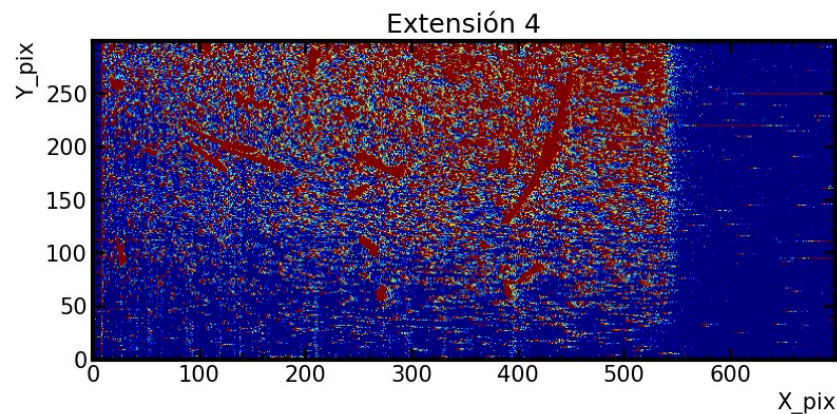
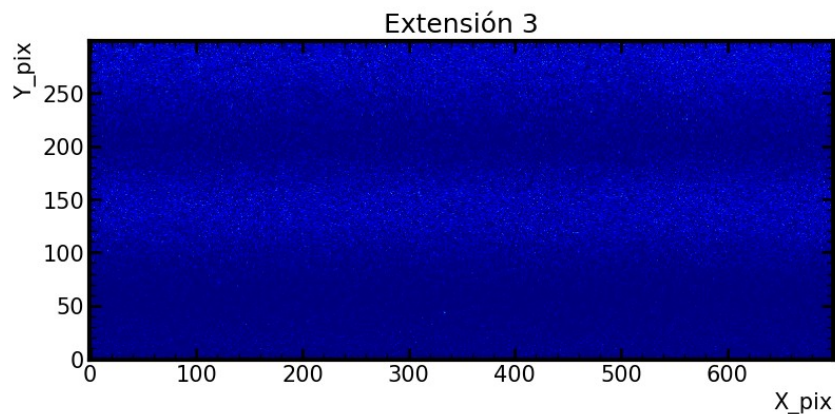
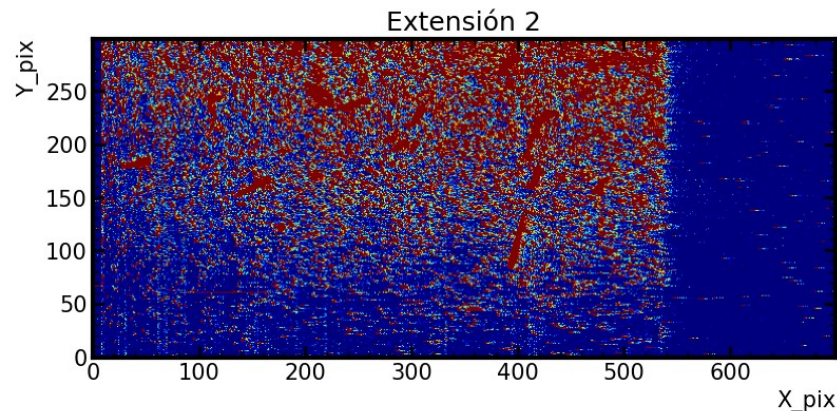
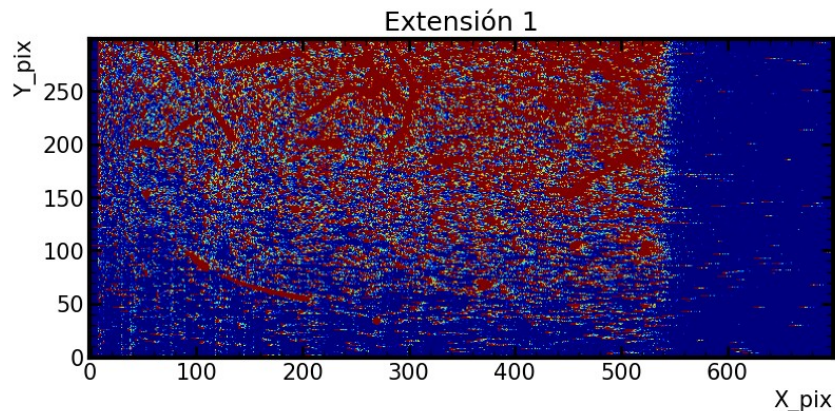
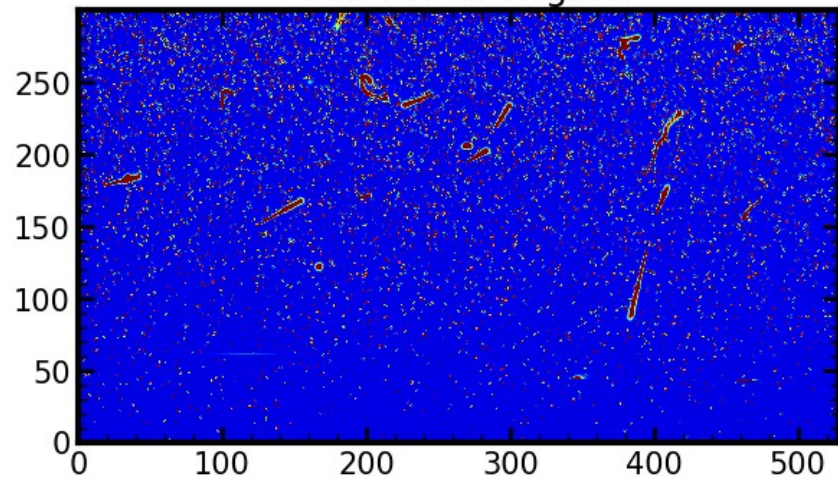


