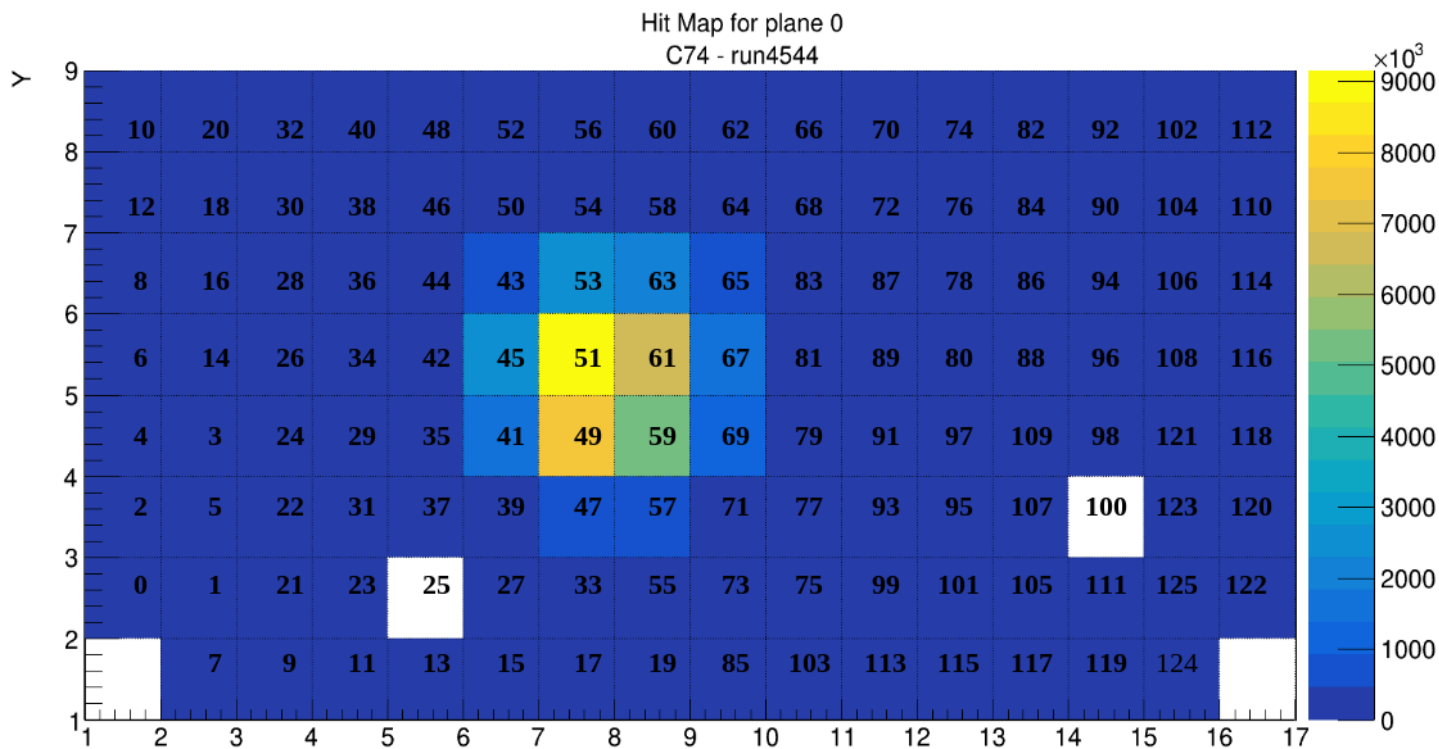


# **TB22 data analysis**

## **Homogeneity study for Si and GaAs sensors**

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Institute of Space Science, Bucharest

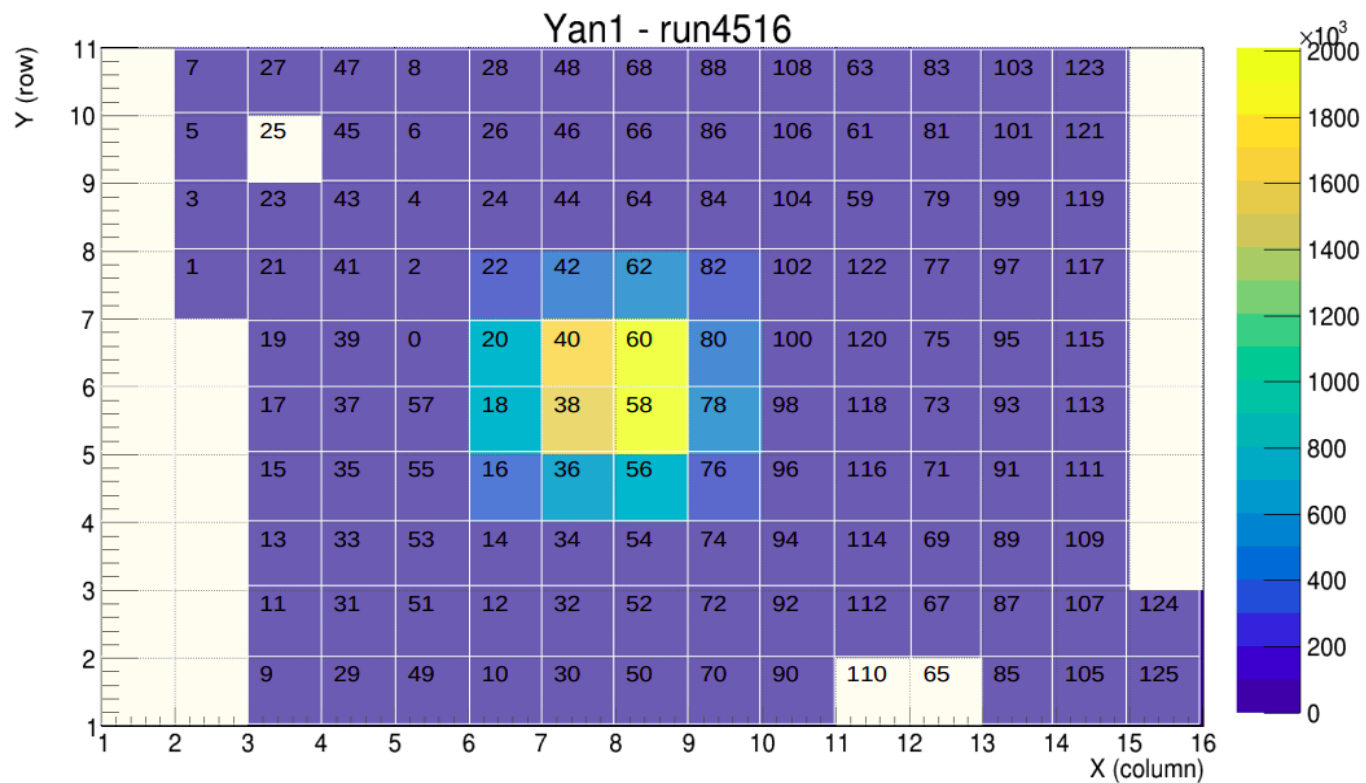


For Si sensors, the pad number is redefined as follows:

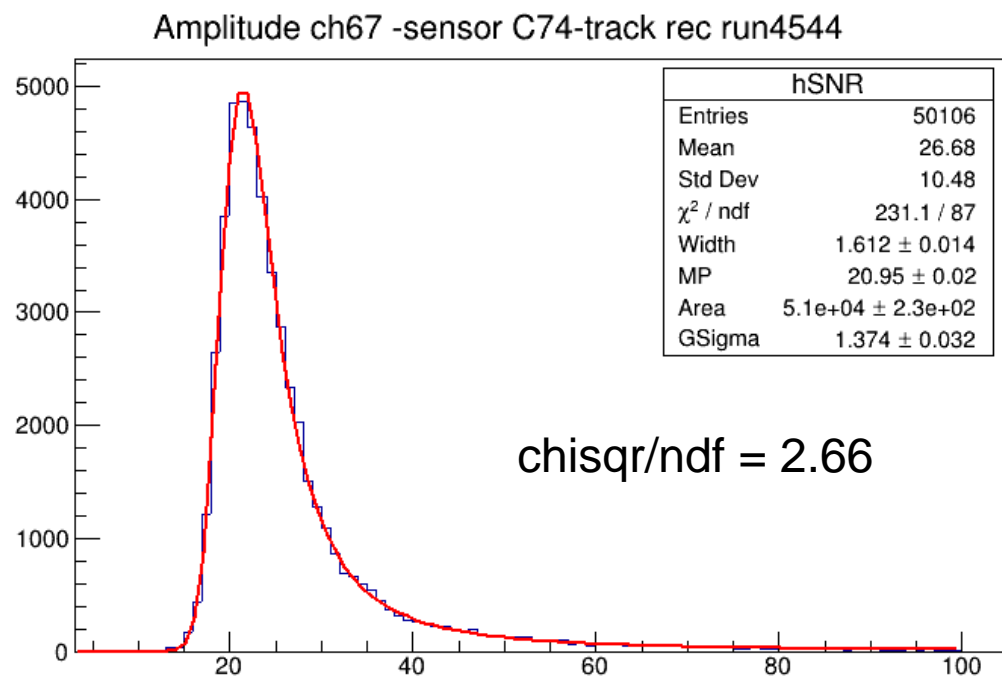
$$X + 16 \times (Y - 1)$$

For GaAs sensors, the pad number is redefined as follows:

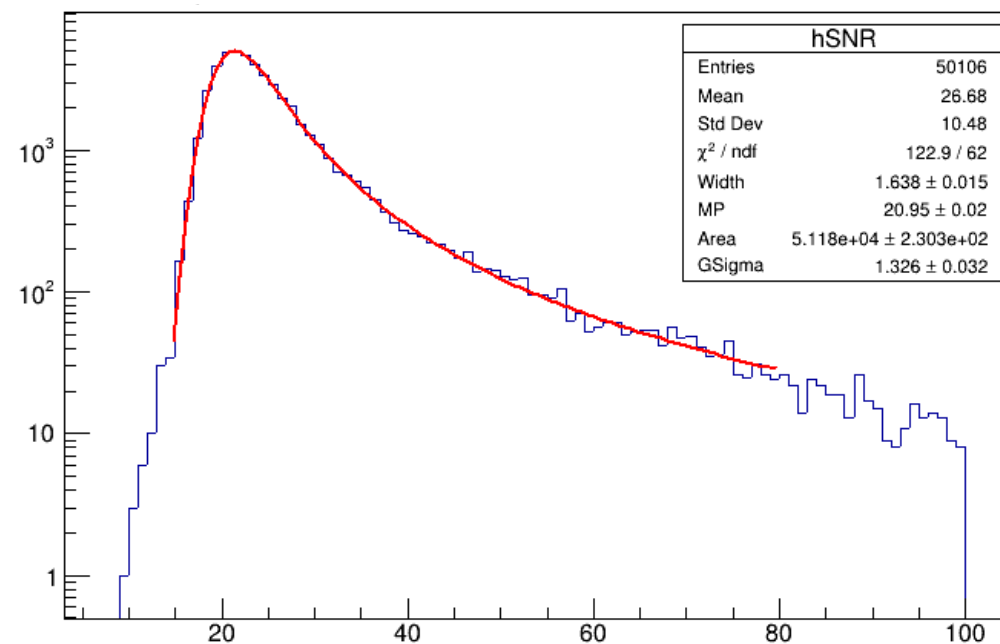
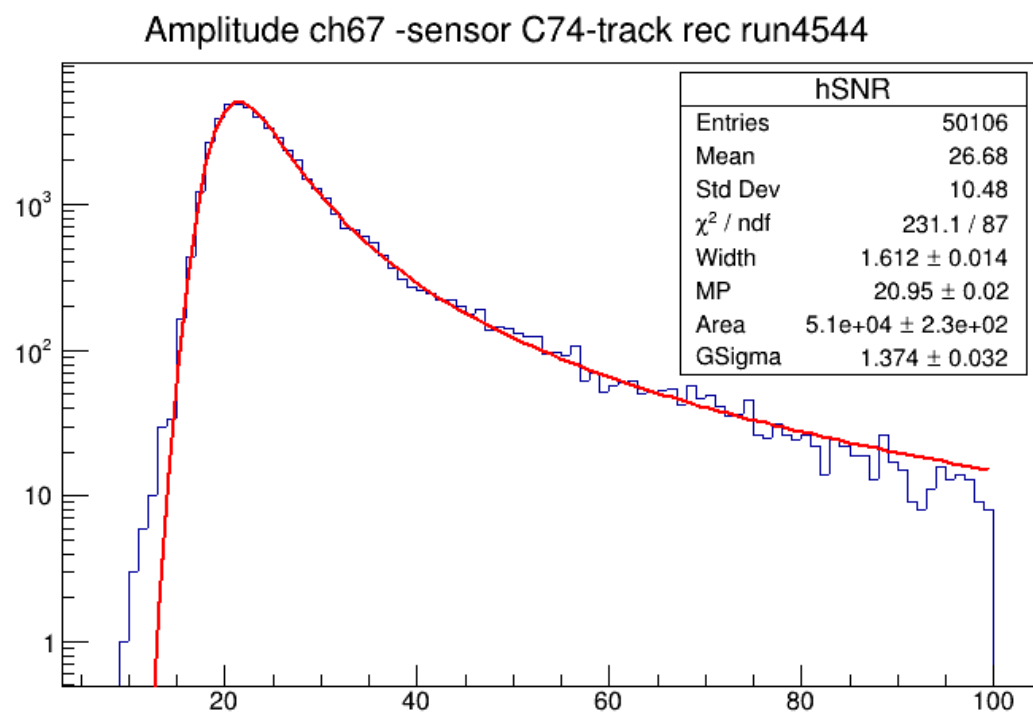
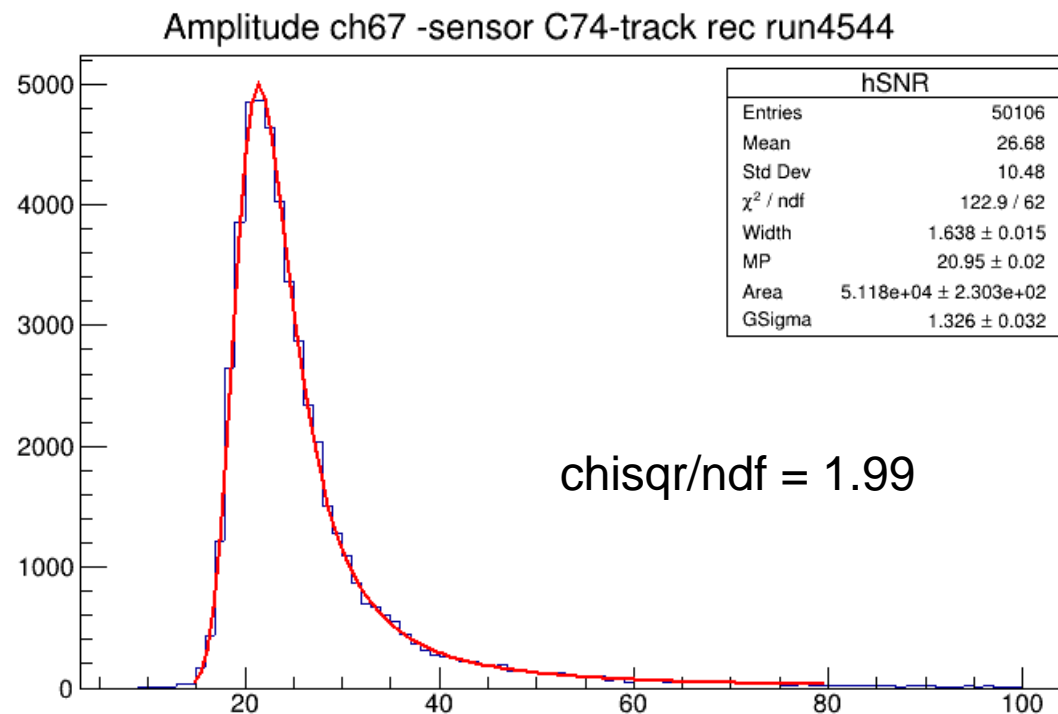
$$X + 15 \times (Y - 1)$$



Fit window [ADC]: 0 – 100;



14 – 80;

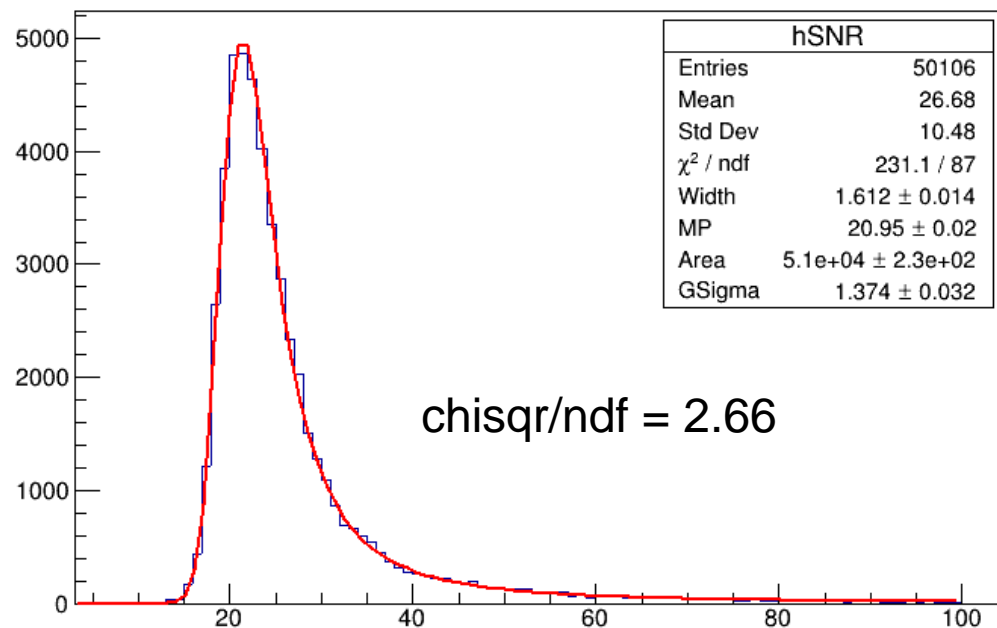


Fit window [ADC]:

