

# Status report

1/18/2019

Tokyo University of Science

Michitaka Inomoto

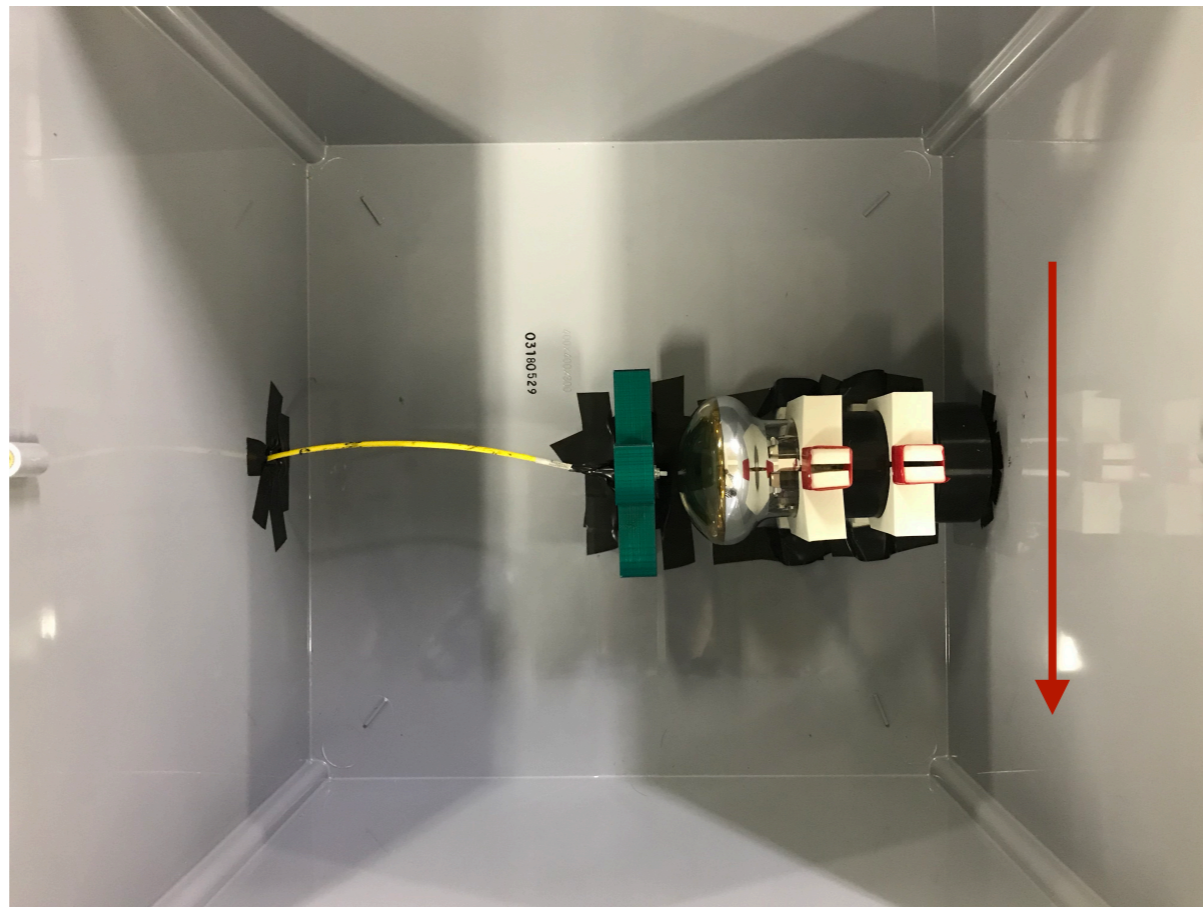
# What I have done

I made B-field in the direction perpendicular and parallel to PMT's photoelectric surface.

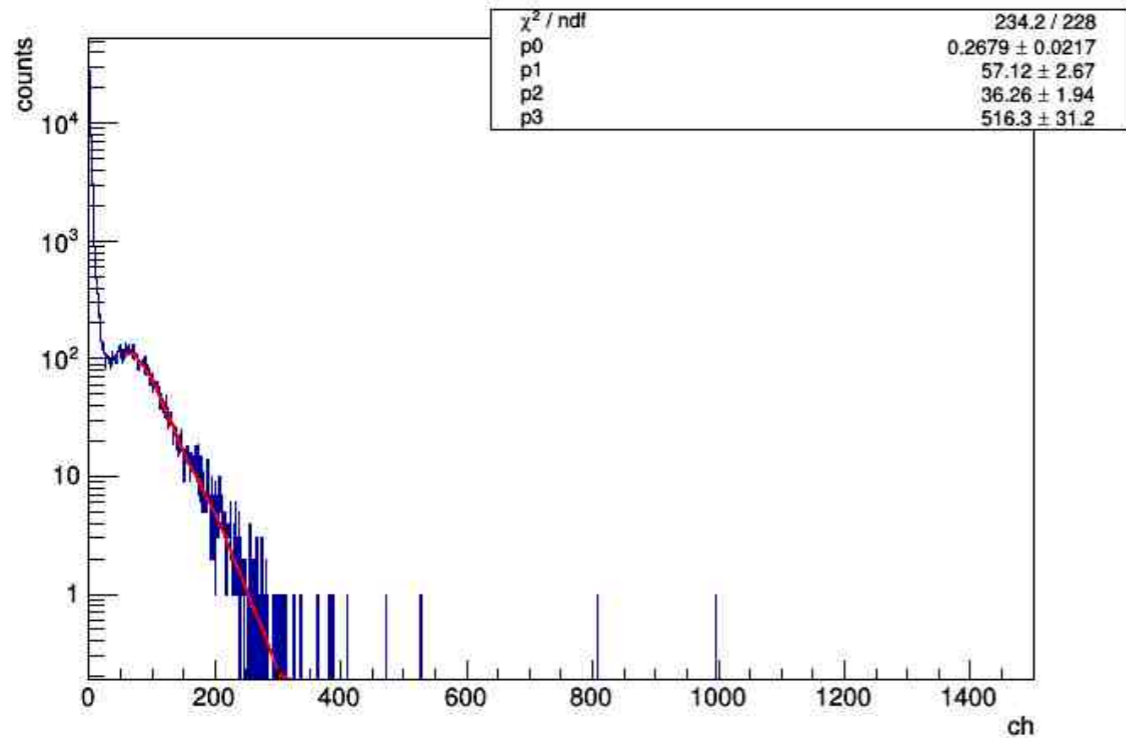
Then, I measured PMT's efficiency.

# Results

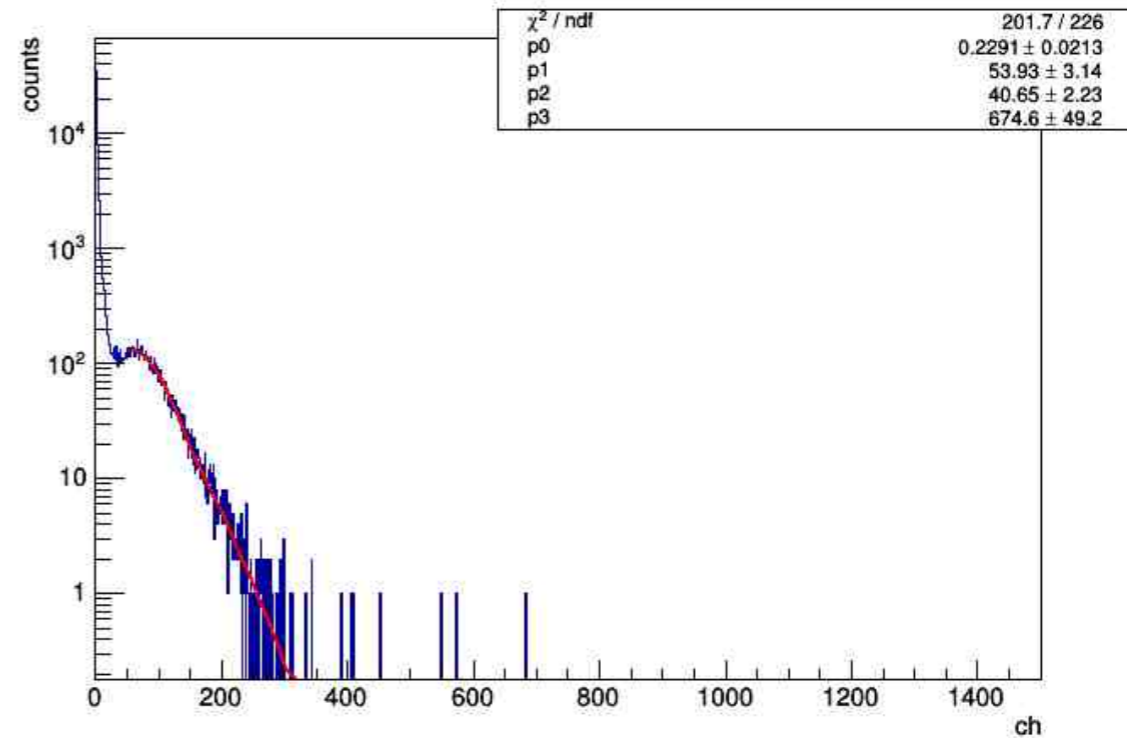
I made B-field in the direction parallel to PMT's photoelectric surface.  
LED current was Pulse 62.5 mA.  
Then, I measured PMT's efficiency.  
I defined this red arrow as positive direction of B-field.