Espectro de Fe-55

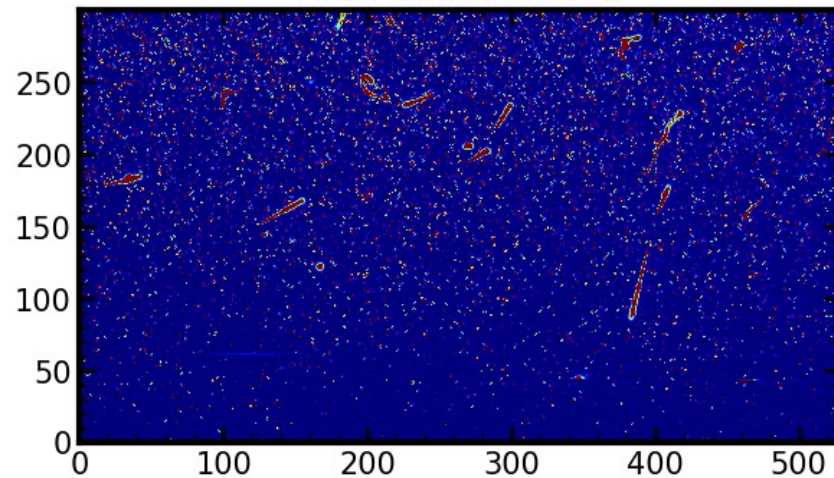
Se muestra una imagen típica con la configuración actual a la cual se les aplica la limpieza usual que consiste en restarle la media del valor del renglon del overscan



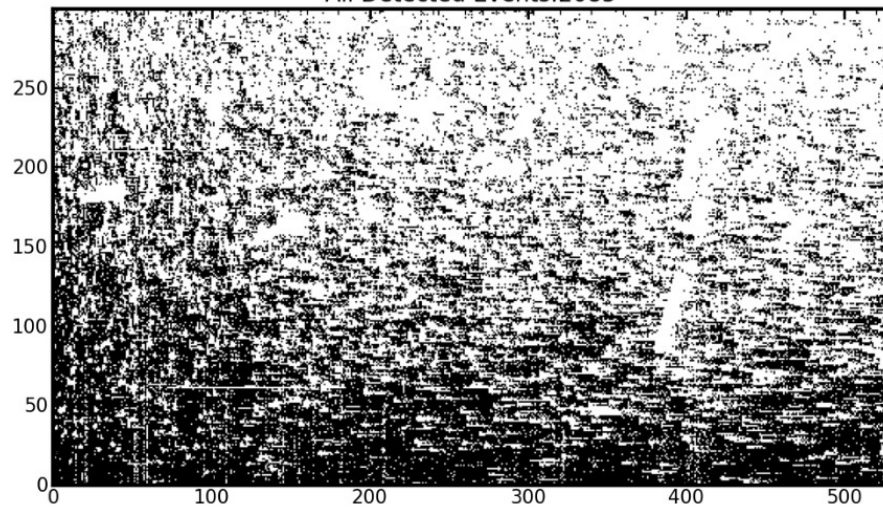
Area activa original



Area activa nueva



All Detected Events:2085



Así se visualiza una vez que se
hace la clusterización

Muchas extensiones se están descartando debido a que el script no puede ajustar la doble gaussiana (pero esto tambien puede cambiar si se mejora el script)

The terminal window shows the execution of a script for processing astronomical data. The script is located at `~/Documents/Programs/CodigosICN/Catalogo_Eventos/Otros_clusters`. The output consists of a series of 'Fit error' messages for various image files, followed by a summary of the results.