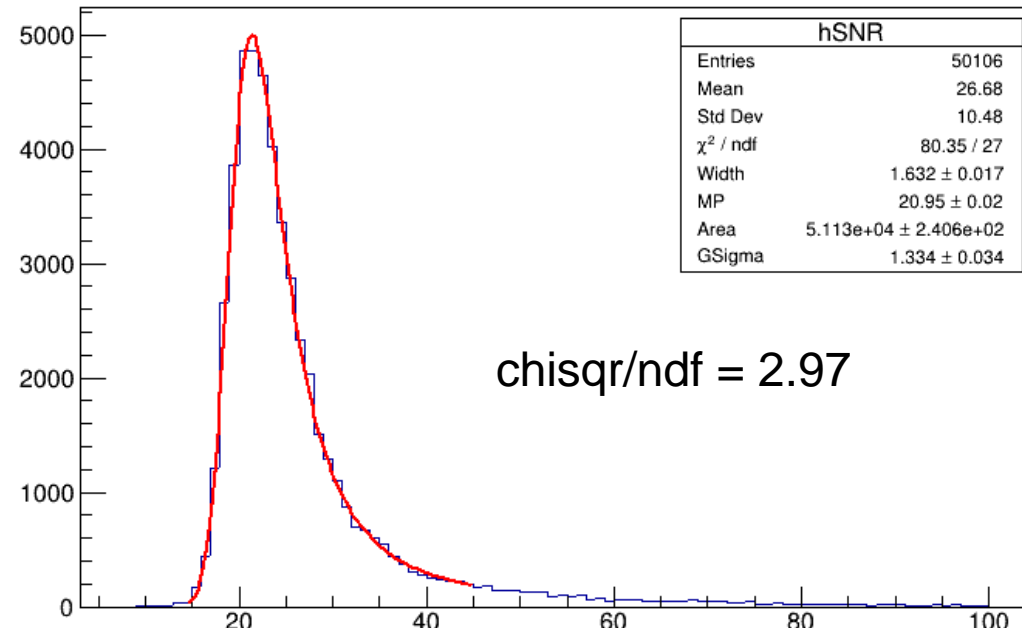
0 – 100;

14 – 45;

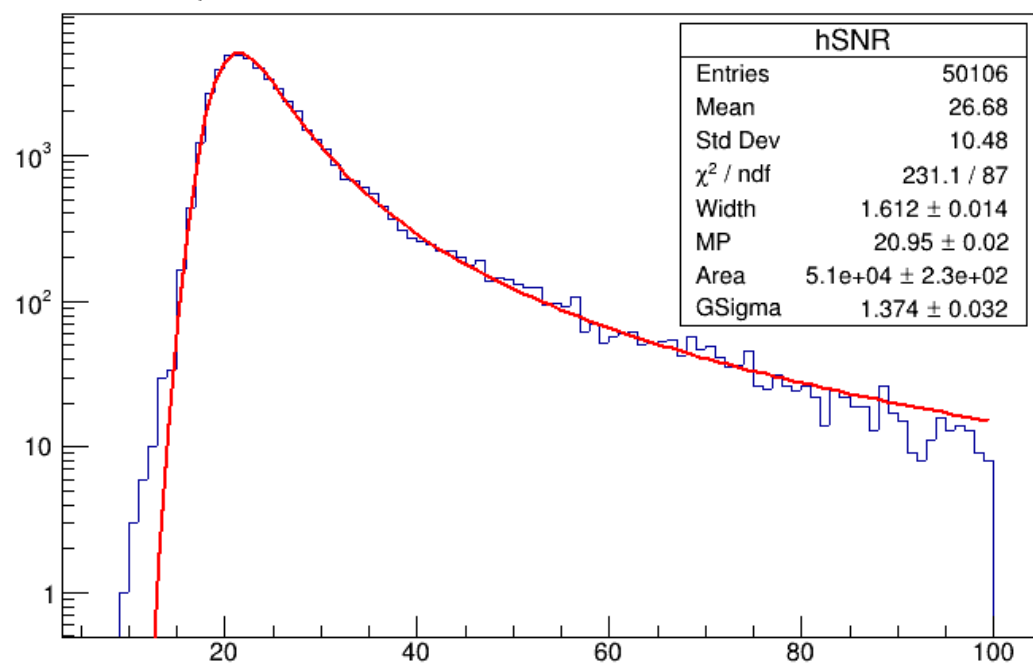
Amplitude ch67 -sensor C74-track rec run4544



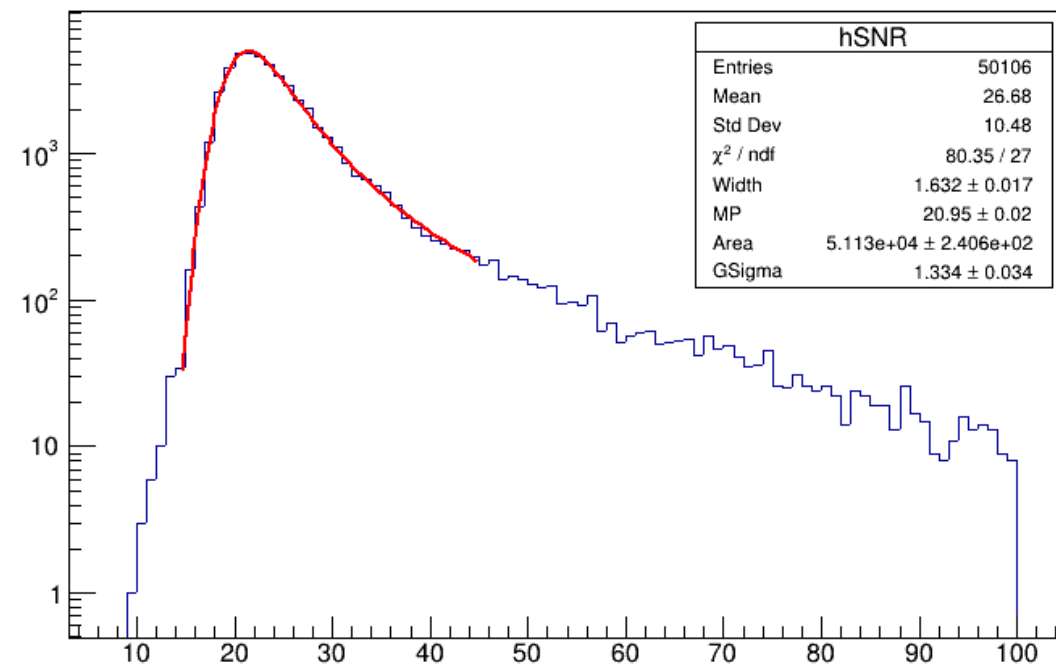
Amplitude ch67 -sensor C74-track rec run4544



Amplitude ch67 -sensor C74-track rec run4544



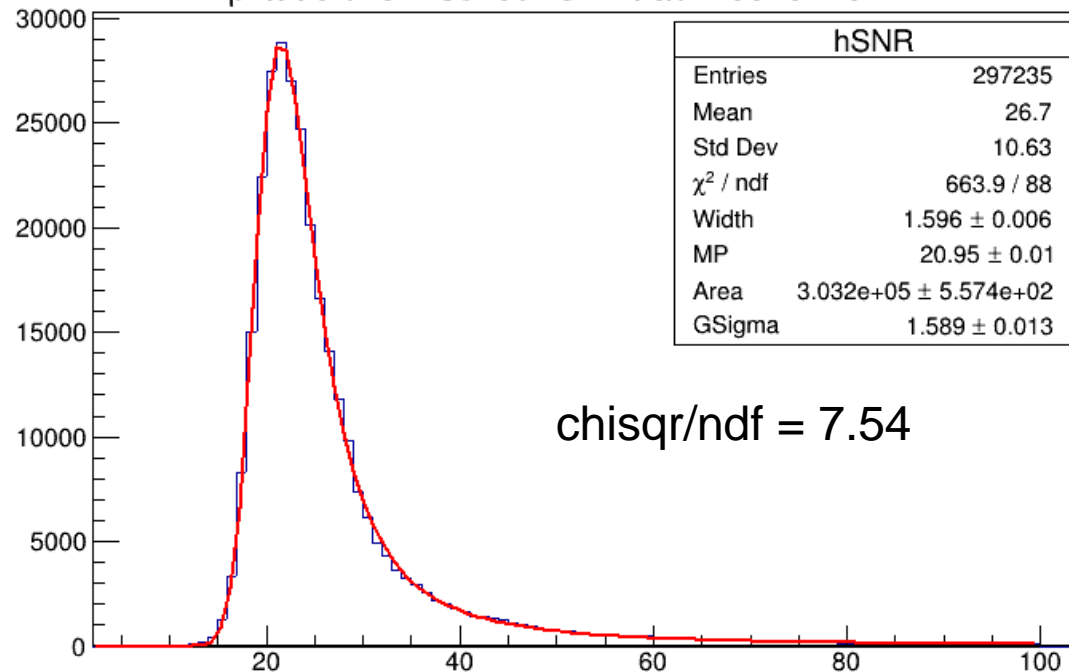
Amplitude ch67 -sensor C74-track rec run4544