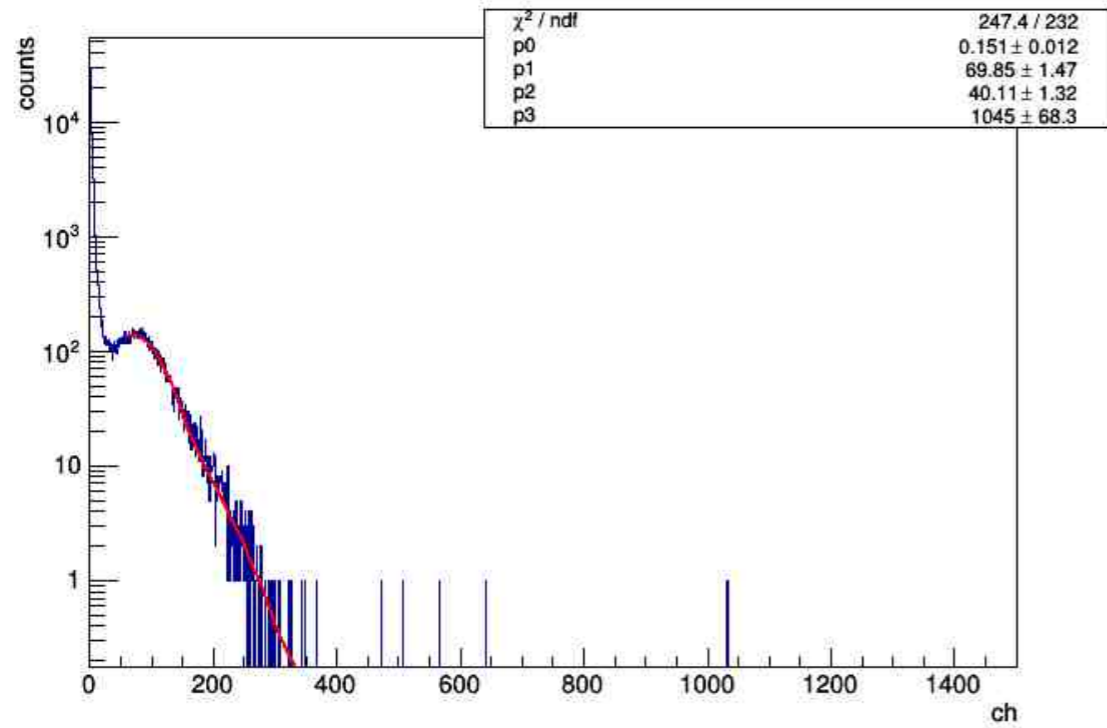
P62R5mA-500mA1214



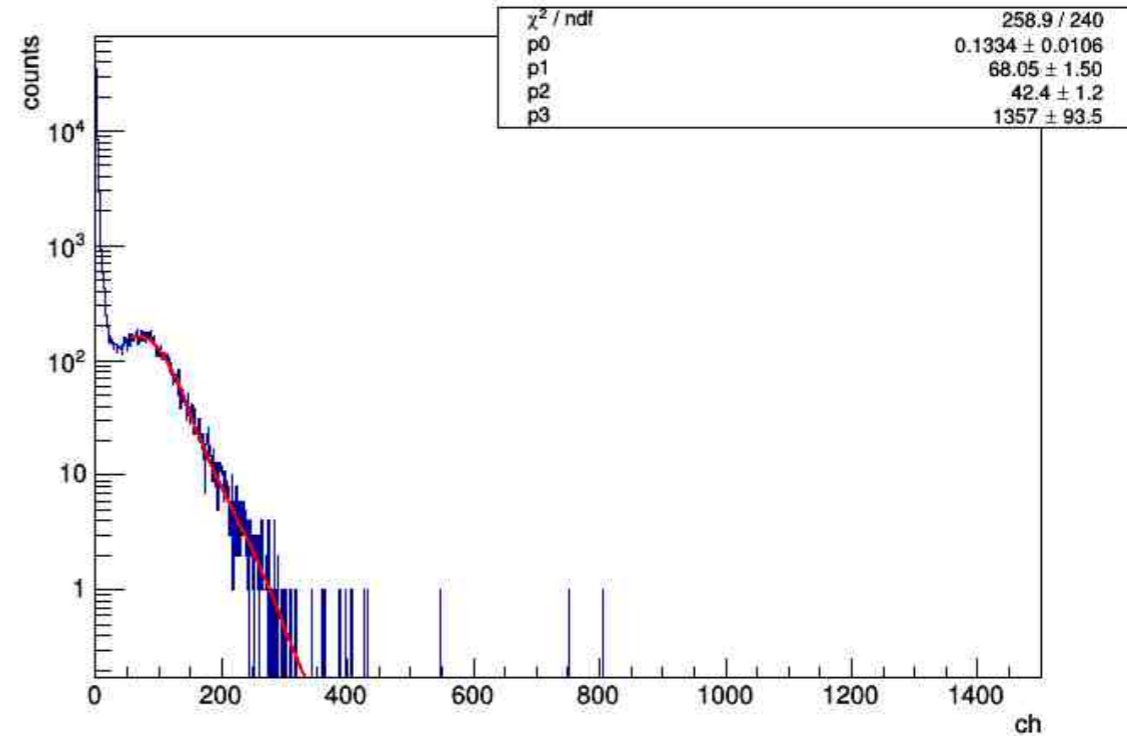
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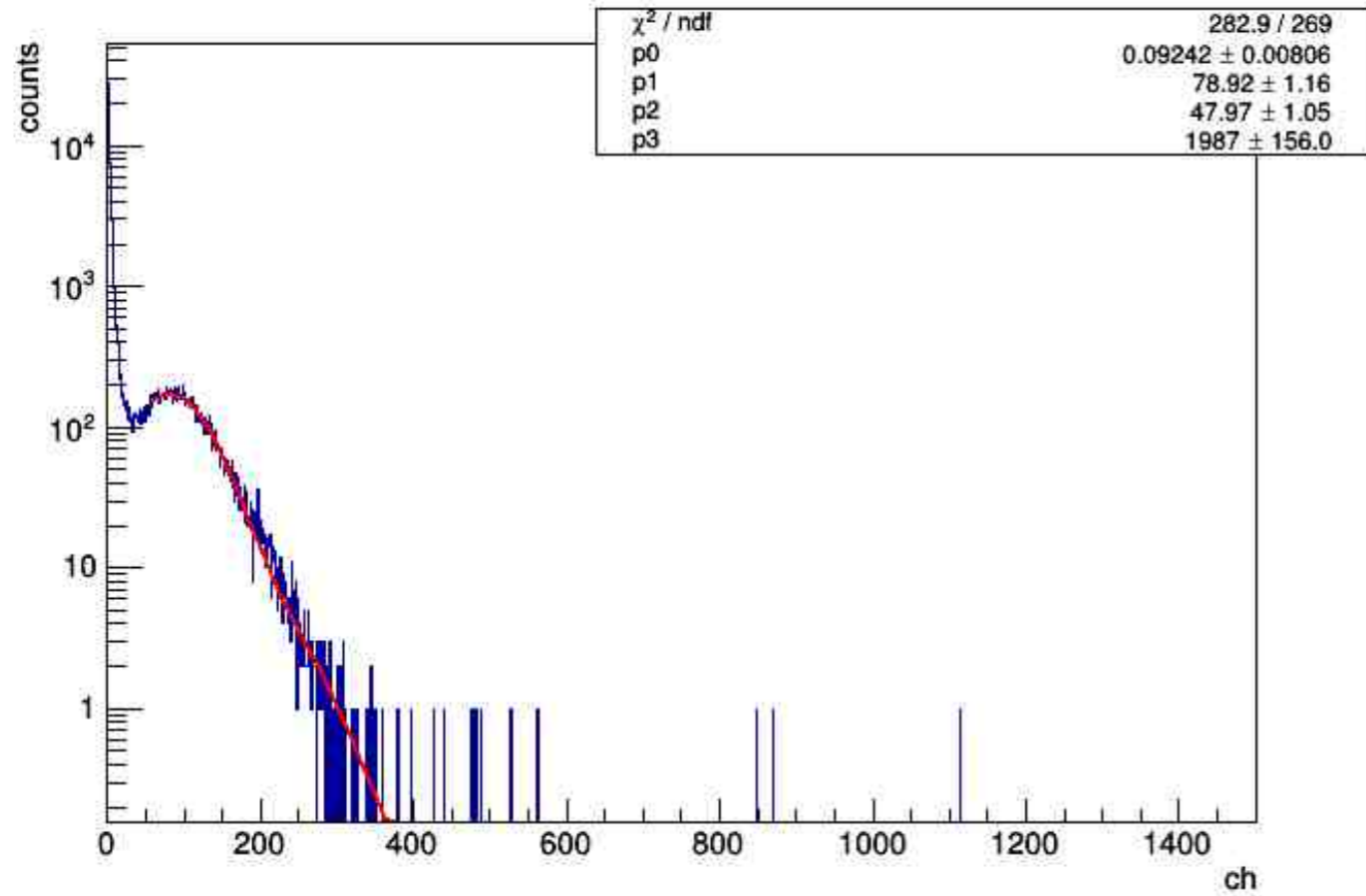
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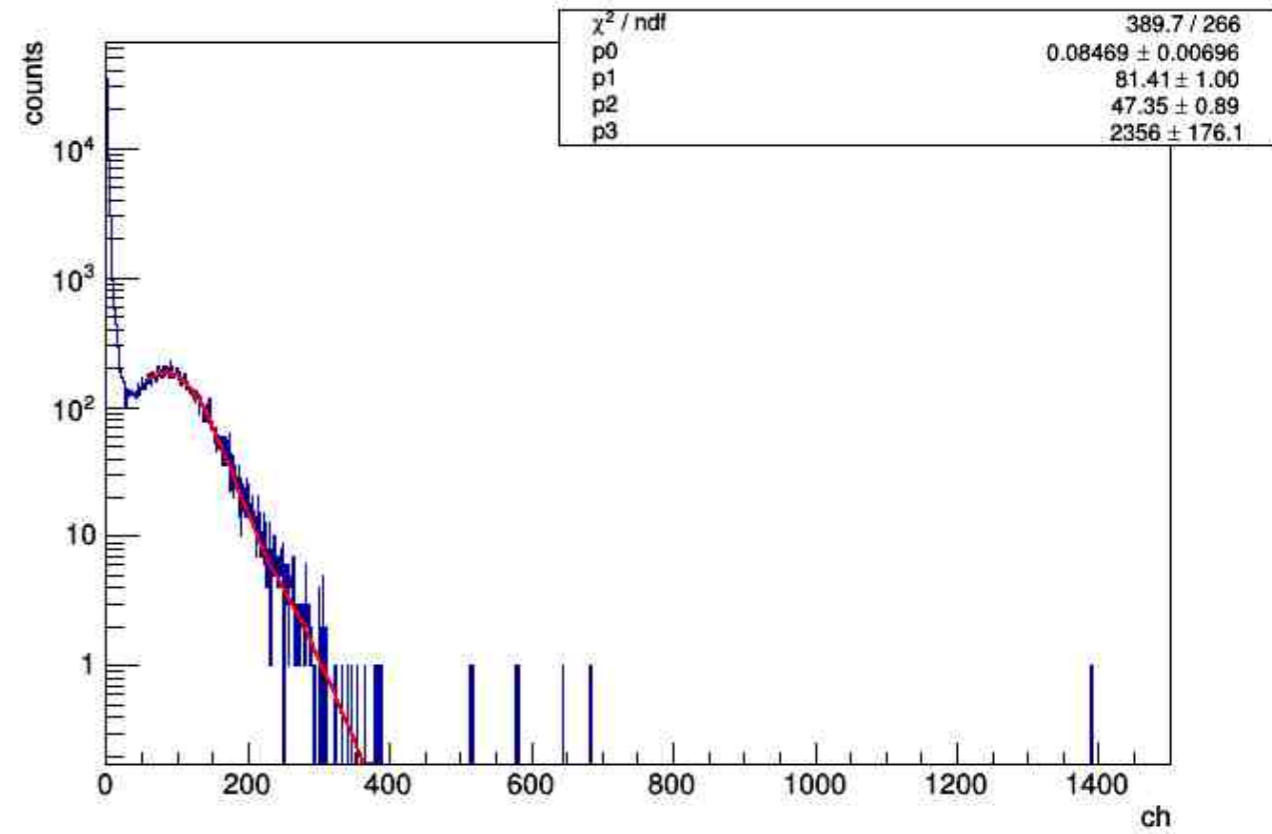
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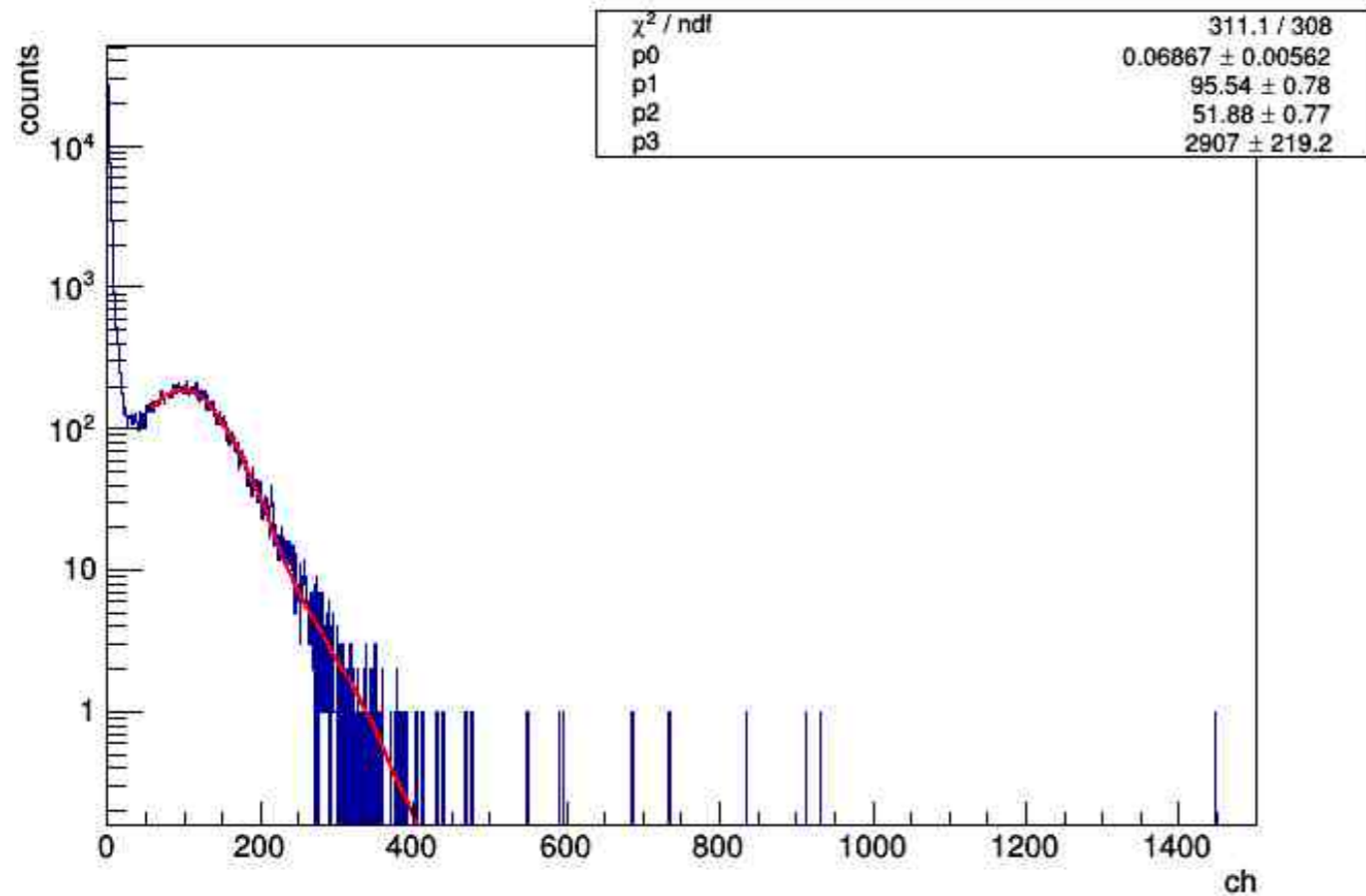
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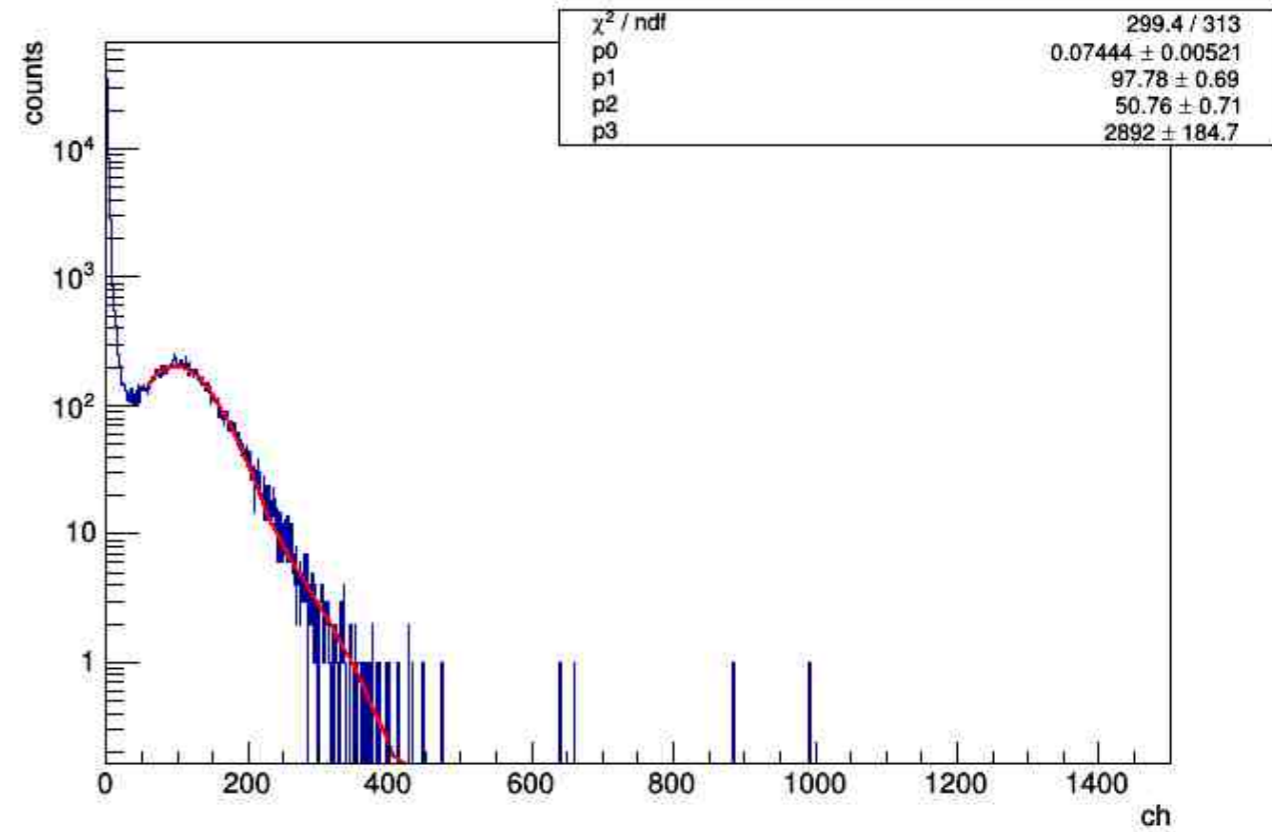