The 'Fit error' messages are as follows:

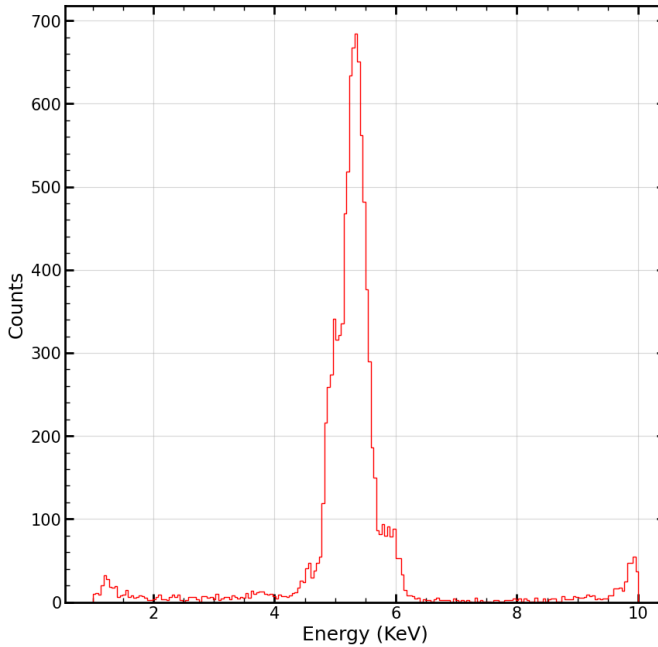
```
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_130.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_131.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_131.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_132.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_132.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_132.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_133.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_133.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_133.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_134.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_134.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_135.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_136.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_136.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_137.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_137.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_137.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_138.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_138.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_138.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_139.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_139.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_139.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_140.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_140.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_140.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_300_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_140.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_52.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_53.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_53.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_54.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_54.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_56.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_56.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_58.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_58.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_59.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_59.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_60.fits
Fit error in extension 0 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_60.fits
Fit error in extension 1 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_60.fits
Fit error in extension 3 of image .././Images/Pruebas_Mau/Fe55_NSMPAP200/proc_skp-m-009_microchip_T_150_Vv82_NSAMP_200_NROW_650_NCOL_700_EXPOSURE_20_NBINROW_1_NBINCOL_1_img_60.fits
```

The summary of the results is as follows:

```
Hora del final de cálculo: 2025-07-30 15:47:16.411229
Tiempo de cálculo: 0:04:06.132799
Dictionary saved in /home/bruce/Documents/Programs/CodigosICN/Catalogo_Eventos/Otros_clusters/dict_energy_allclusters_NSAMP324_Extensions_1_to_4_Imgs_141_SIZE_250x529_NSIGMAS_35_KeV.pkl as a binary file
To open use library "pickle"
Imágenes con error al cargar: 0
Error en fit de extension: 197
Eventos Detectados en Total: 488315
Number of text: 83
Number of 2xt: 84
Number of 4xt: 59
Number of total img: 141
Number of total ext 1+2: 167
Number of total ext: 226
```

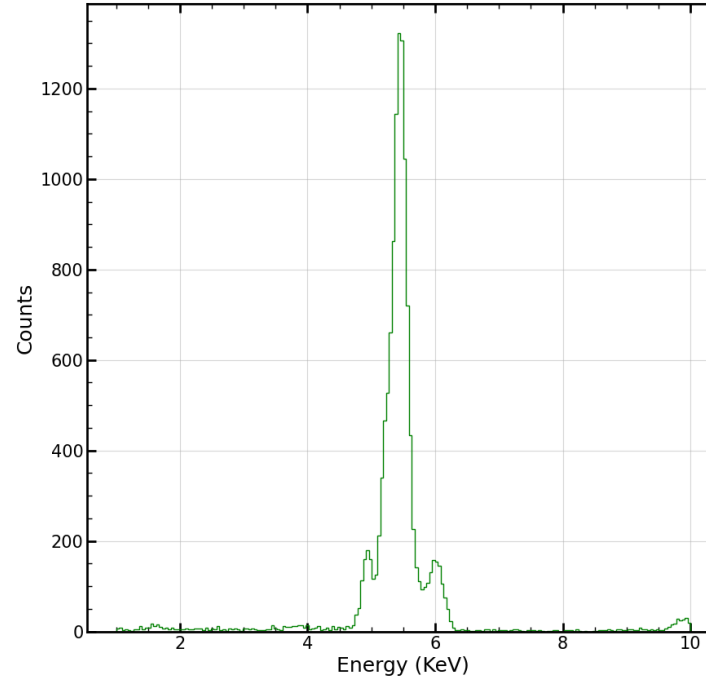
Espectro con 5σ

Energy Spectrum (Extension 1)