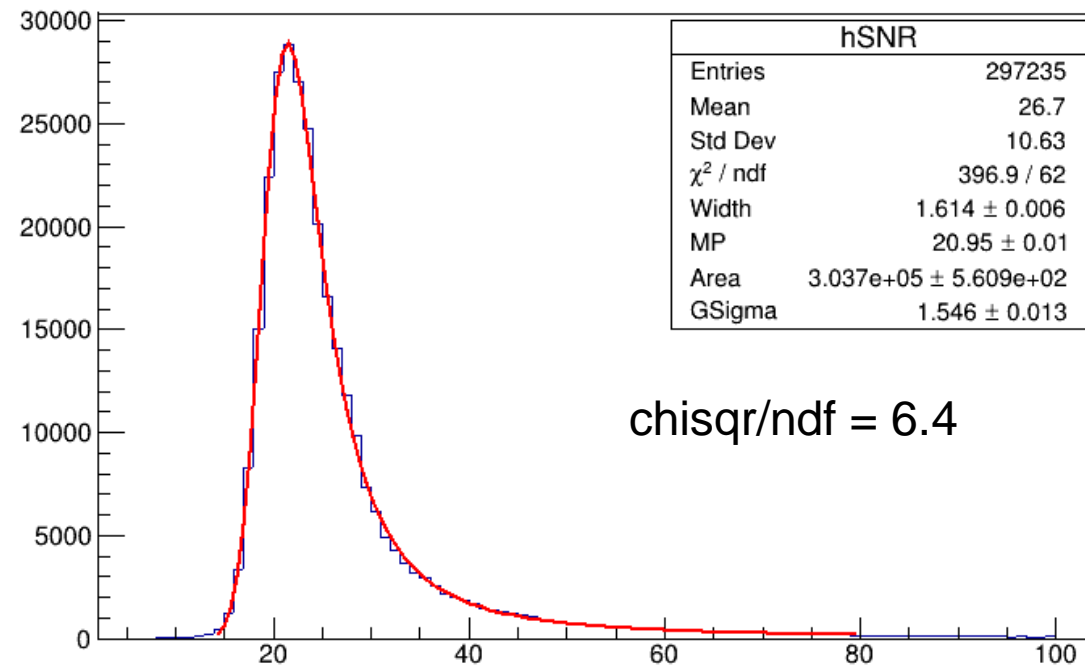
Fit windows [ADC]: 0 – 100;

14 – 80;

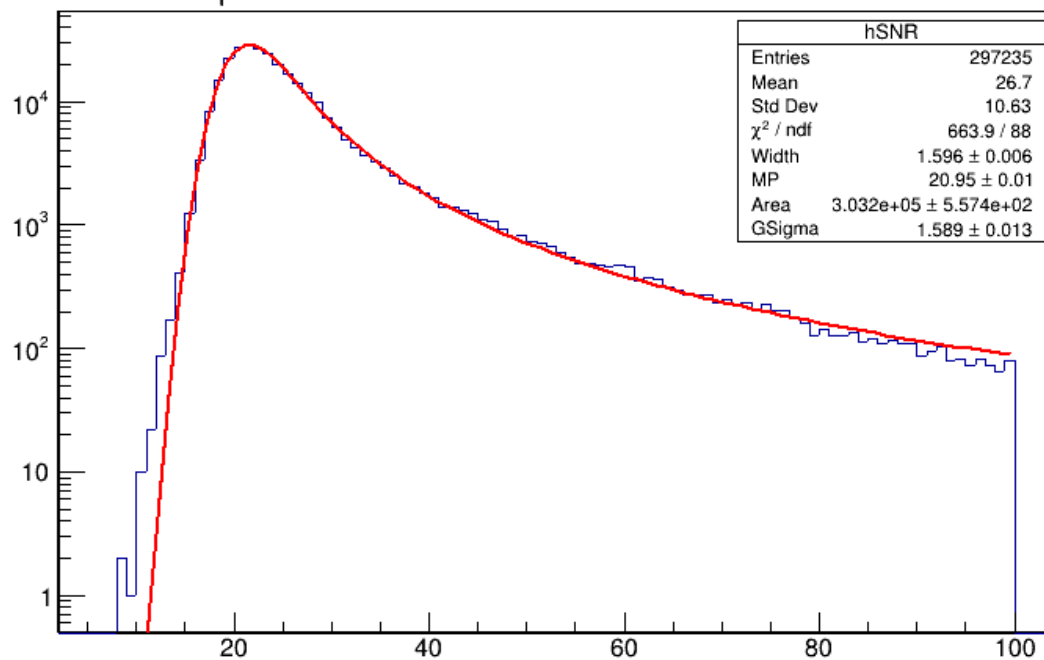
Amplitude ch51 -sensor C74-track rec run4544



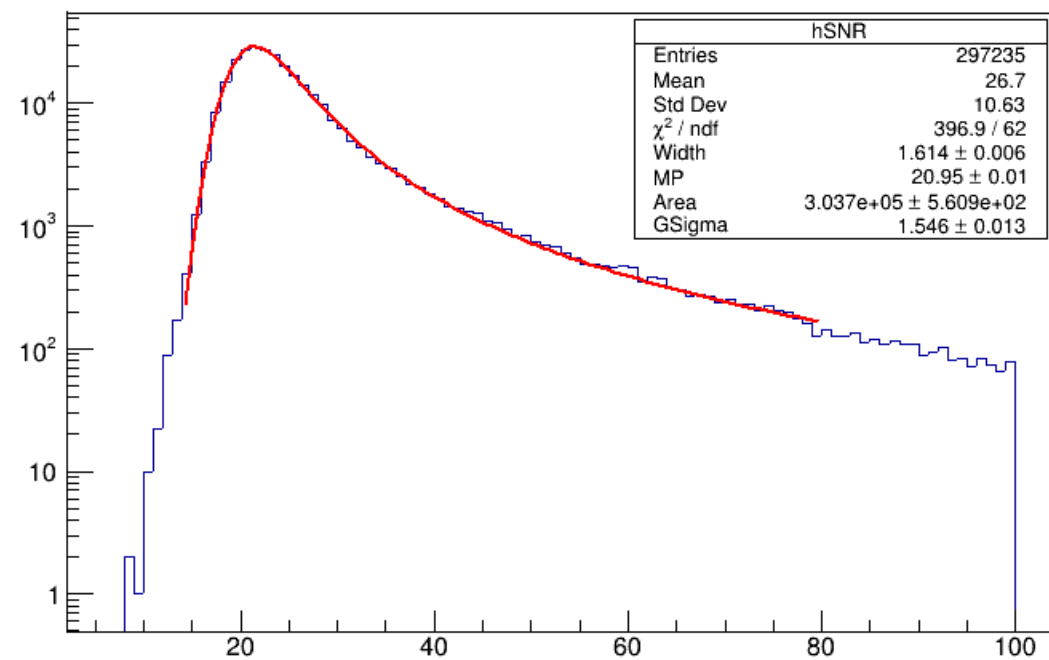
Amplitude ch51 -sensor C74-track rec run4544



