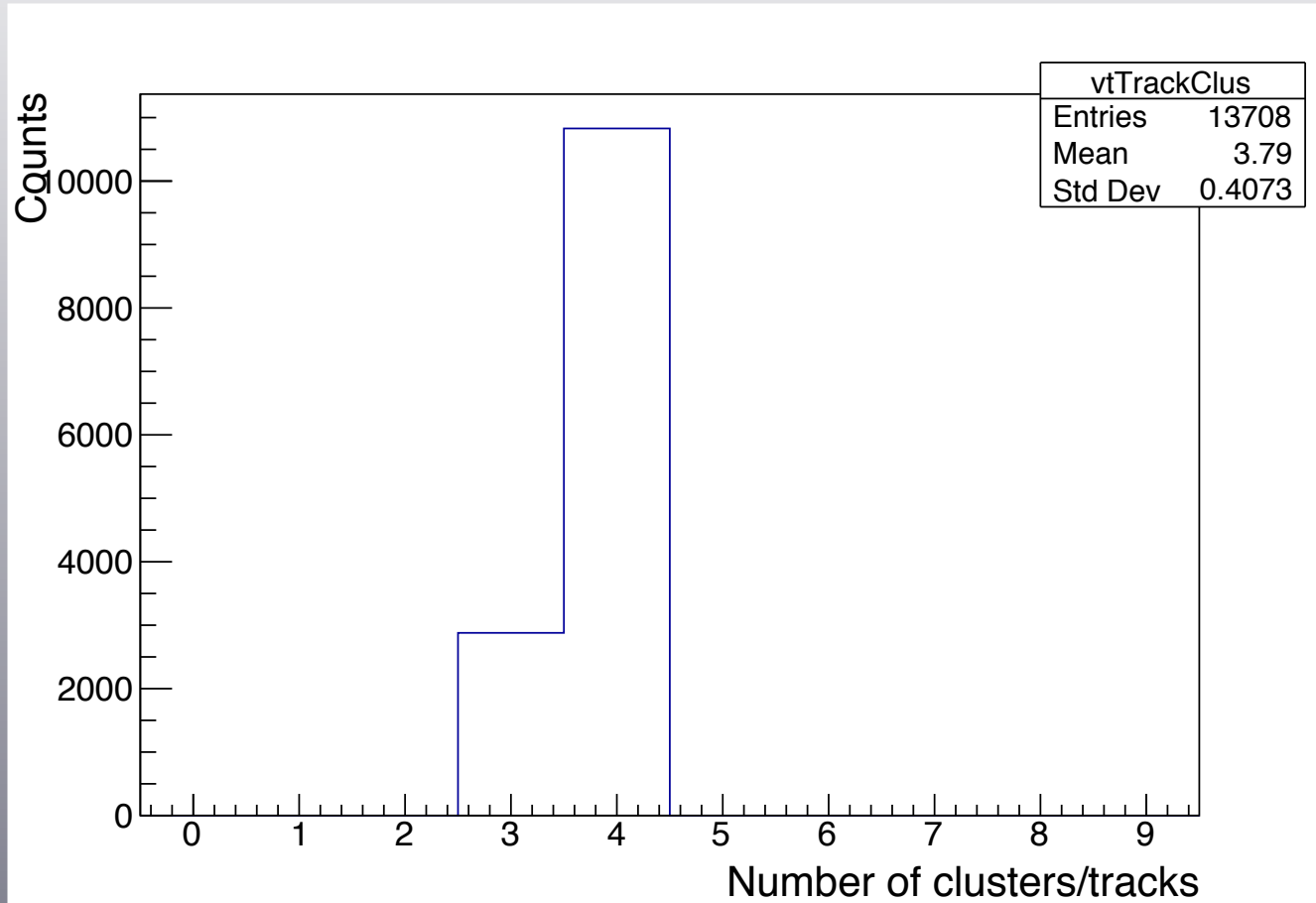
• Tracks per events (cluster size > 4):



- Track presence: $(25.0 \pm 0.2)\%$

DAQ files (vi)