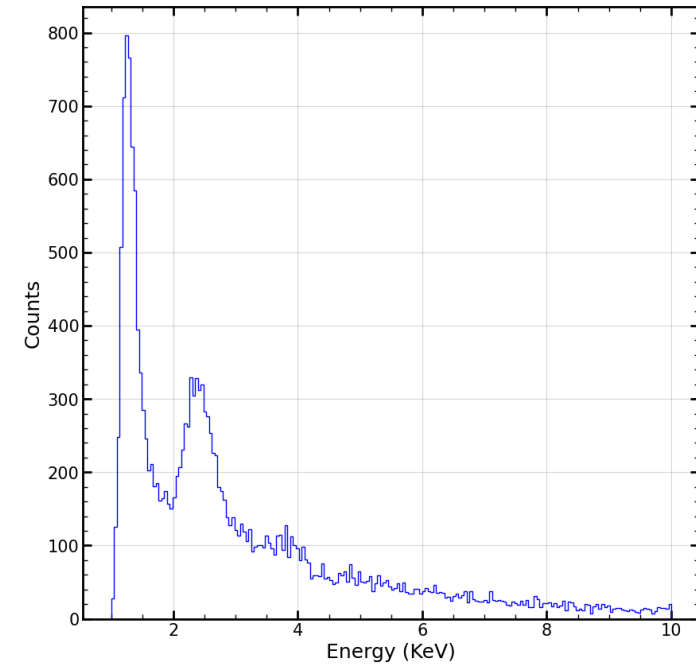
Aquí aun no se distinguen los dos picos

Energy Spectrum (Extension 2)



Esta extensión parece comportarse mejor

Energy Spectrum (Extension 4)