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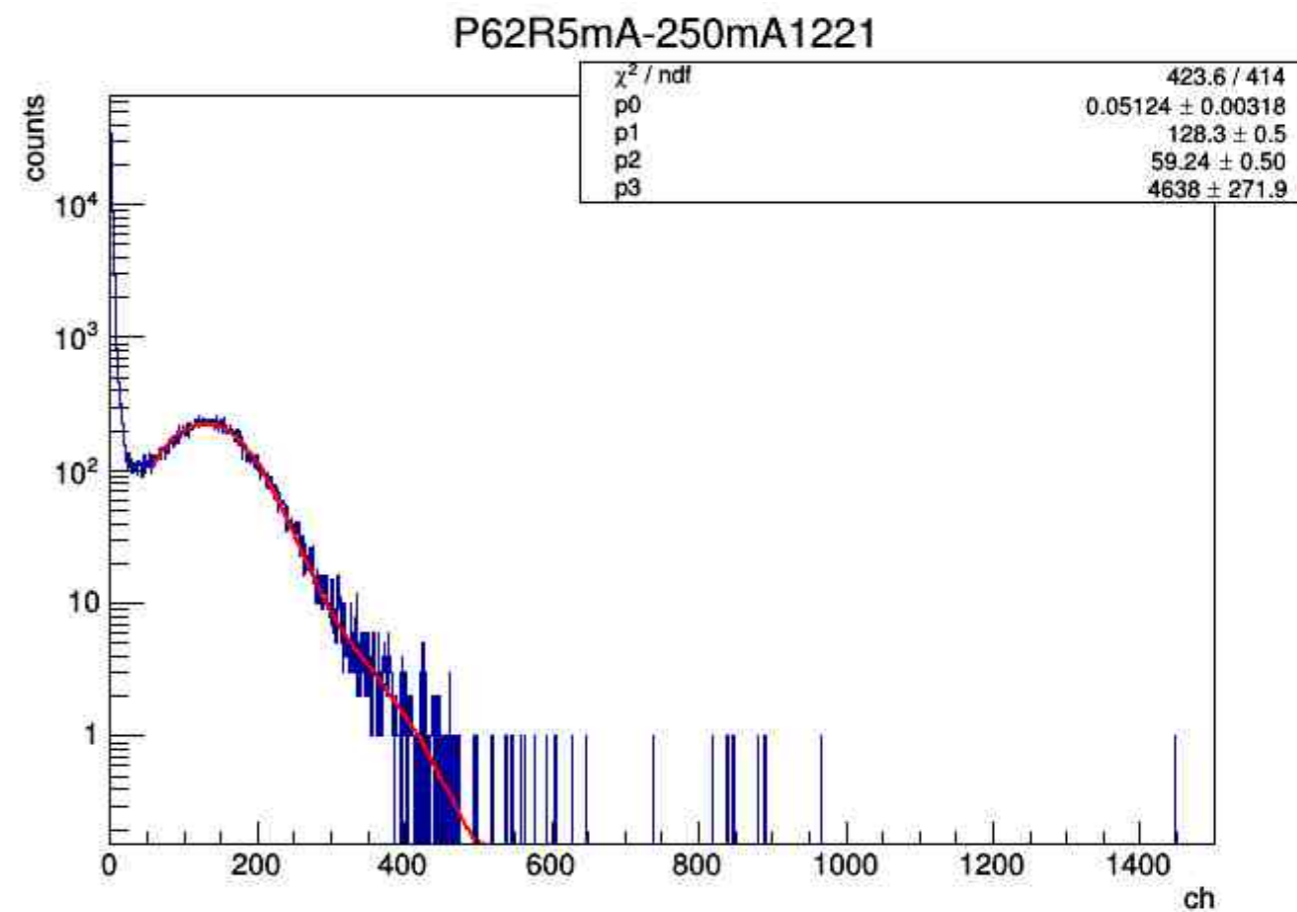
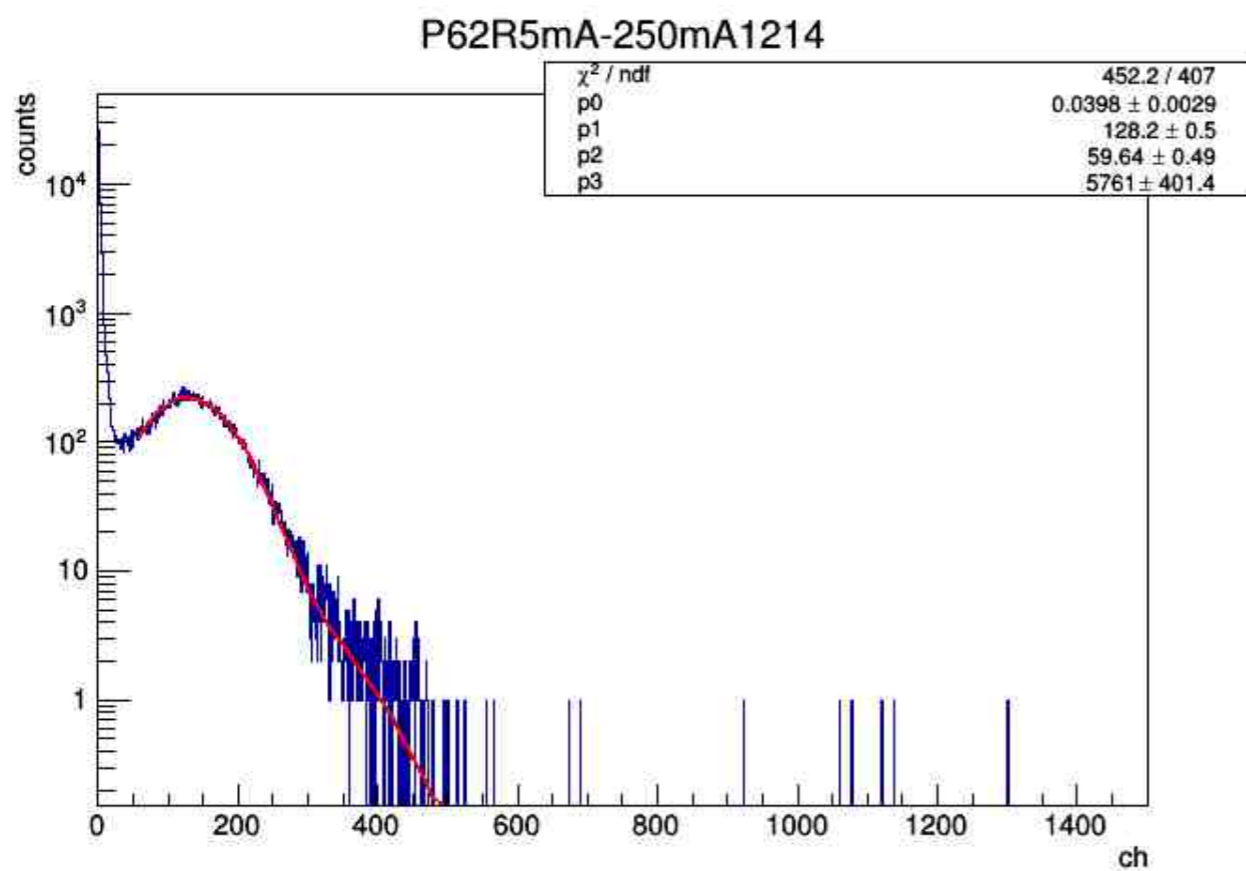
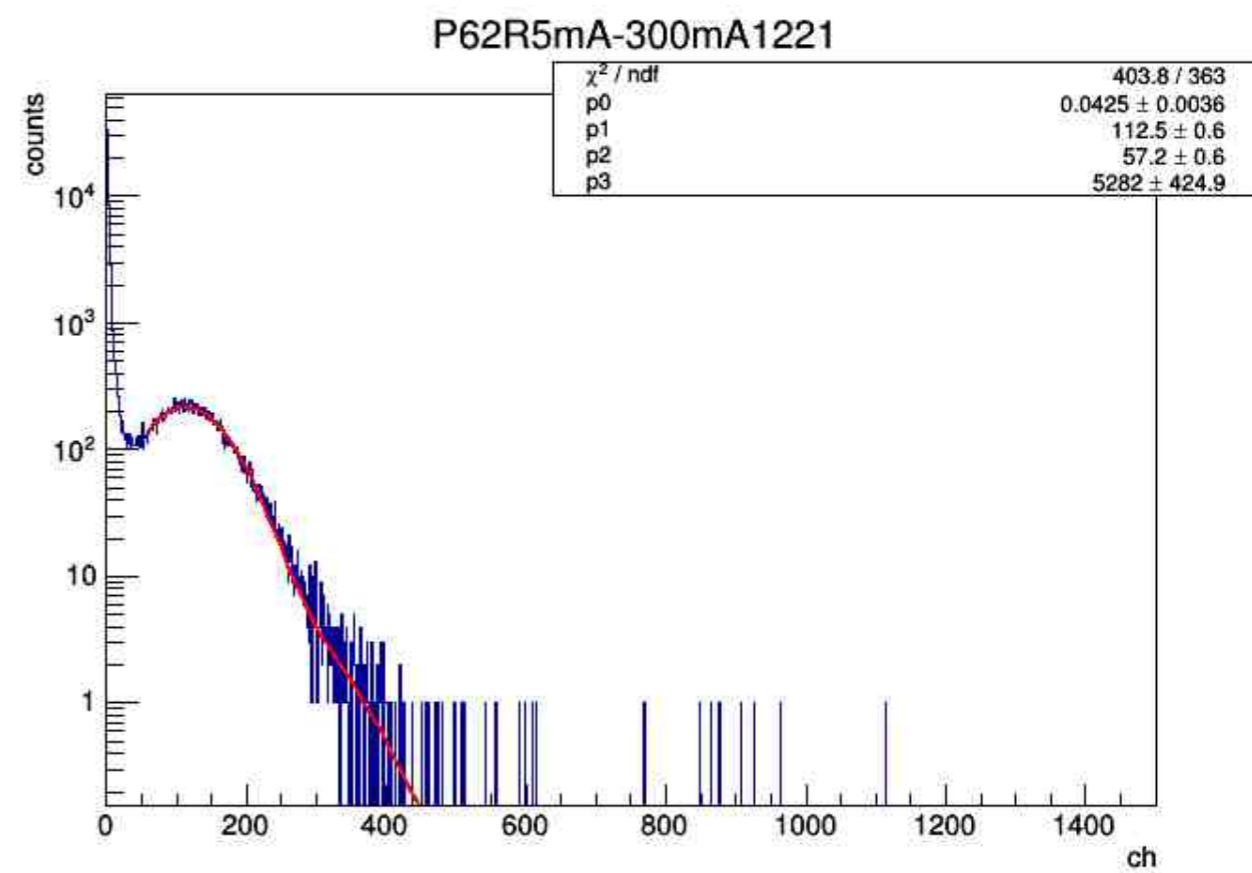
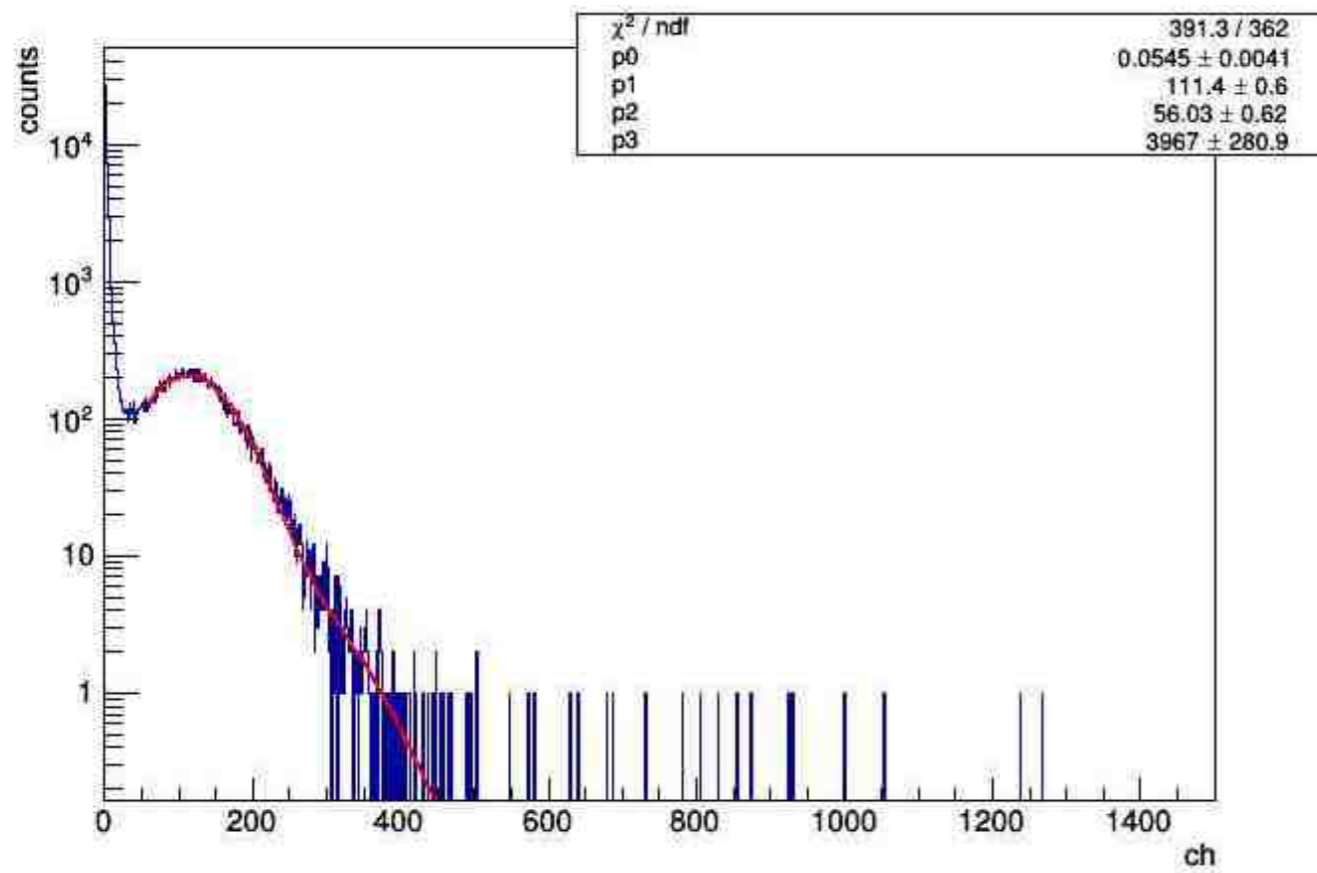
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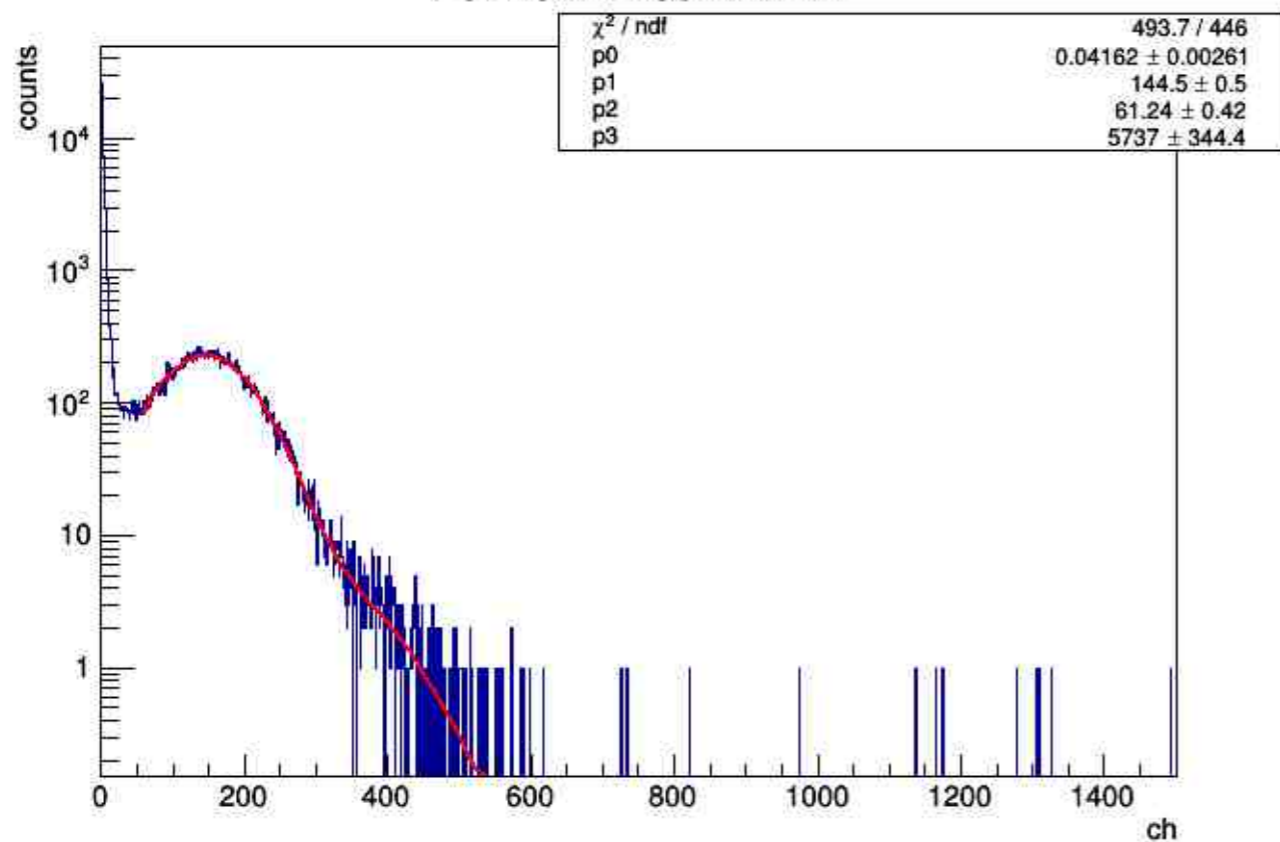
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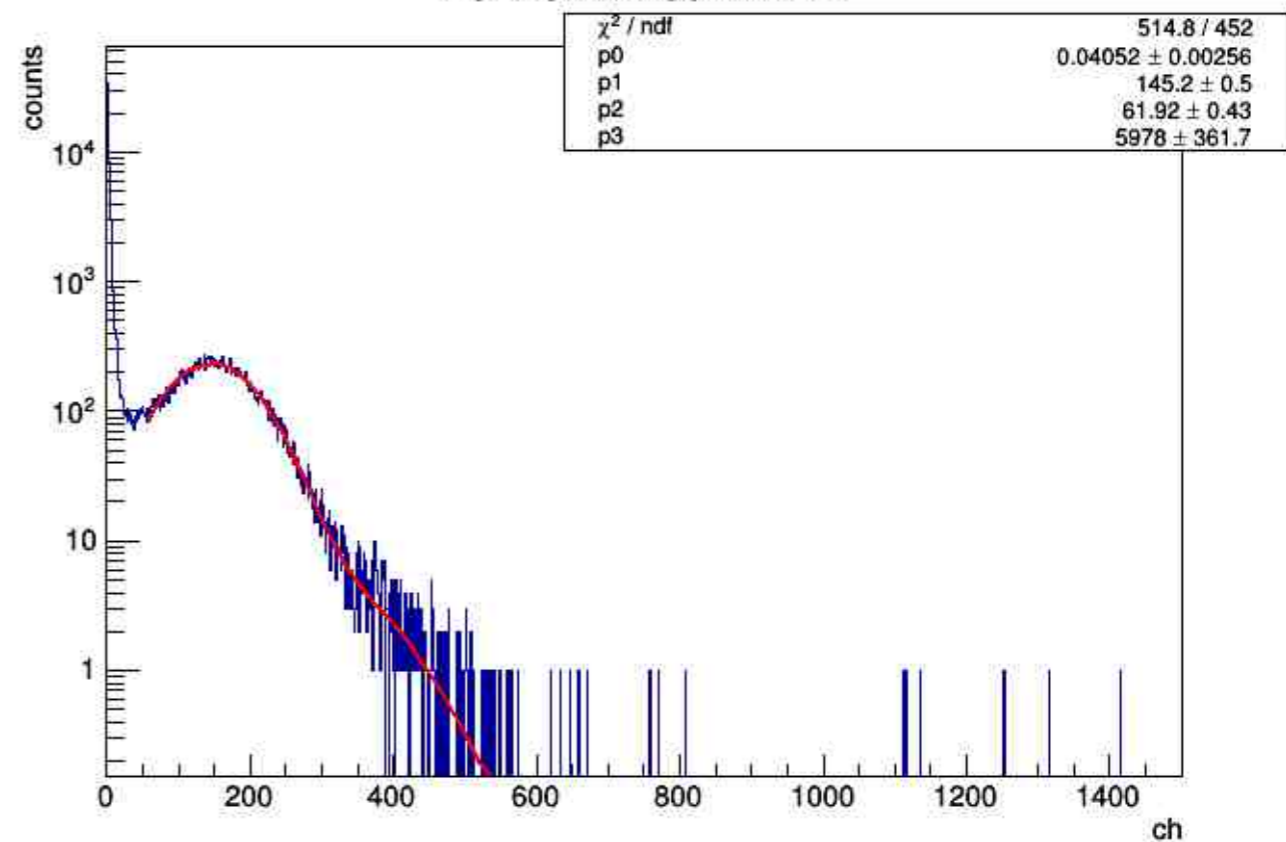