Amplitude ch51 -sensor C74-track rec run4544

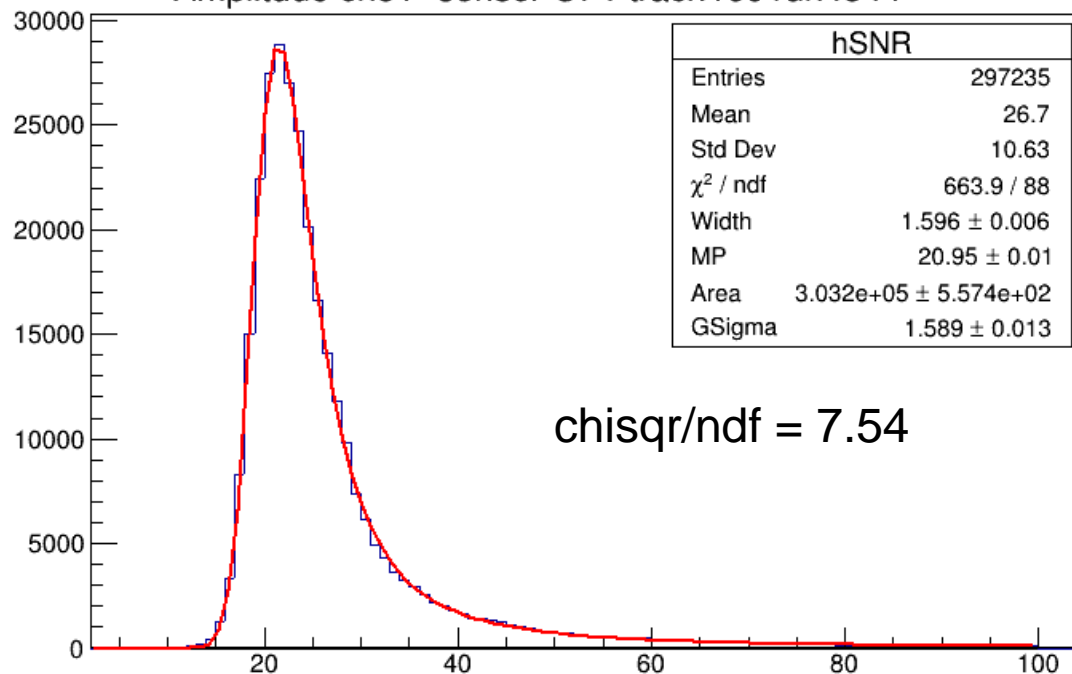


Amplitude ch51 -sensor C74-track rec run4544



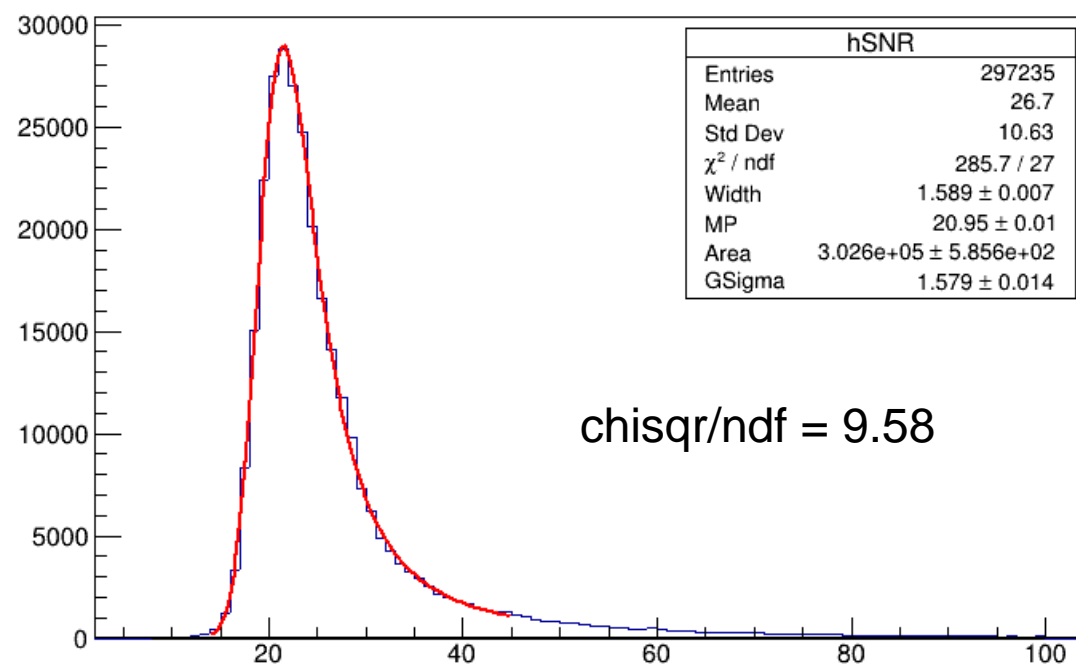
Fit windows [ADC]: 0 – 100;

Amplitude ch51 -sensor C74-track rec run4544

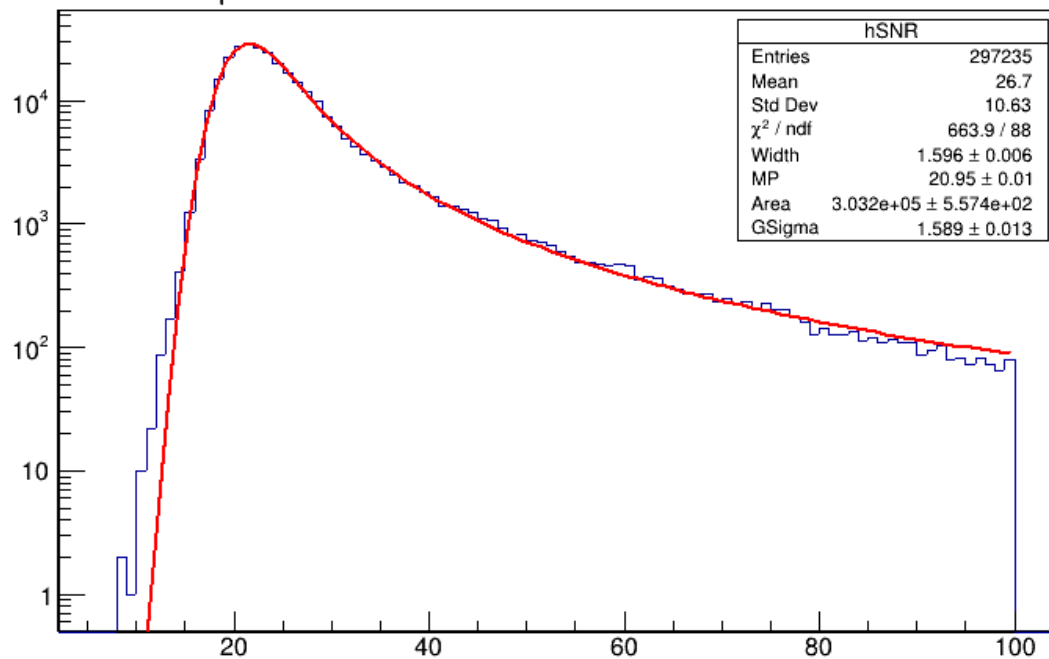


14 – 45;

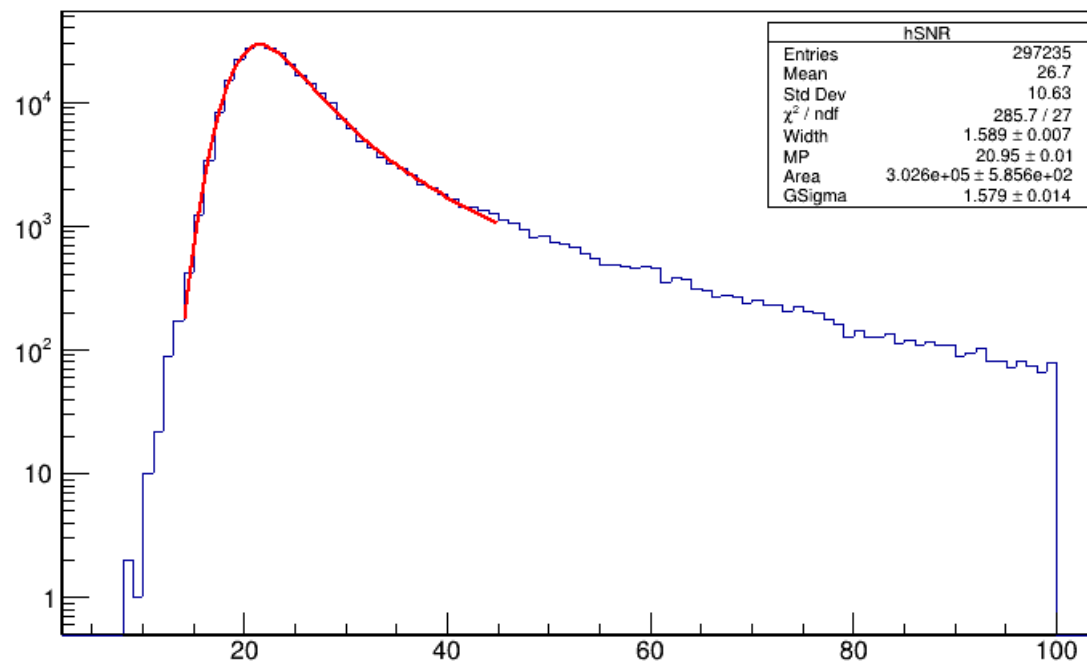
Amplitude ch51 -sensor C74-track rec run4544