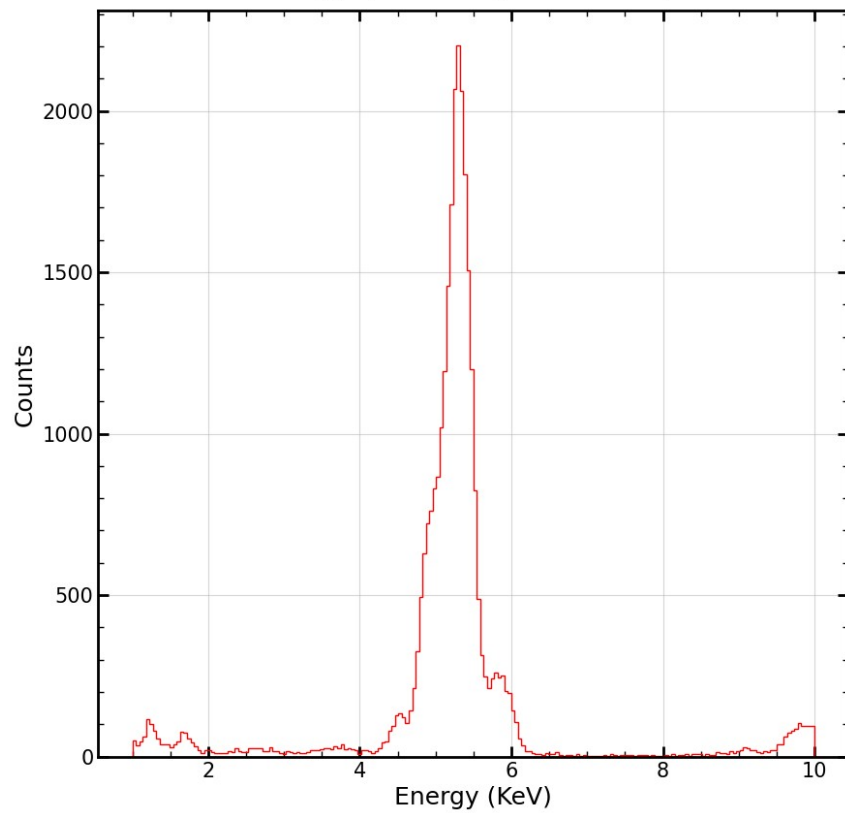


El espectro no sale como se espera, por lo que se descarta

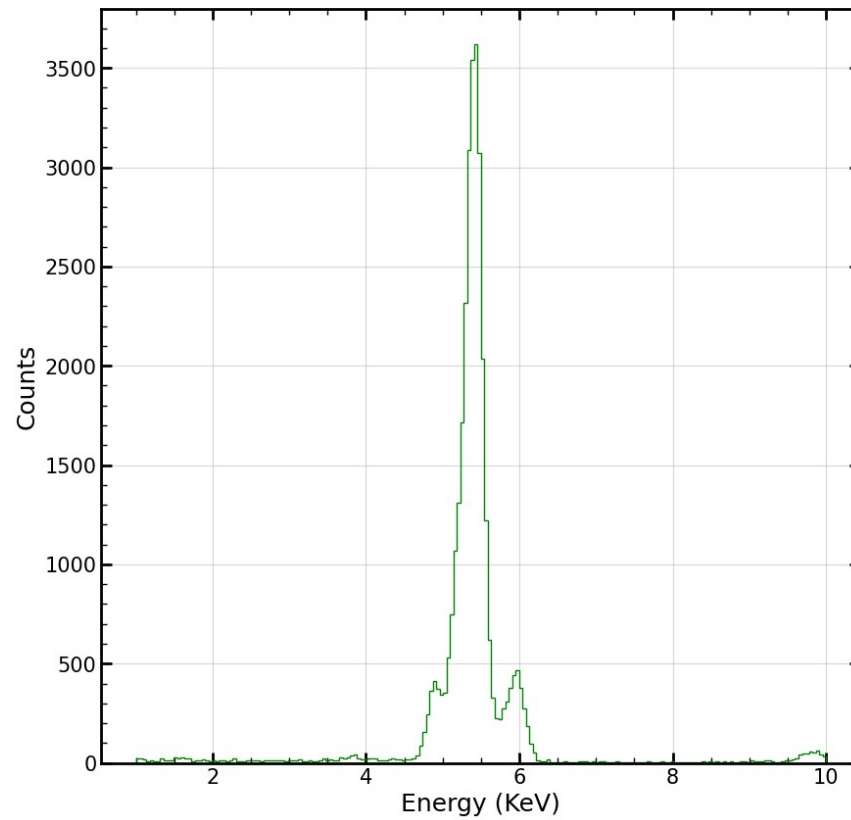
Se esperan dos picos: uno en 5.888-5.899 KeV
y otro en 6.489 KeV

Espectro con 10σ

Energy Spectrum (Extension 1)

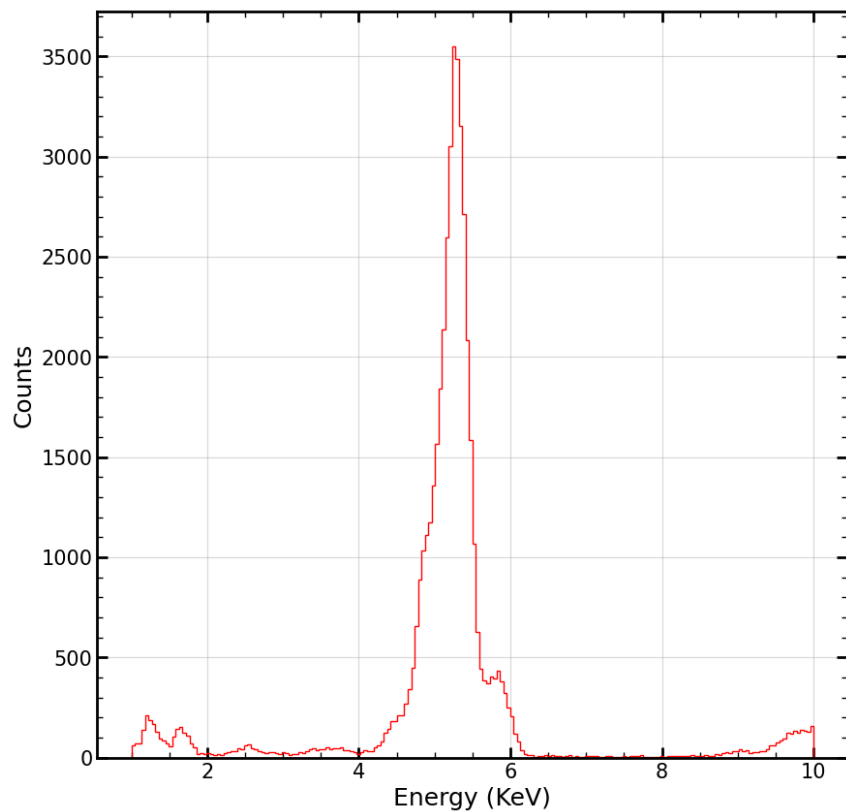


Energy Spectrum (Extension 2)