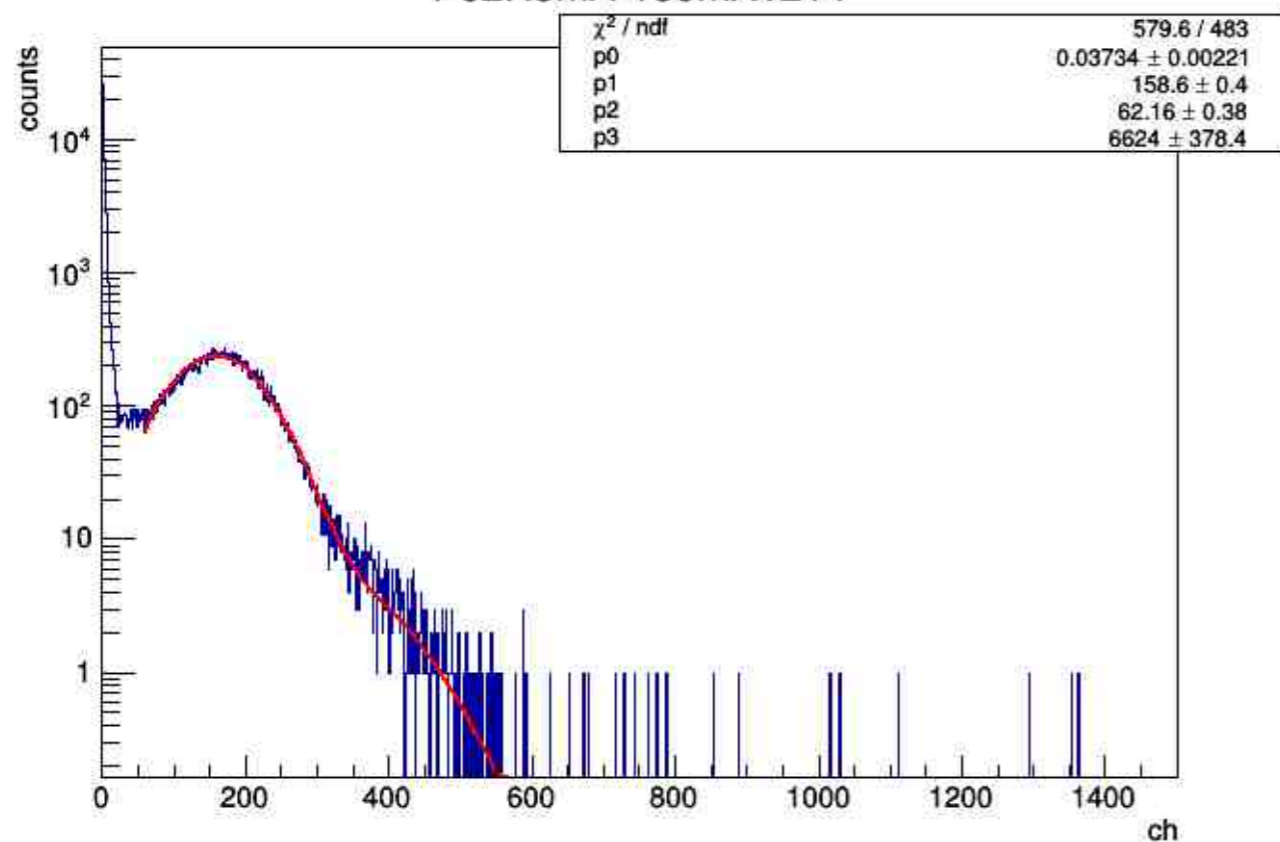
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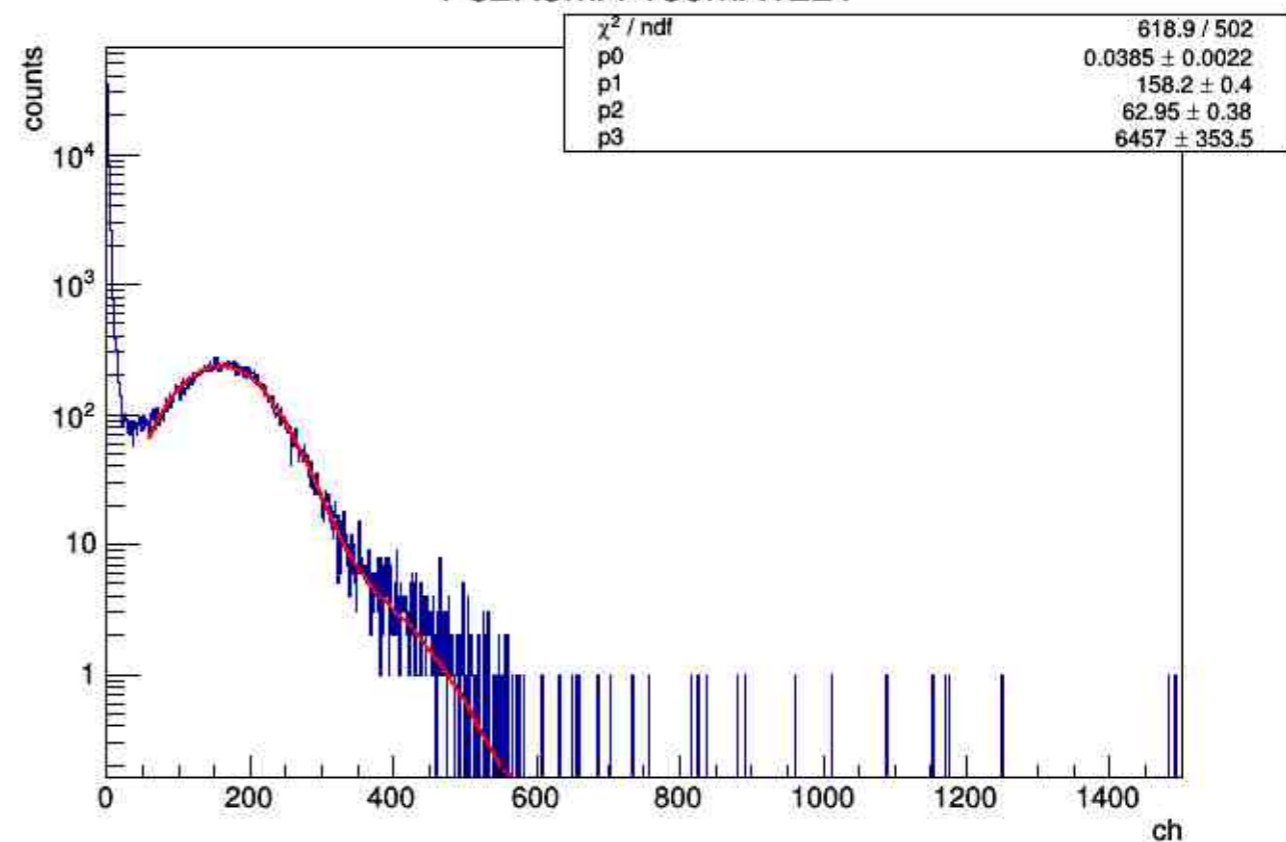
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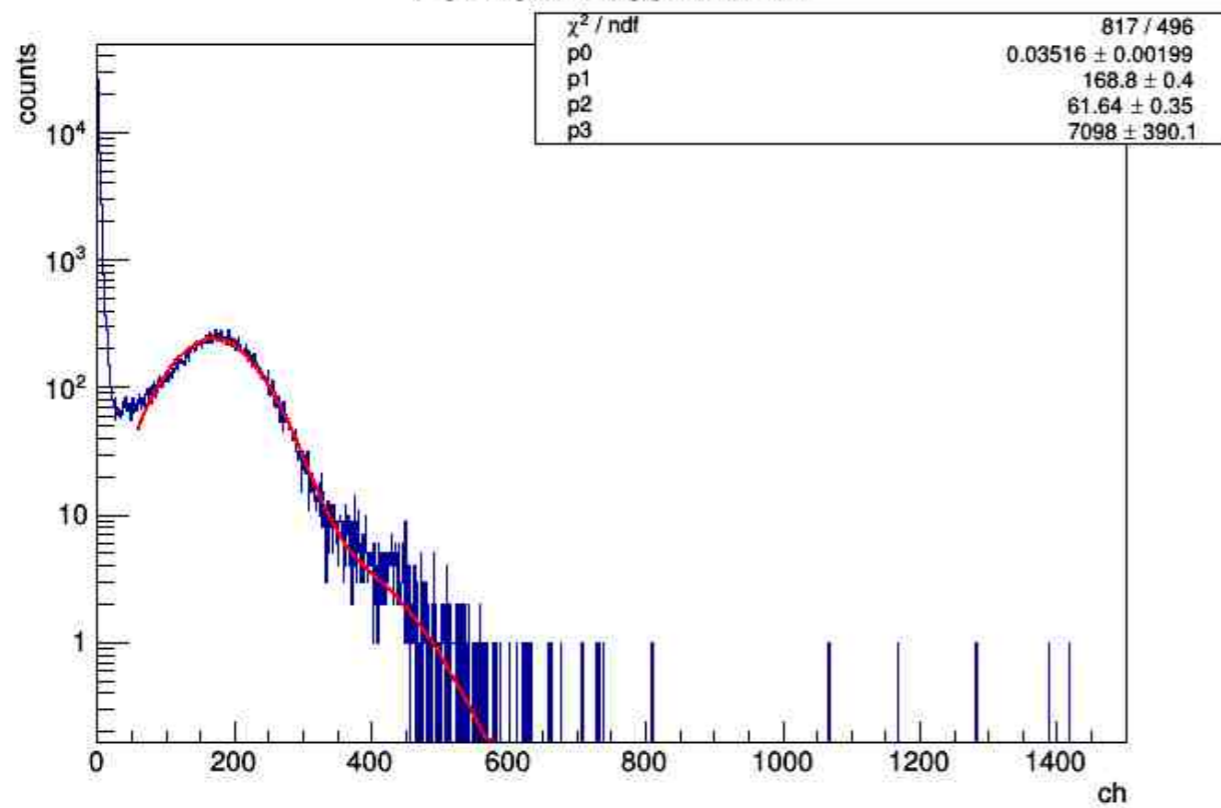
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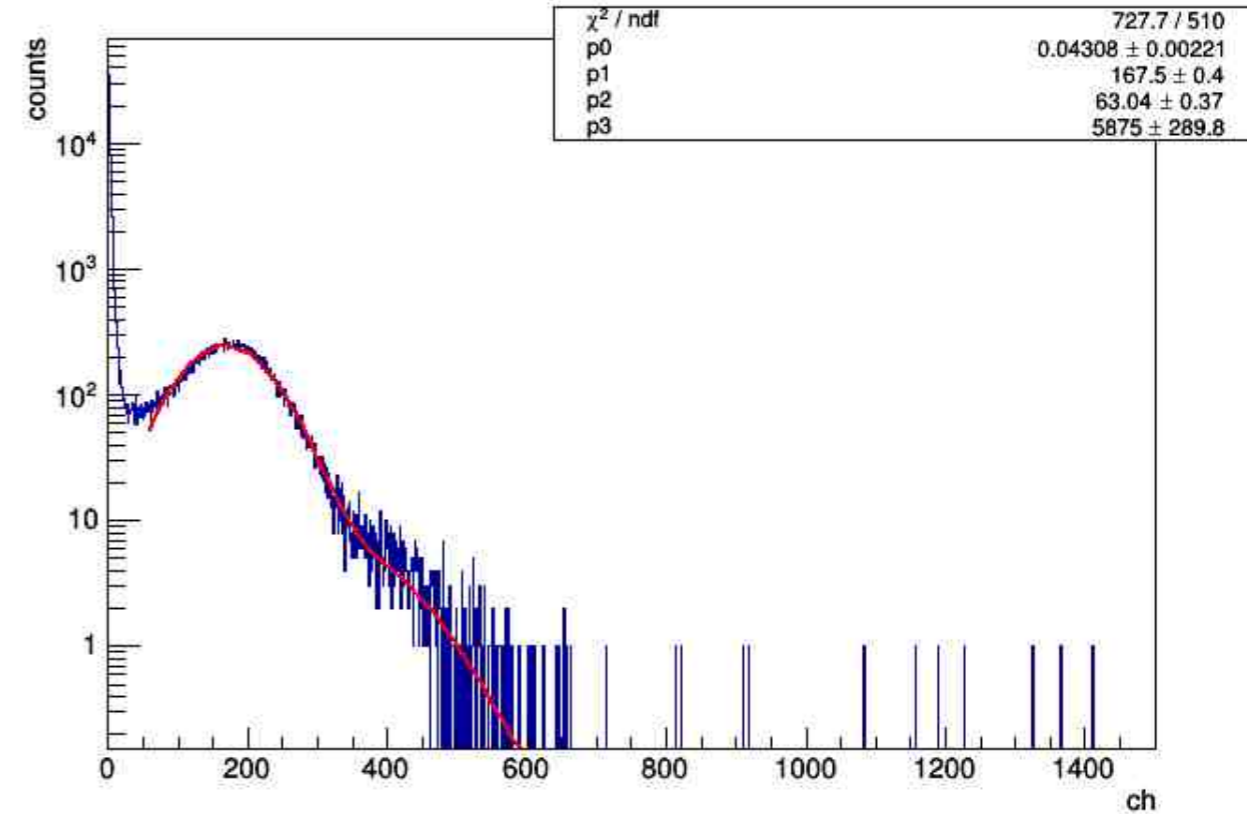
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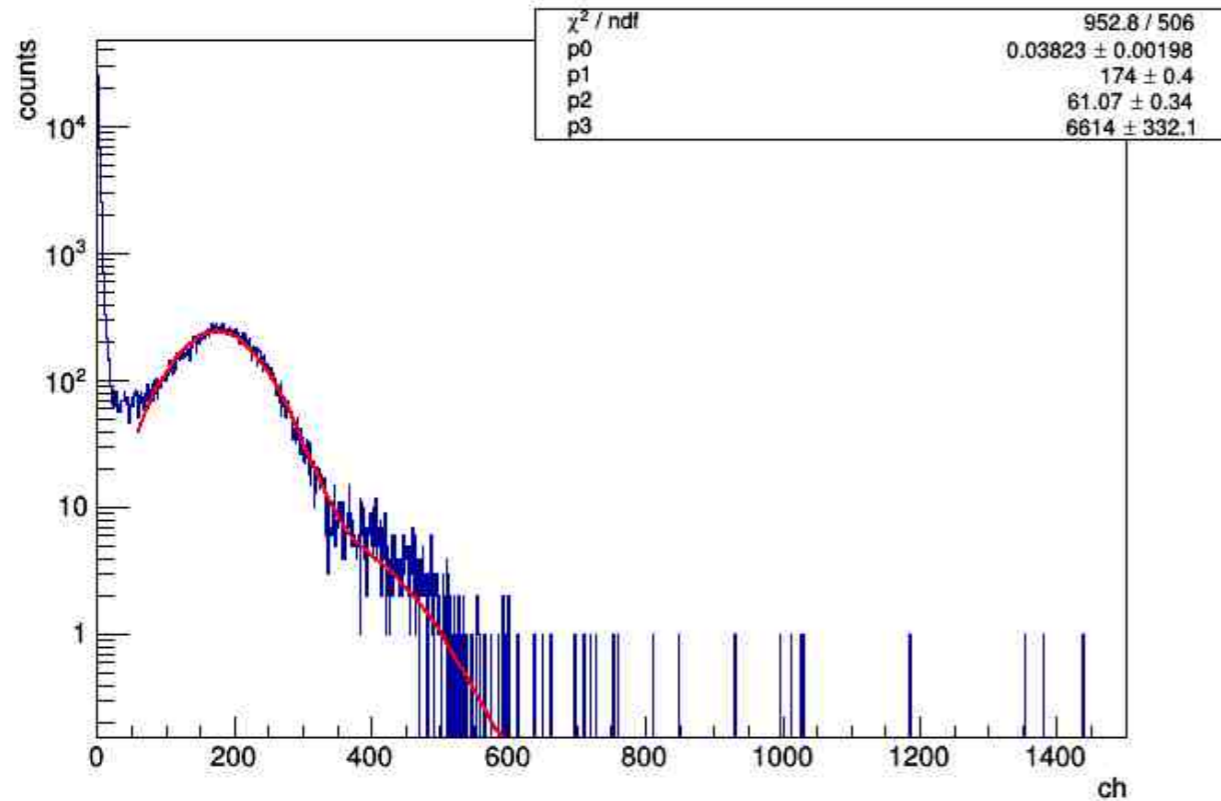
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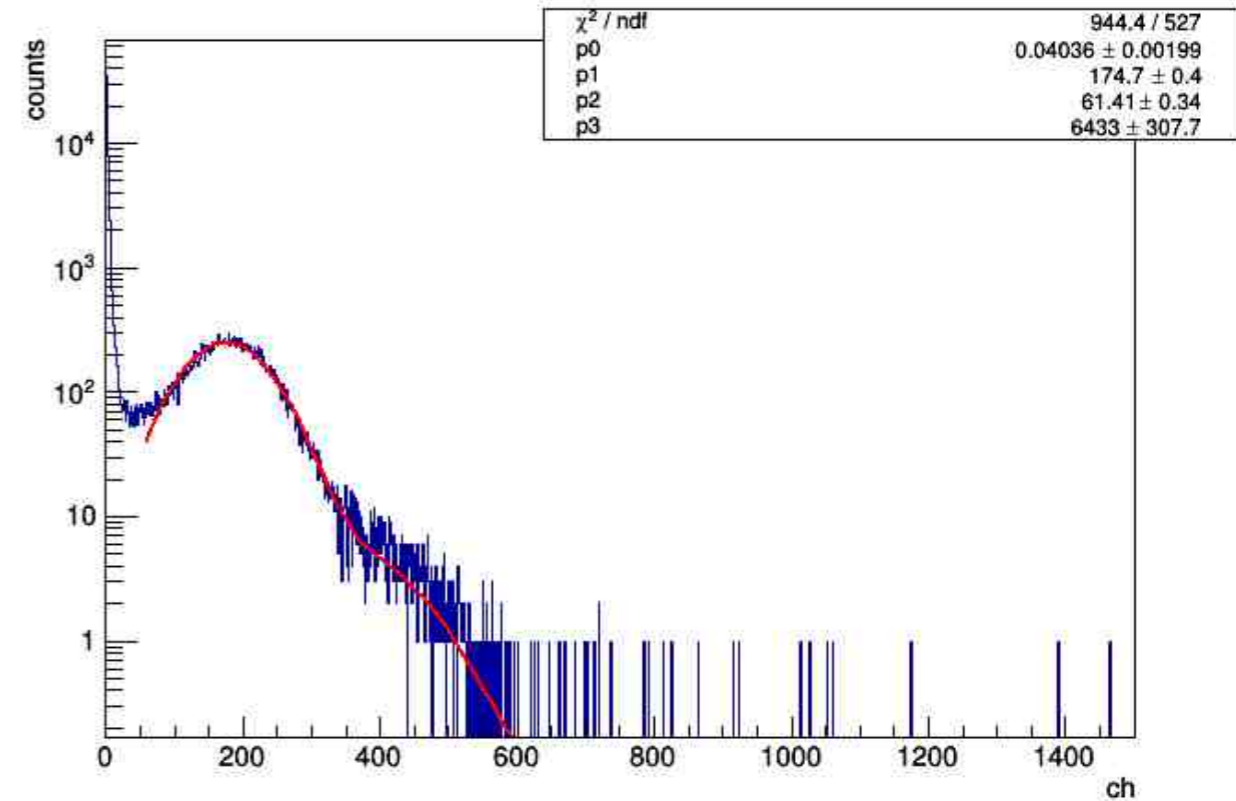
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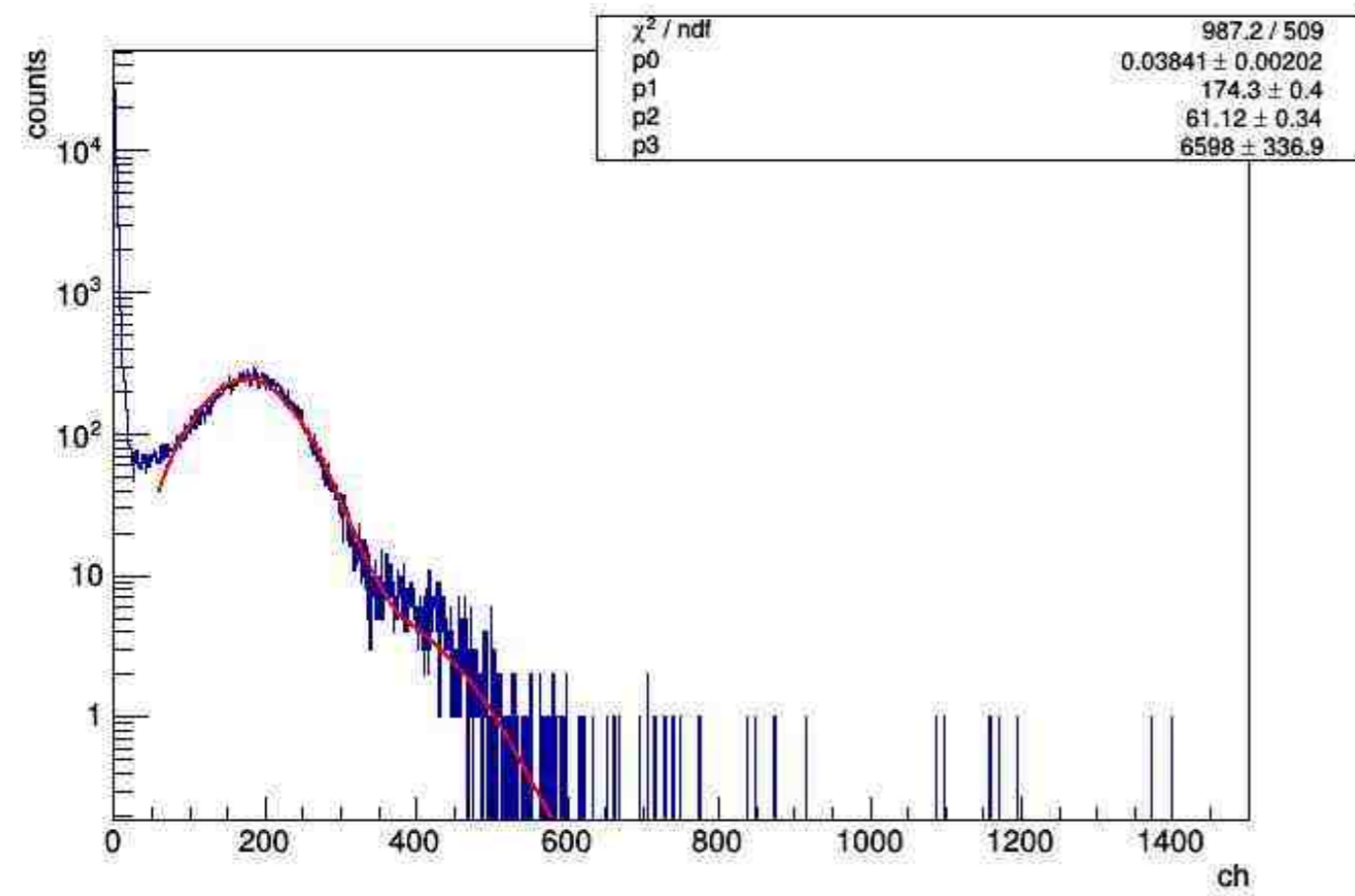
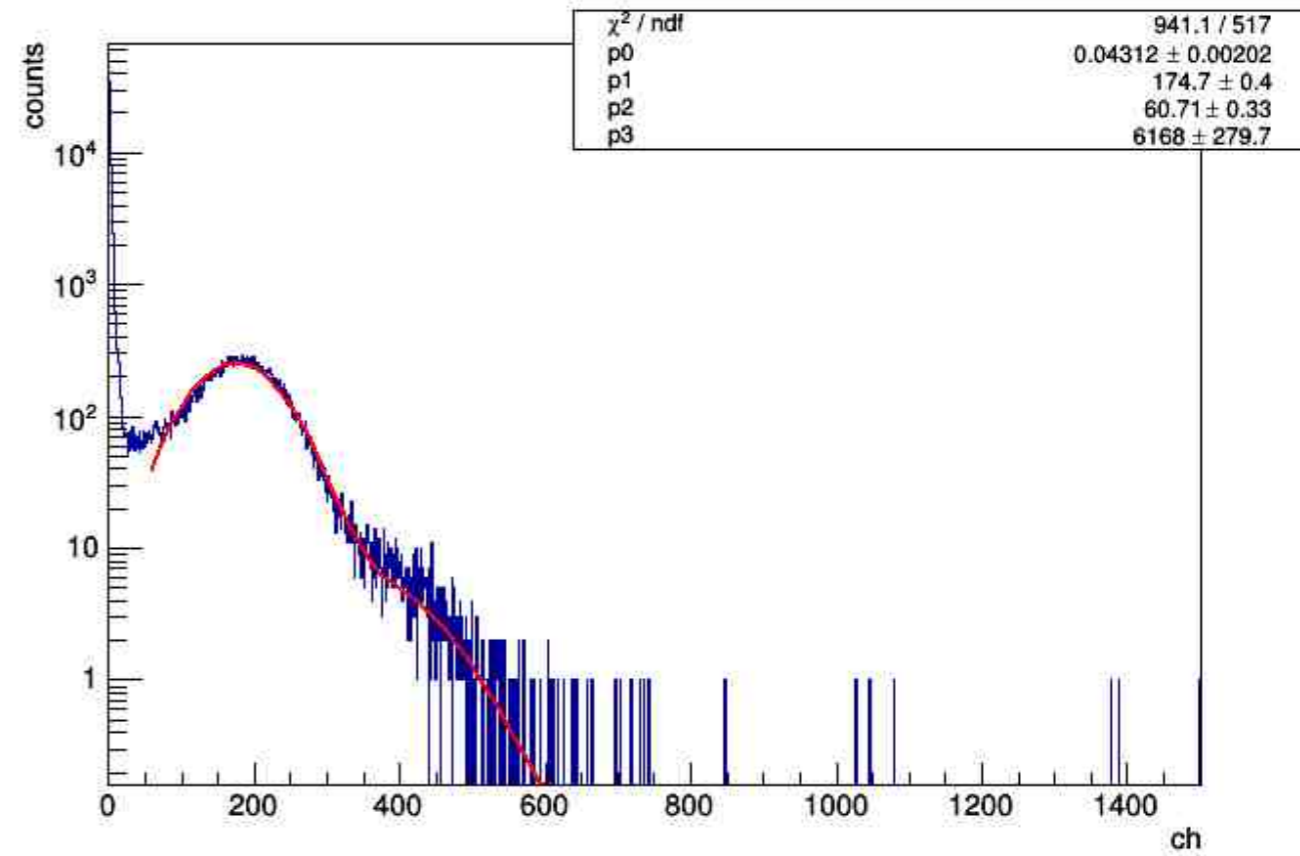