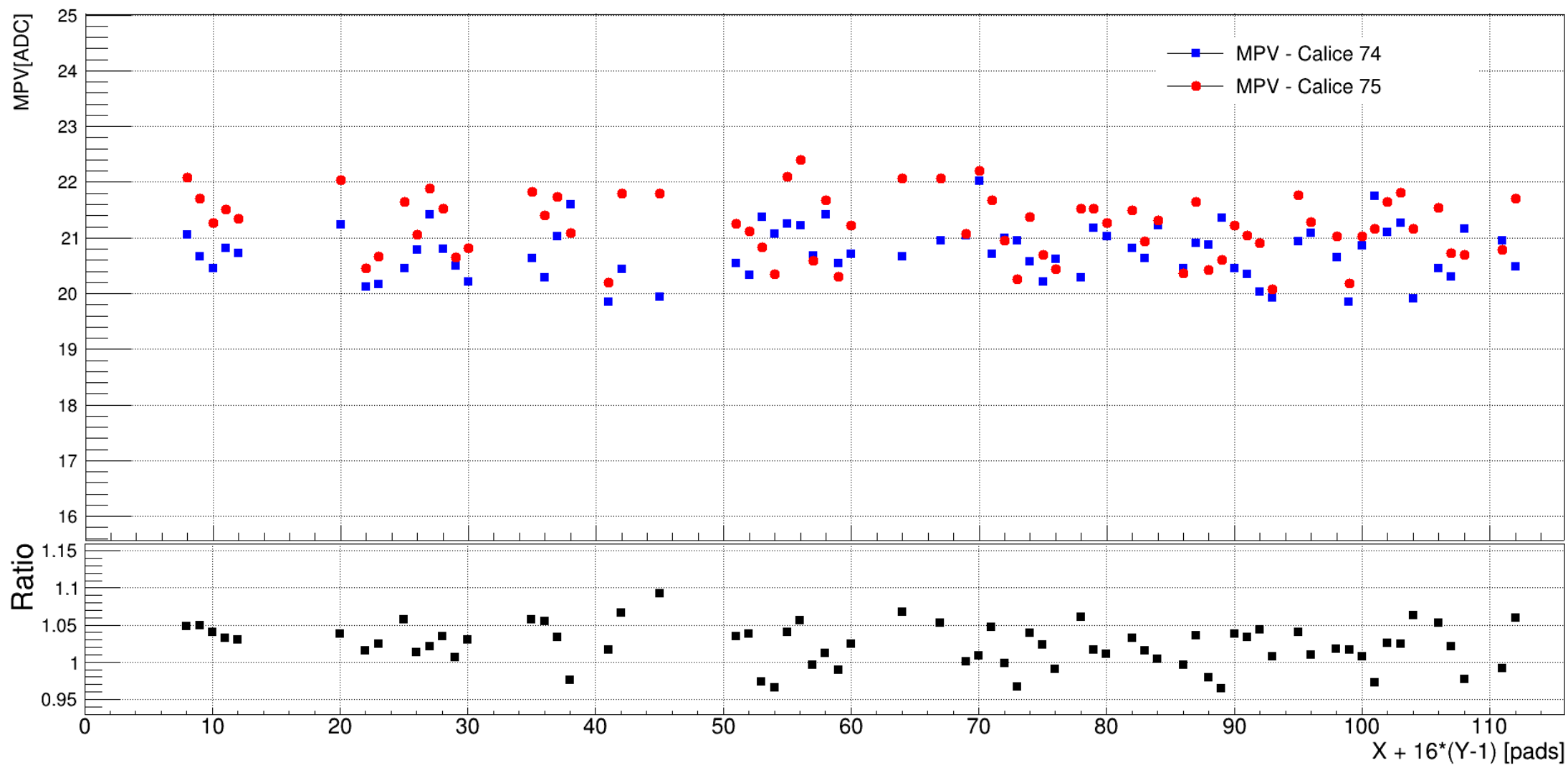
Amplitude ch51 -sensor C74-track rec run4544



Amplitude ch51 -sensor C74-track rec run4544

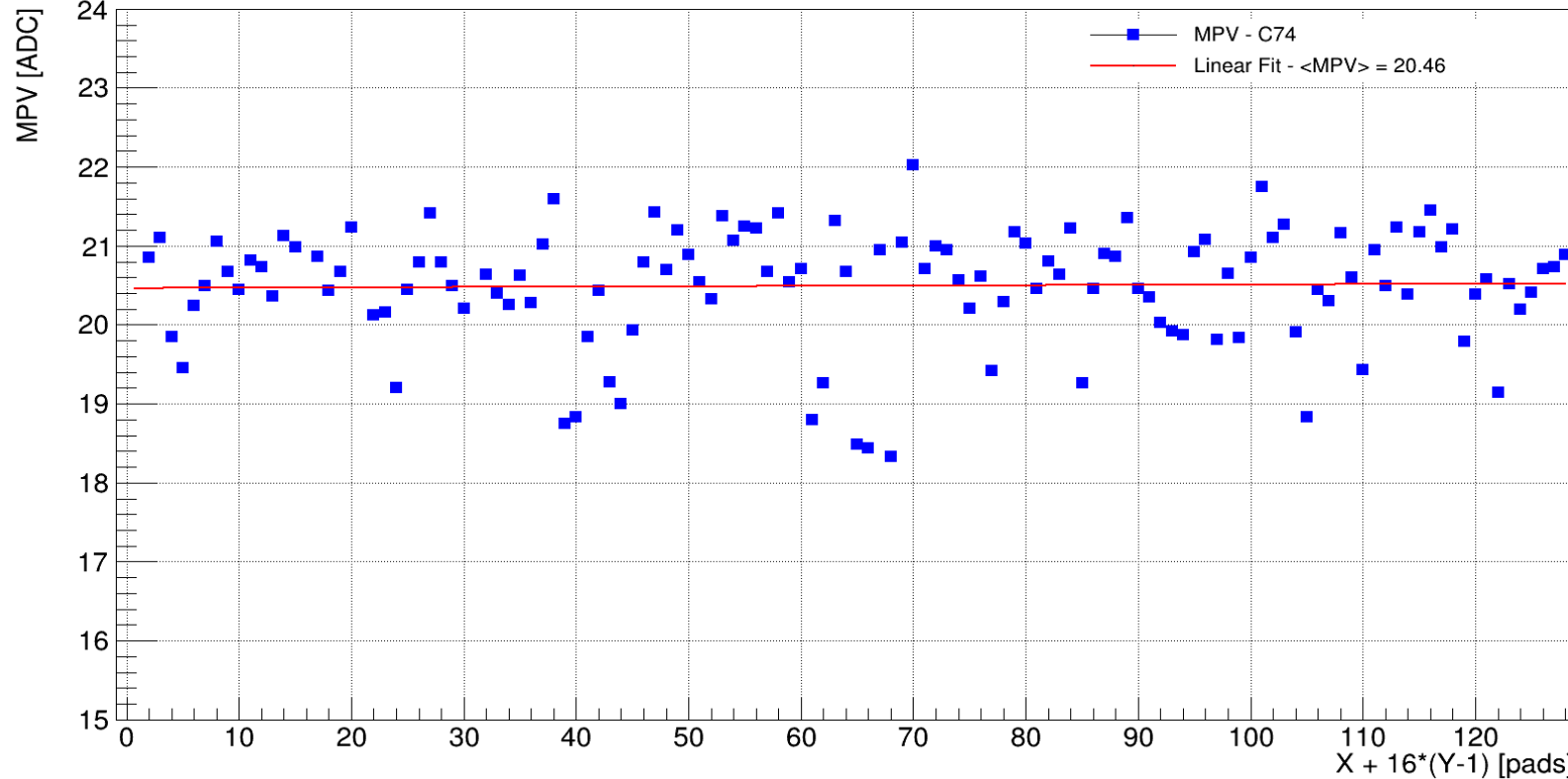
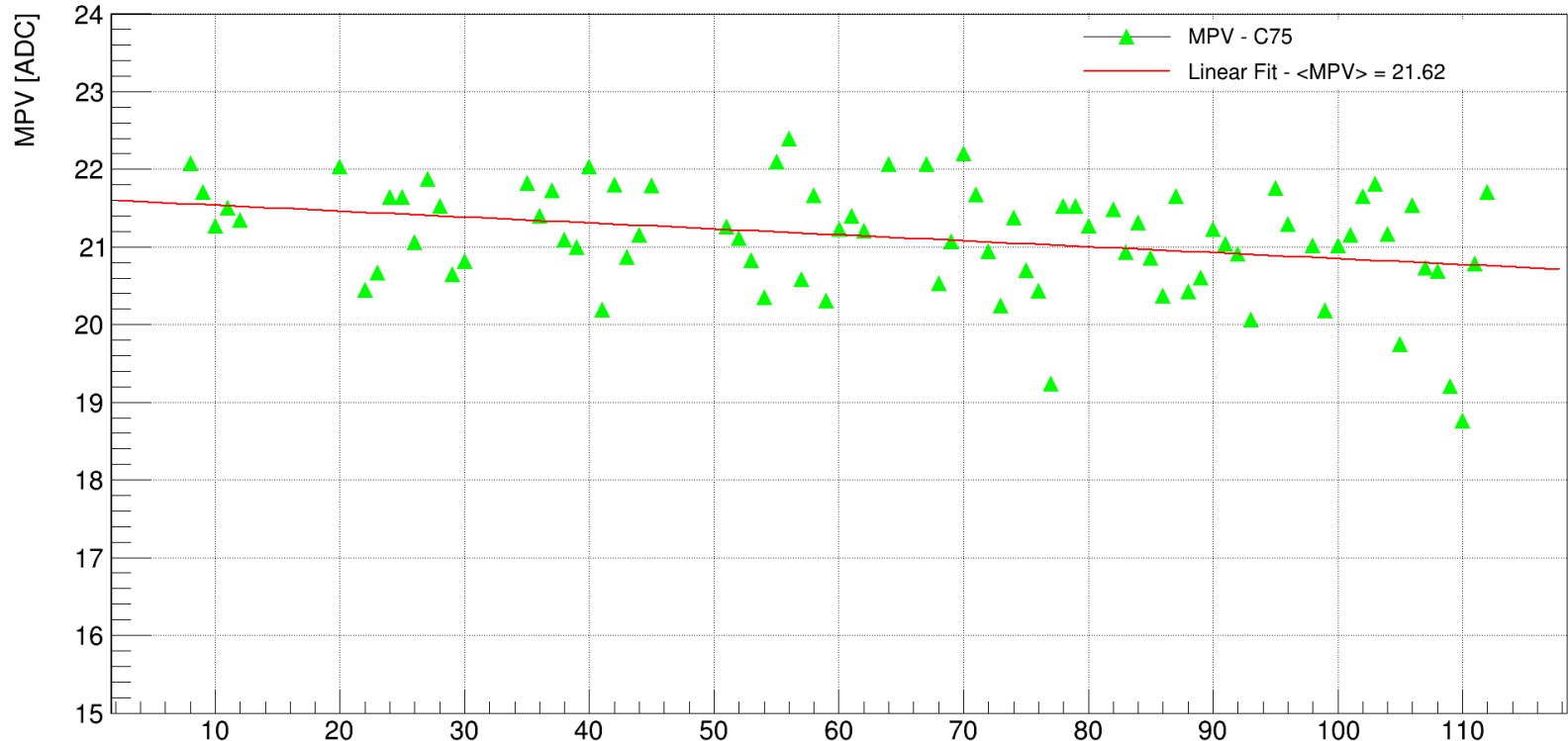