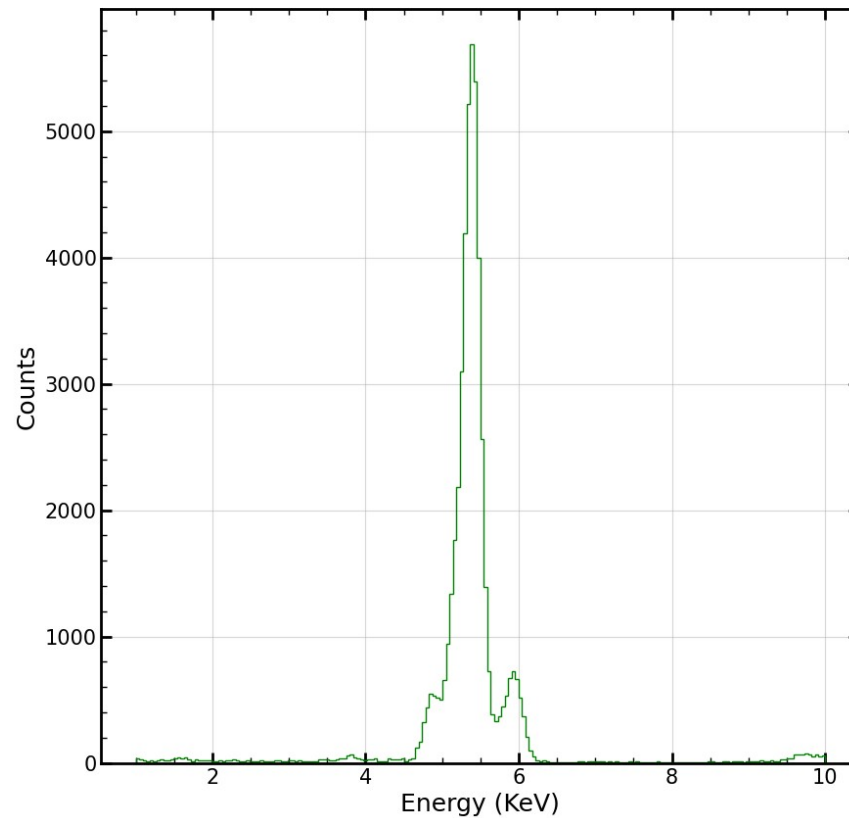


Espectro con 15σ

Energy Spectrum (Extension 1)

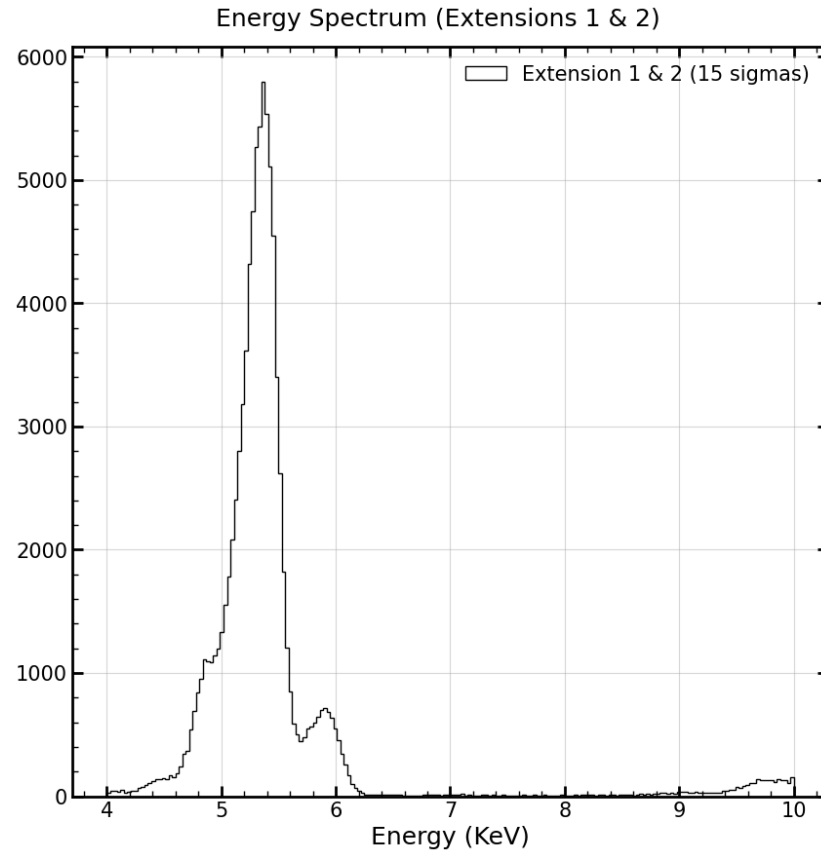


Energy Spectrum (Extension 2)