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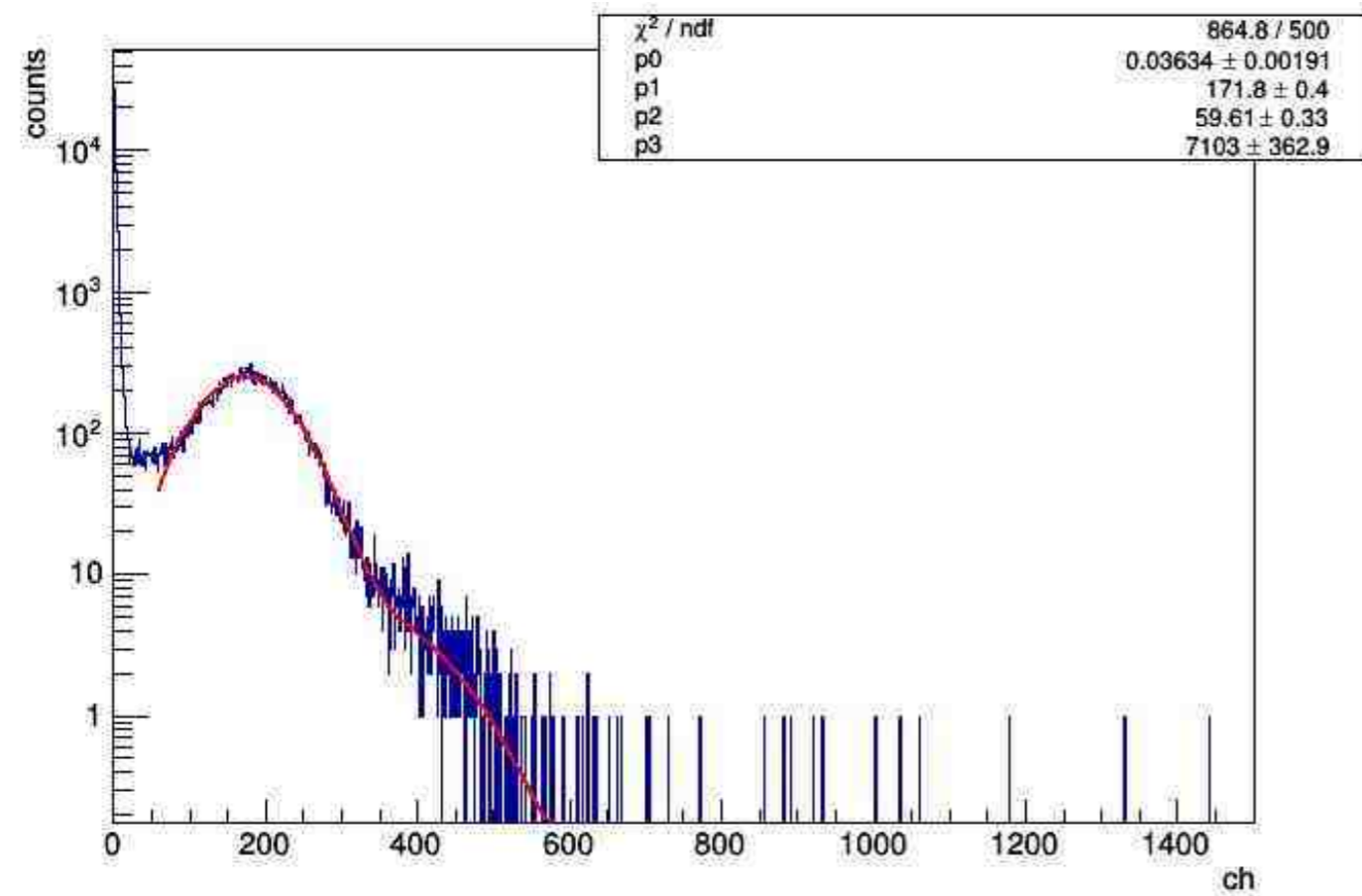
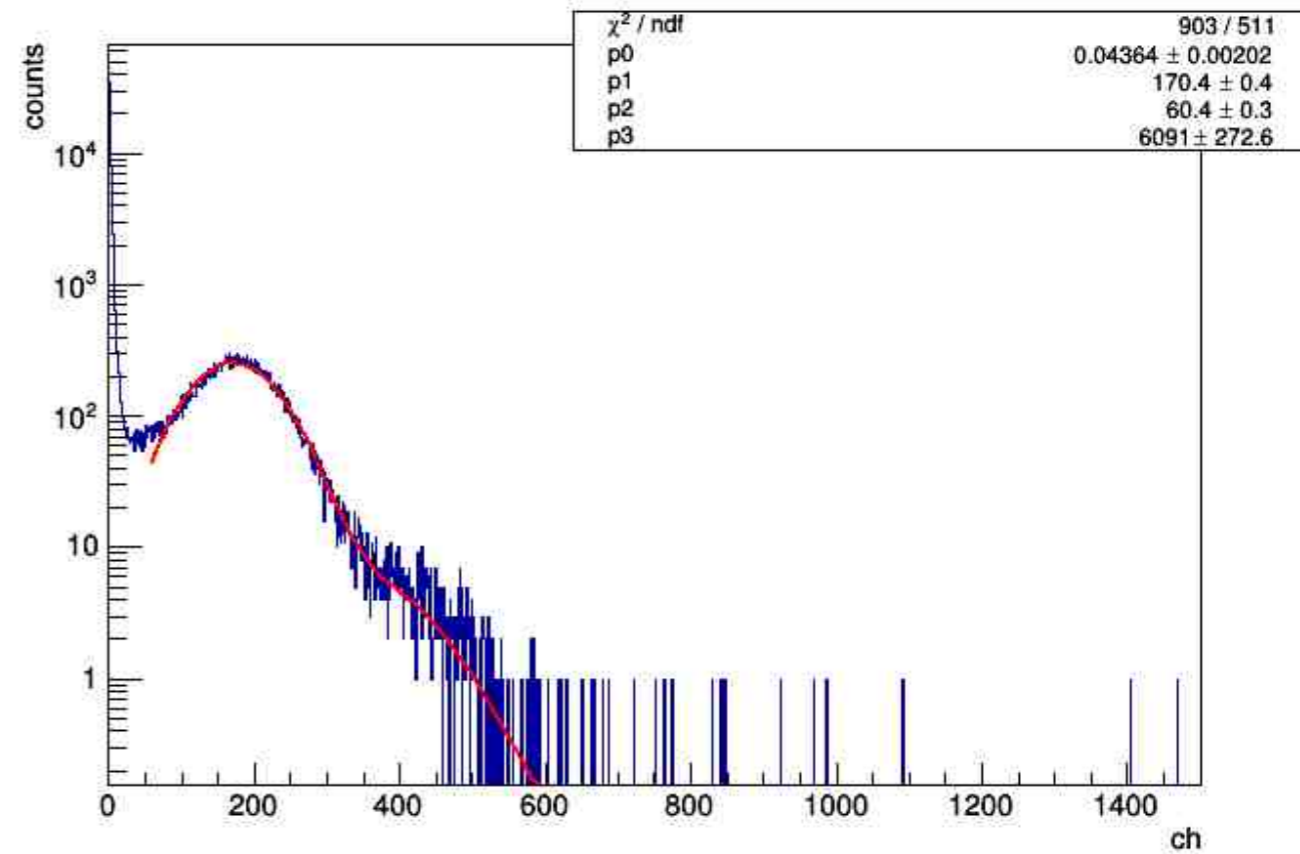