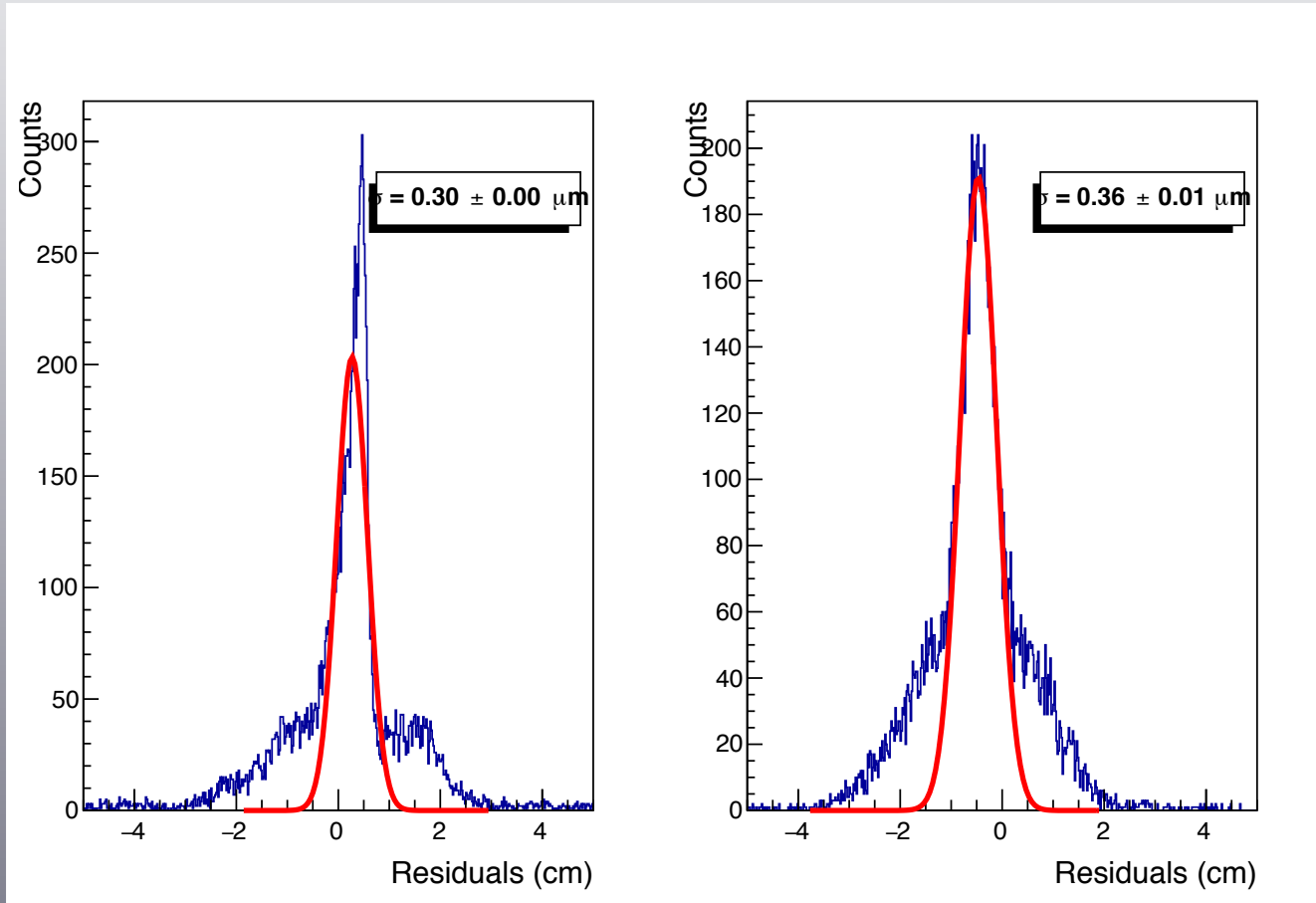
• Number of clusters per track



- Most tracks passed through the 4 sensors

DAQ files (vii)

Residuals BM/VTX



- Resolution ~ 3 mm, reflecting the beam
- ➔ No correlation btw BM & VTX !

Conclusions

• Run 2211

- Tracks until the ends of DAQ file as well as in standalone mode
- Track presence ~25 % with cut on cluster size > 4
- Losing half of the events due to resynchronization
- Alignment better than < 5 μm (seems stable over the 3 days of data taking)
- Pb with the reset for trigger number < 500
- No correlation btw BM/VTX (cf. Yun's talk)

(debugging still difficult cos very slow, 1h per 10000 evts !)