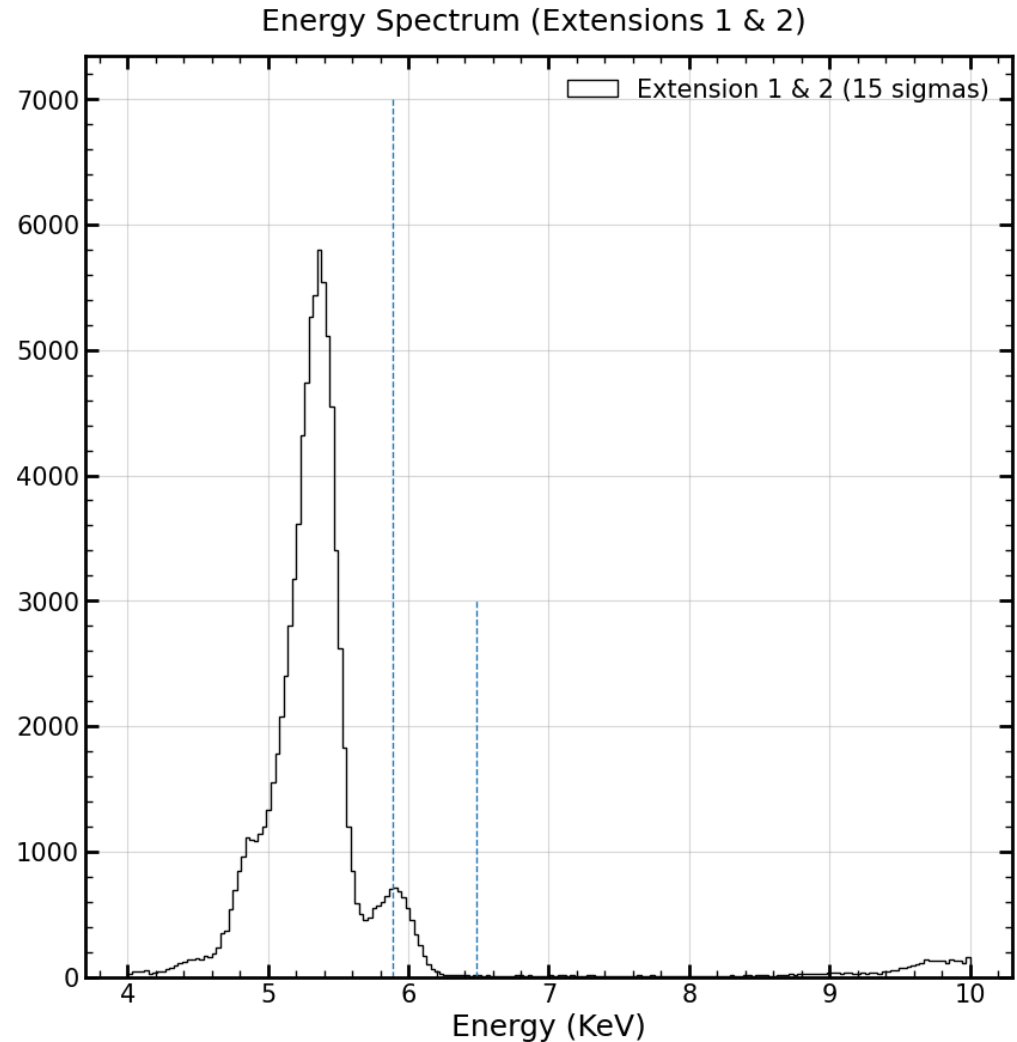


Parece mejorar la resolución
conforme aumenta σ

Tal como lo estoy haciendo con los muones, junto la extensión 1 y 2 para tener mas estadística.