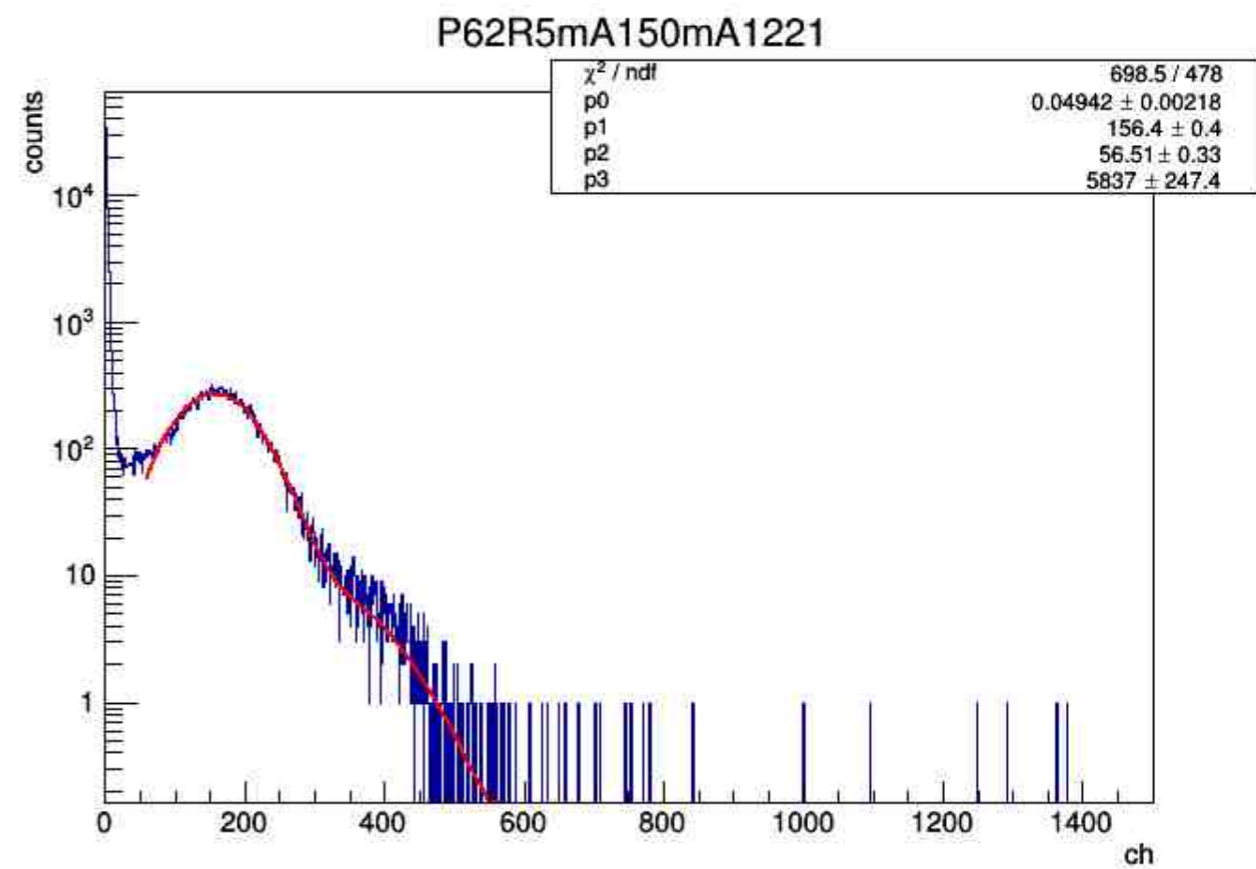
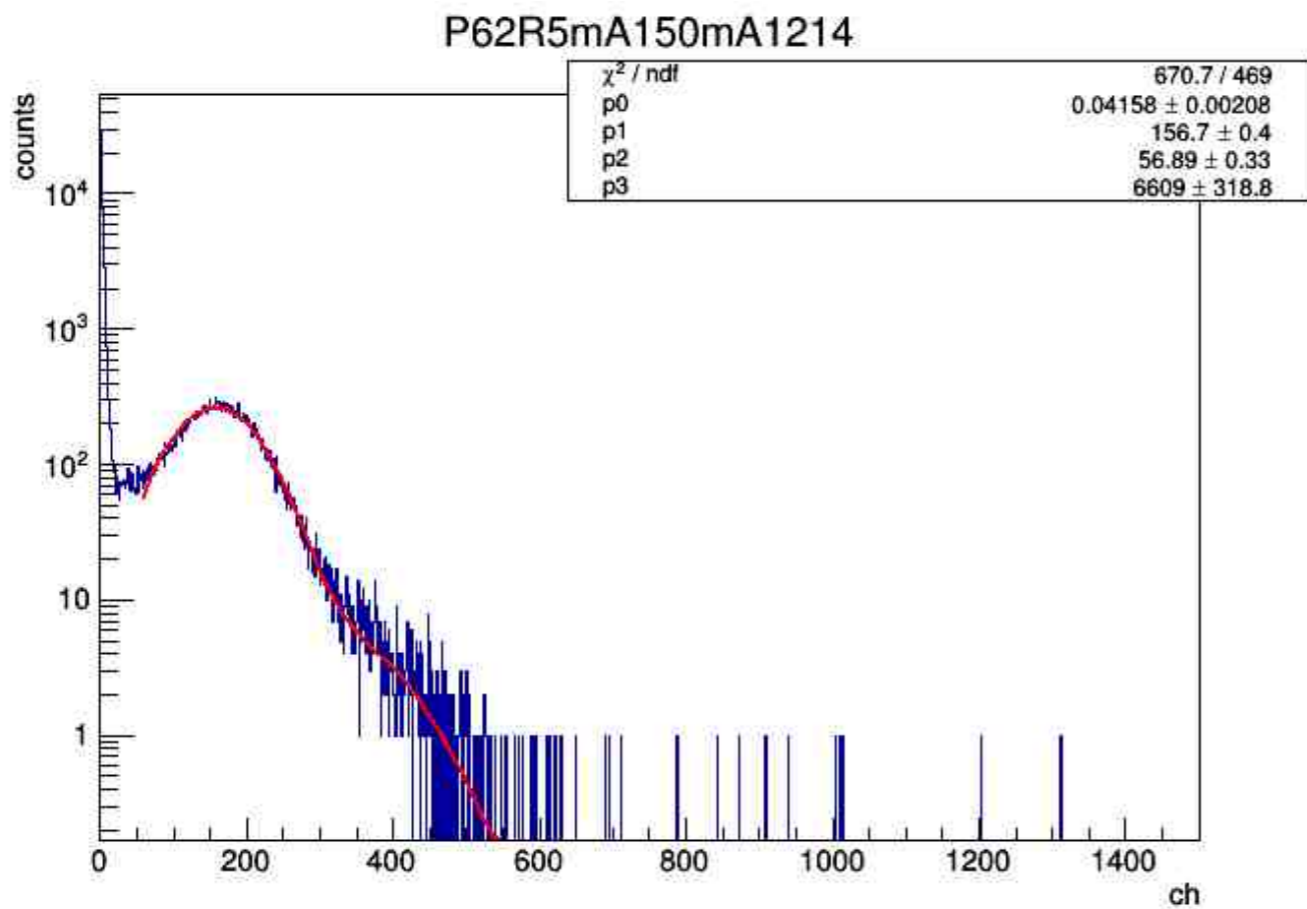
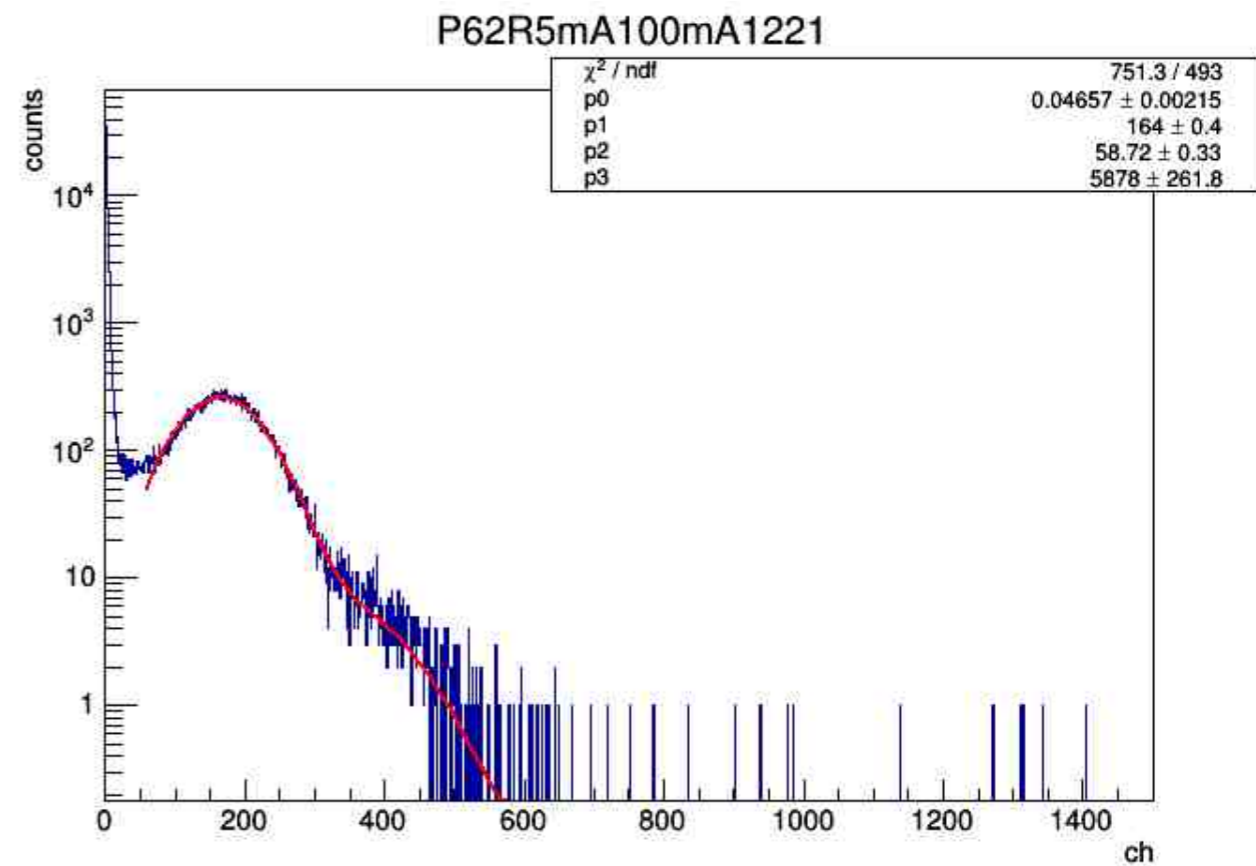
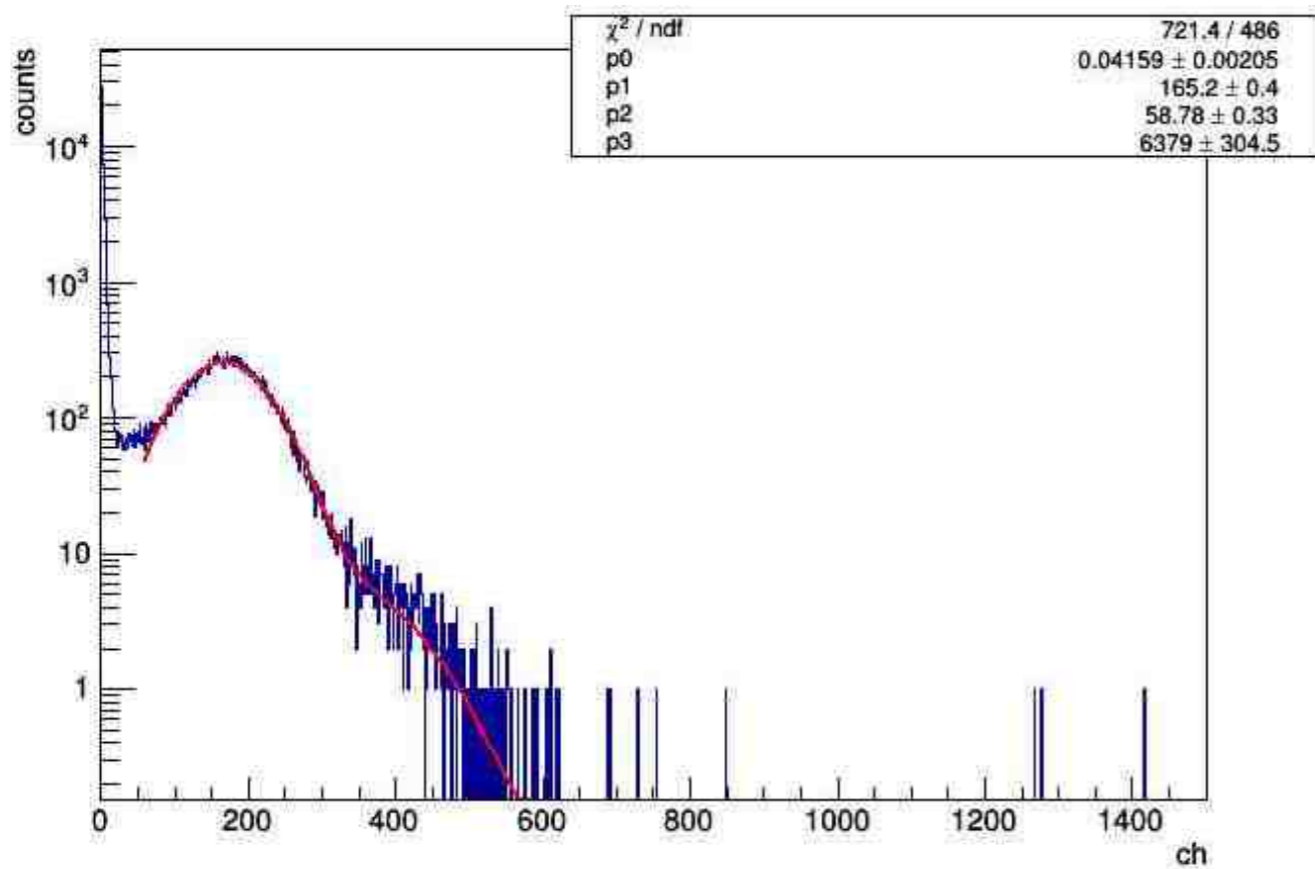