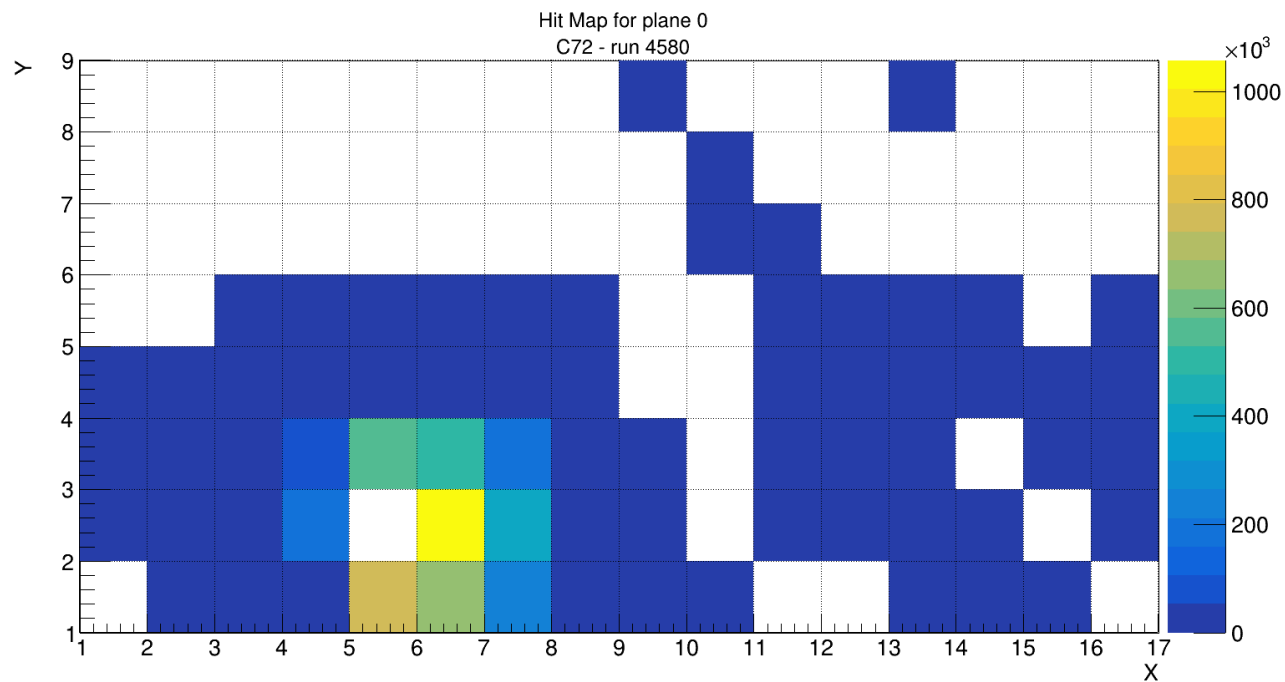
MPV of signal distribution for C74 and C75 Si sensors at 5 GeV electron beam.  
Bad channels have been removed.



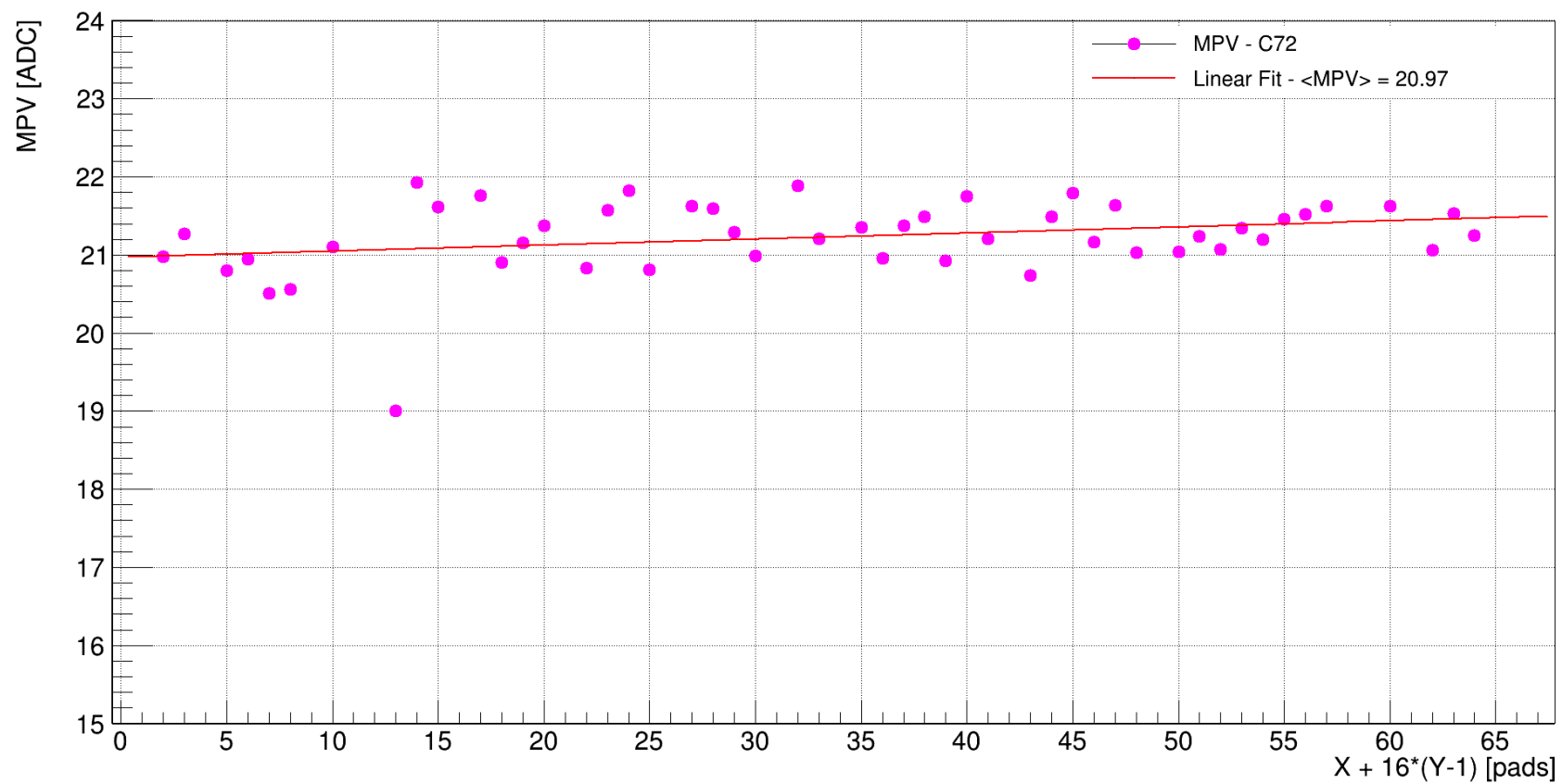
MPV of signal distribution  
for C74 and C74 Si sensors  
at 5 GeV electron beam.  
Bad channels have been  
removed.