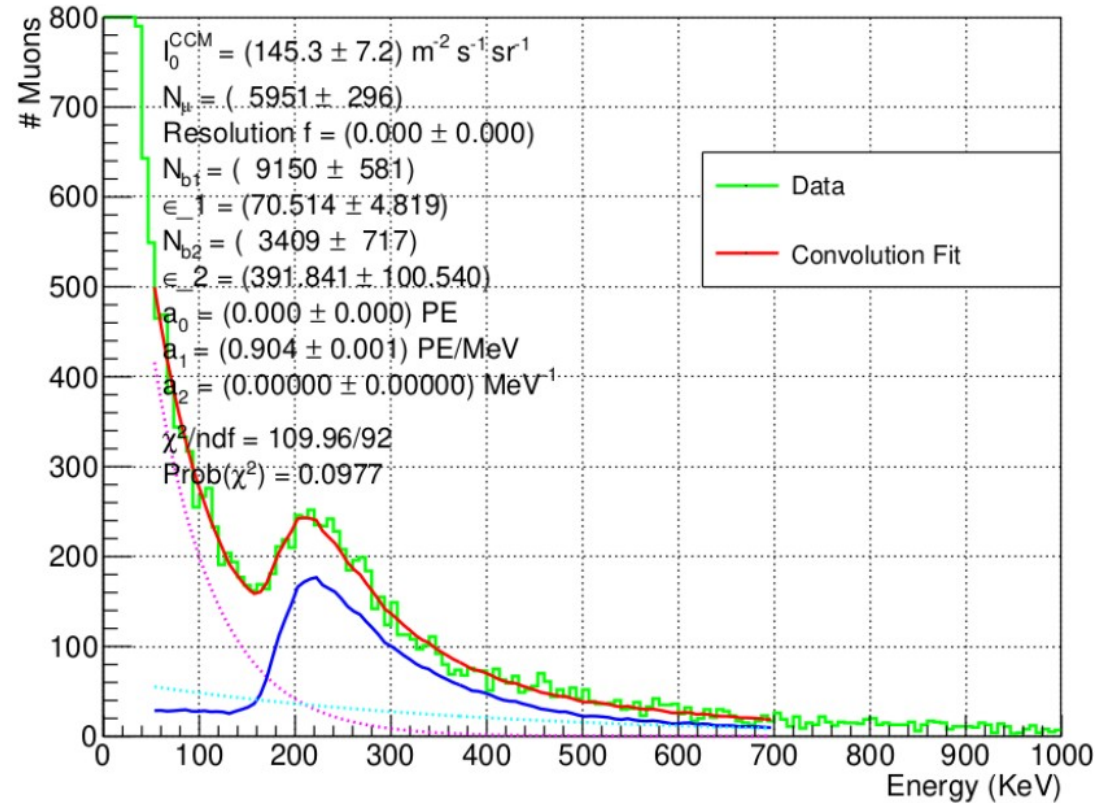


Tomando la extensión 1 y 2, con los datos de 15σ , se puede apreciar que los picos esperados no coinciden directamente con los esperados (que son 5.888 KeV y 6.489 KeV).

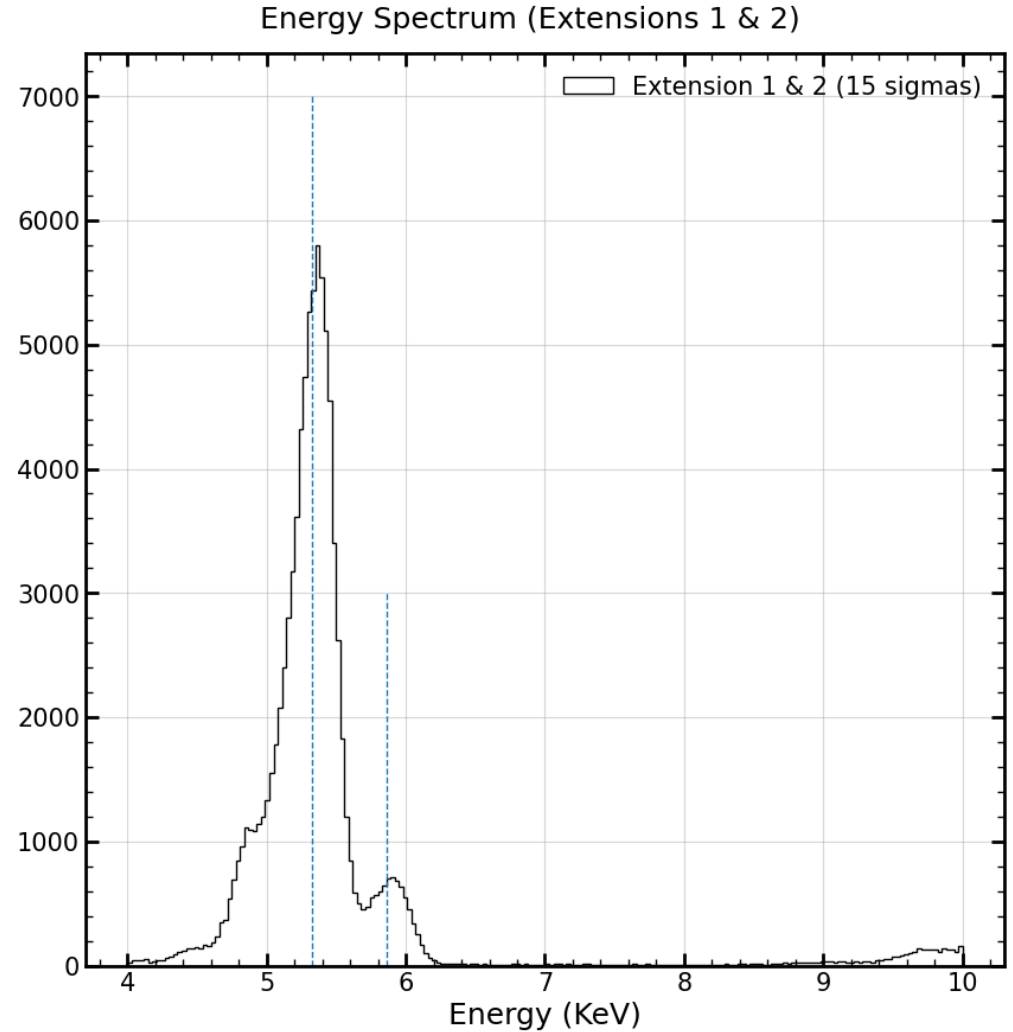


Espectro con 15σ

Sin embargo, hasta el momento, la simulación de GEANT4 solo se acopla a los datos si se multiplica por un factor de alrededor de 0.904 por lo que tal vez sea necesario multiplicar la energía de estos datos tambien.



Si se escala por 0.904 parece
que ahora los picos esperados
están por debajo de lo
experimental.



Si se escala por 0.91 los picos
parecen ajustar bien.