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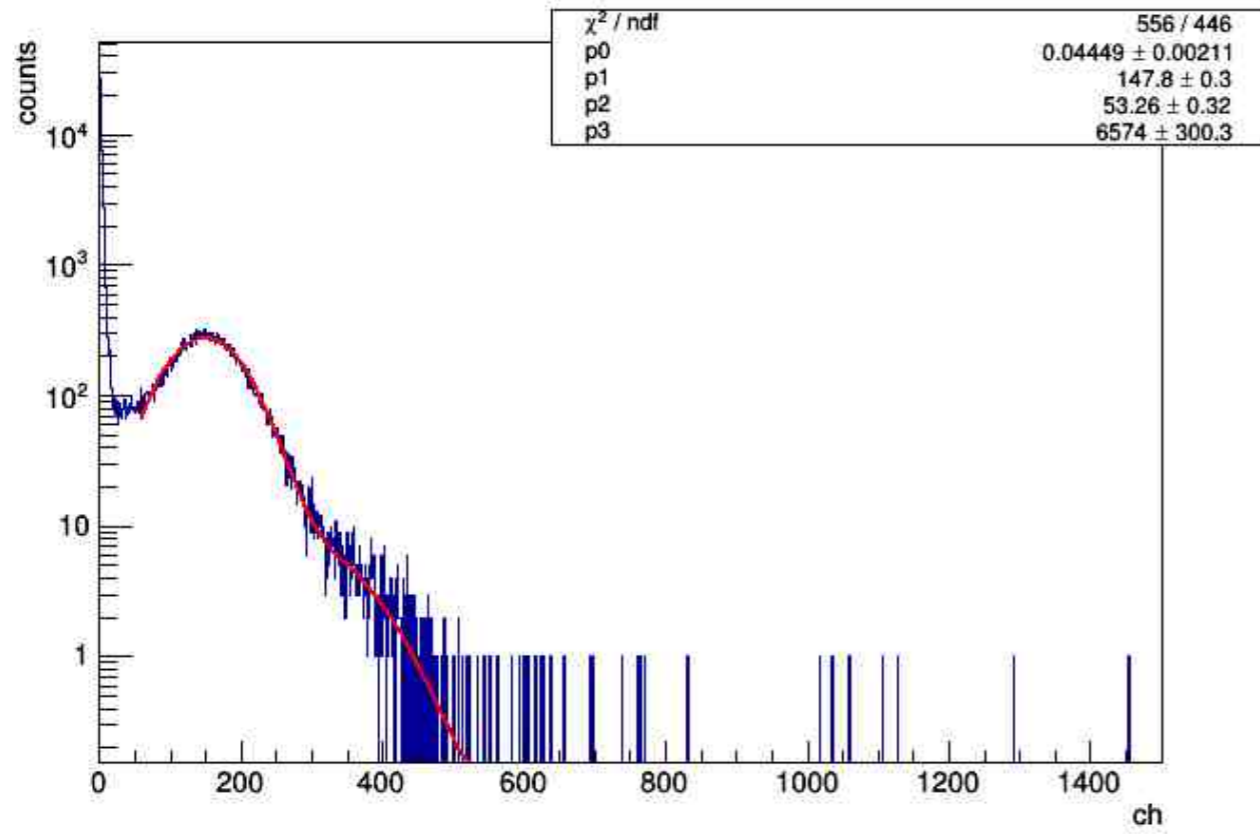