$$\frac{\langle MPV \rangle_{C75}}{\langle MPV \rangle_{C74}} = 1,06$$

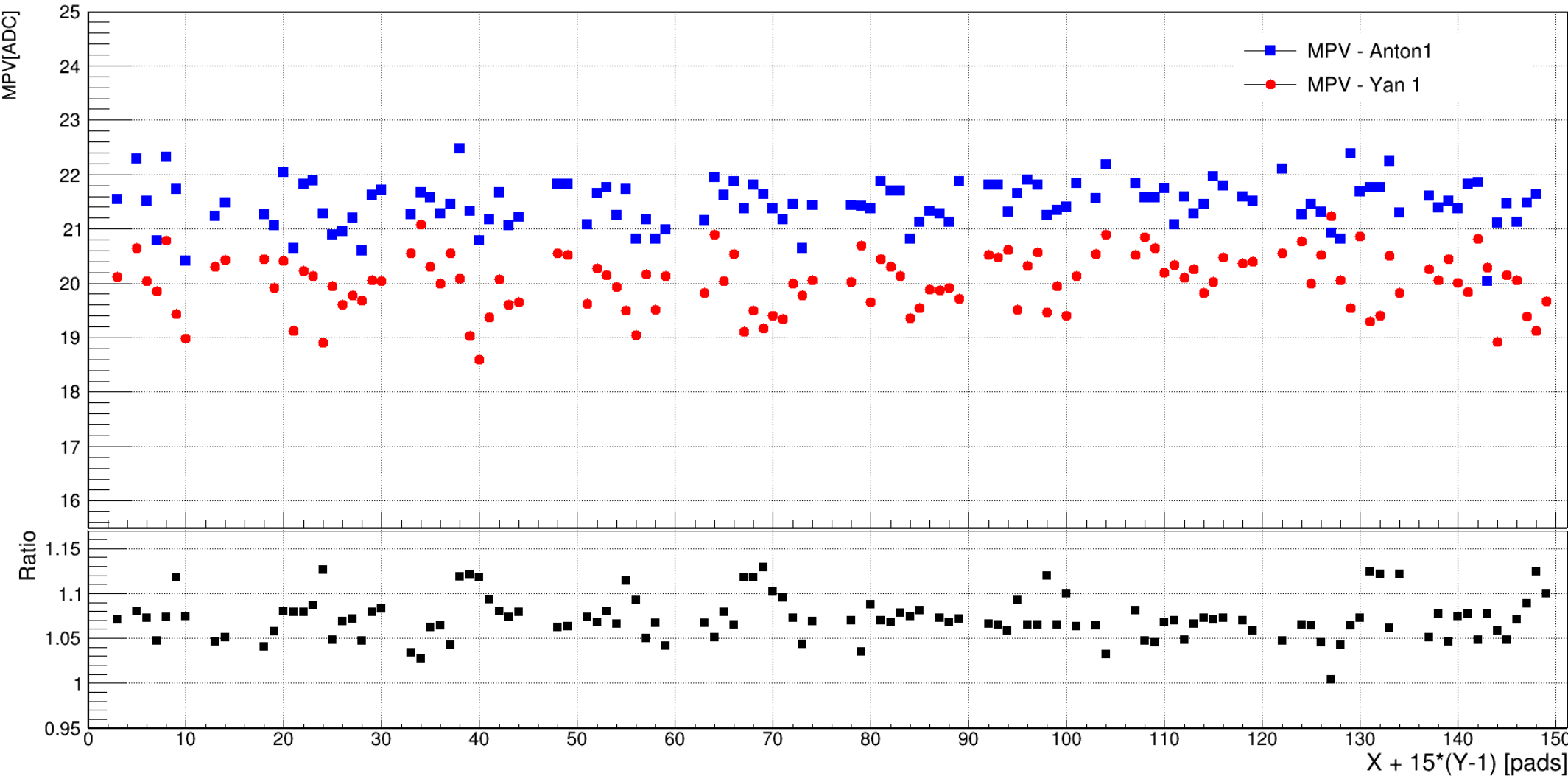




MPV of signal distribution for C72 Si sensors at 5 GeV electron beam.  
Bad channels have been removed.

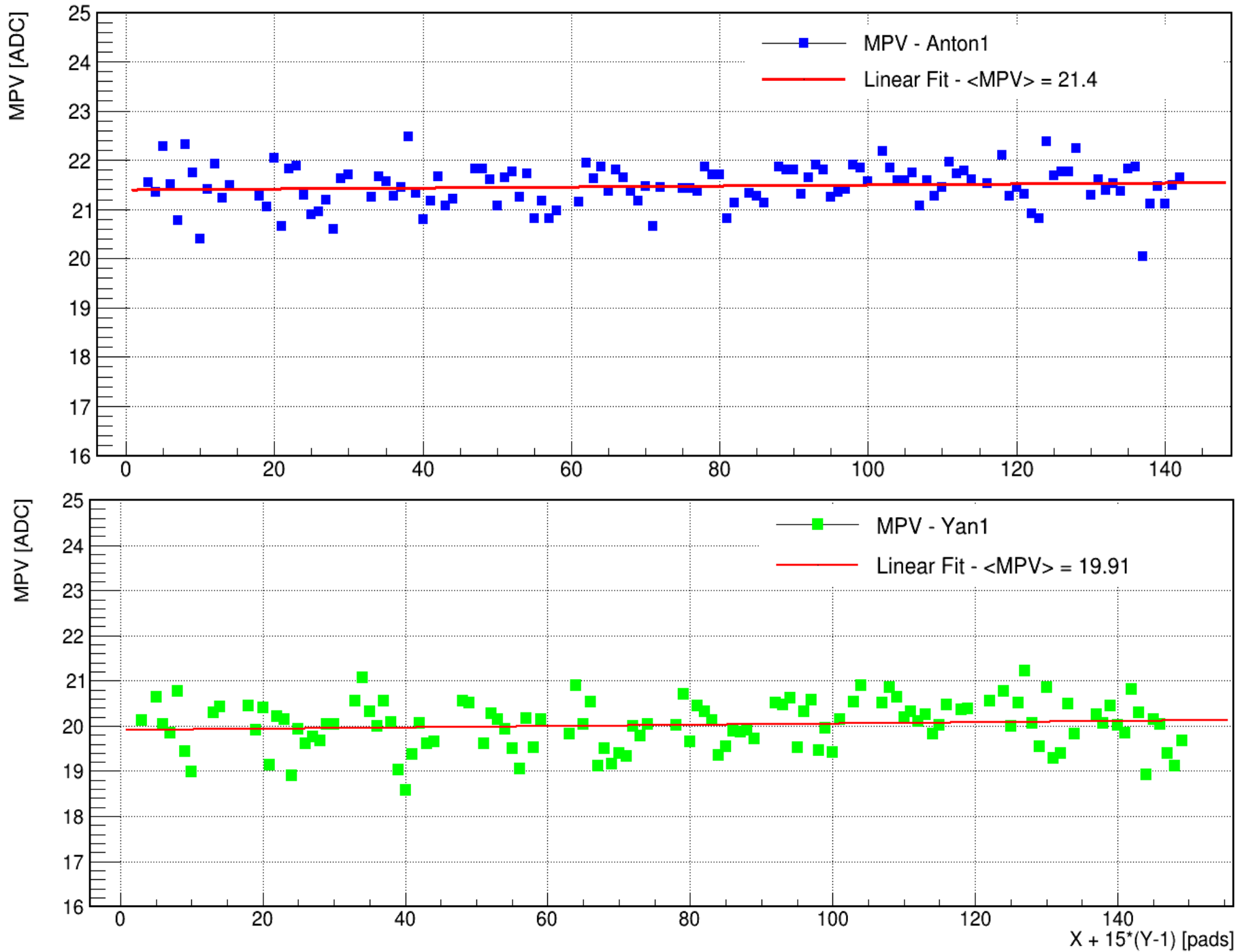


MPV of signal distribution for Anton1 and Yan1 GaAs sensors at 5 GeV electron beam



MPVs of signal distribution for Anton1 and Yan1 GaAs sensors at 5 GeV electron beam.  
Bad channels have been removed.

$$\frac{\langle MPV \rangle_{Anton1}}{\langle MPV \rangle_{Yan1}} = 1,08$$



# Conclusions:

- About Silicon sensors:

1. **Ratio between C74 signal and C75 signal:** less than 10% after removing bad channels.

2. **Average signal values:**

- The average signal value from the C74 sensor is **20.46**;
- The average signal value from the C75 sensor is **21.60**.

- About GaAs sensors:

1. **Ratio between signals:** The ratio is approximately 5% to 15%.

2. **Average signal values:**

- The average signal value from the Anton1 sensor is **21.40**;
- The average signal value from the Yan1 sensor is **19.91**.