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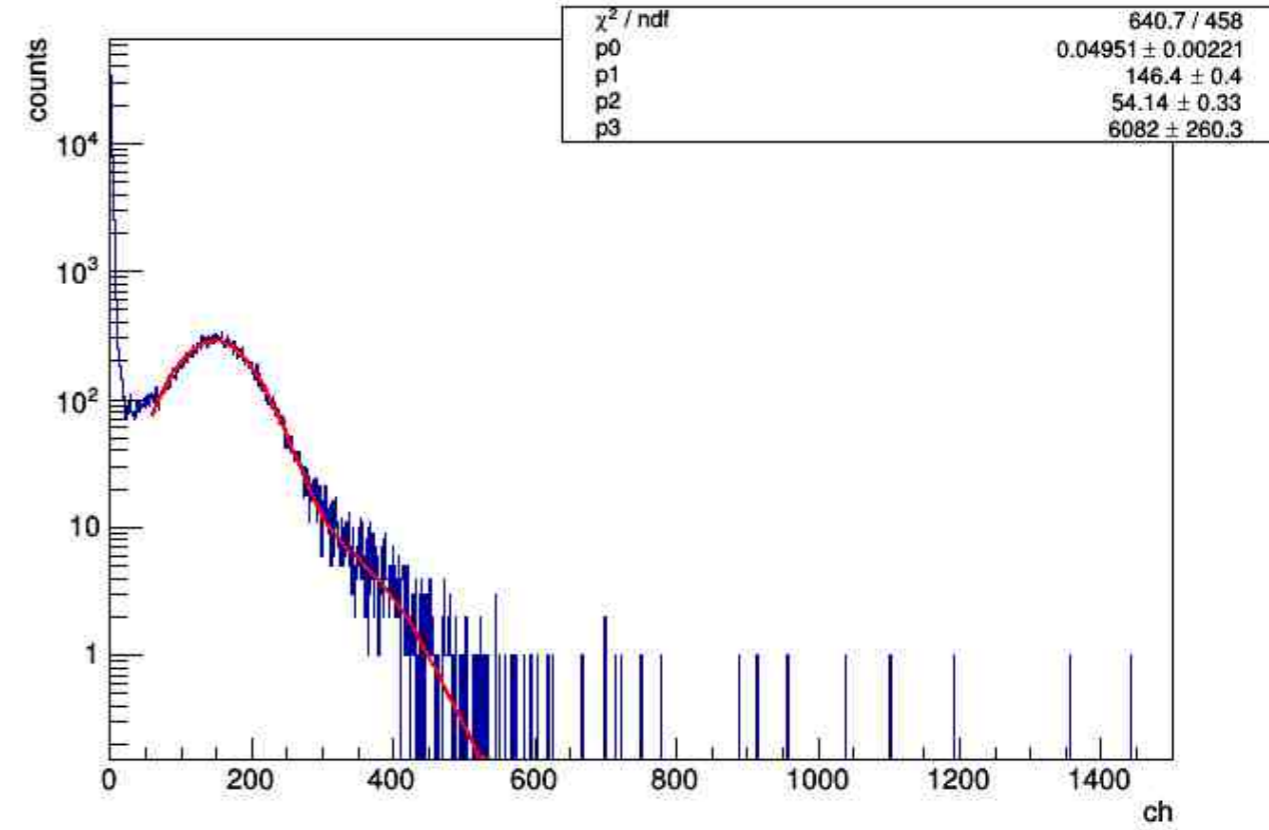




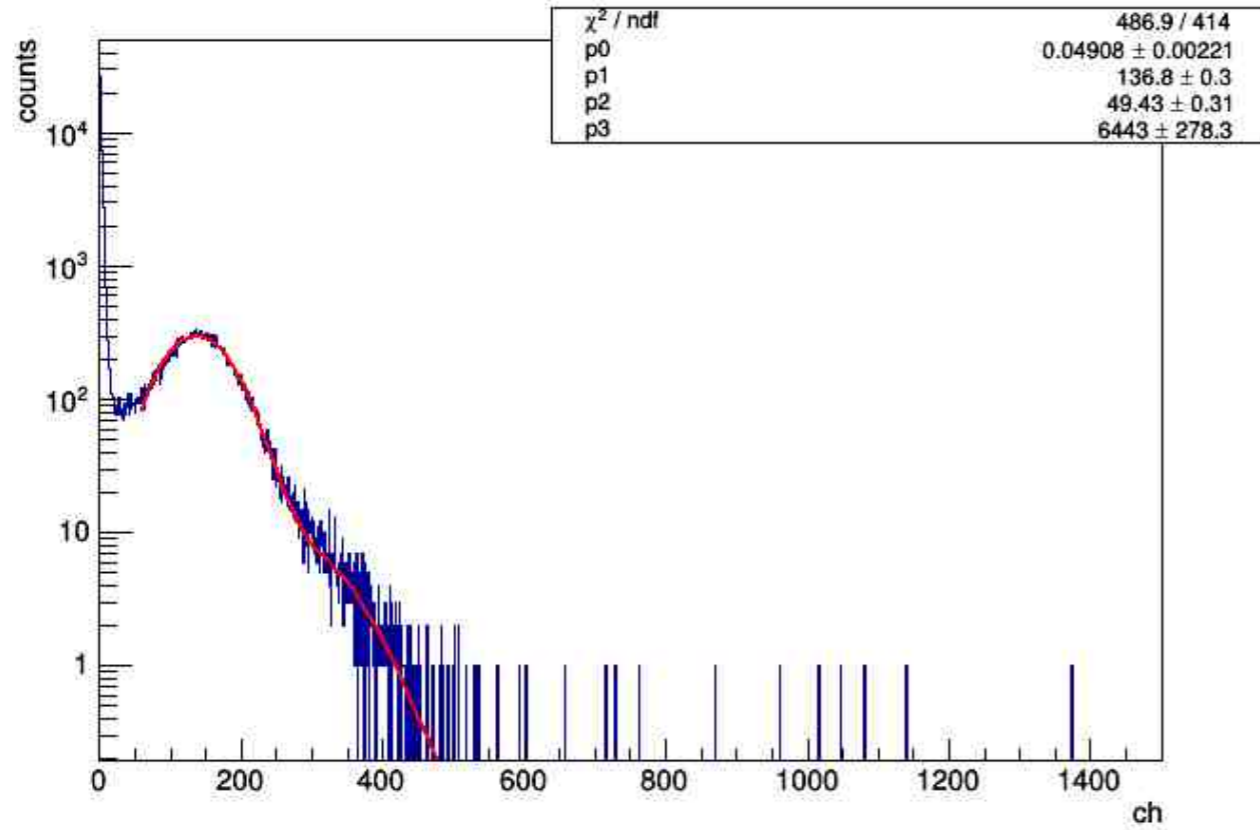
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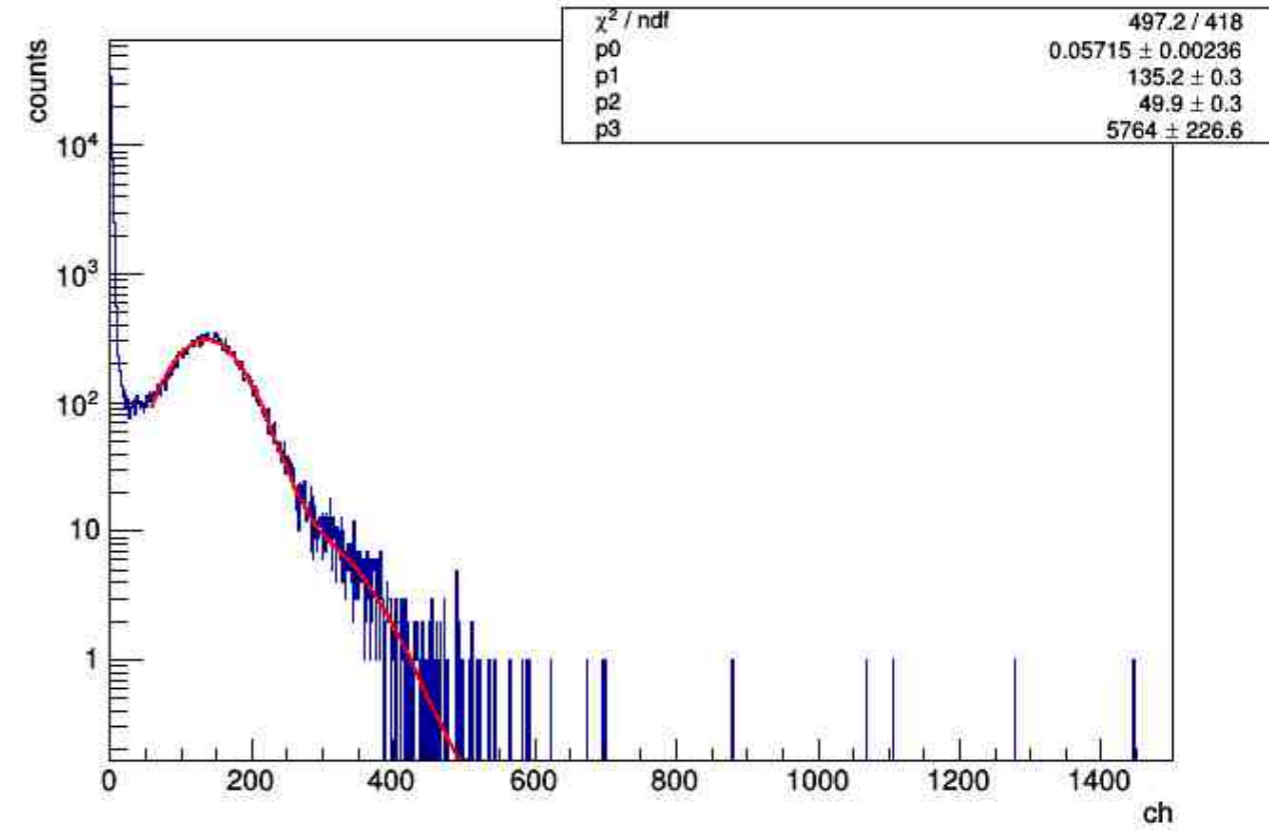
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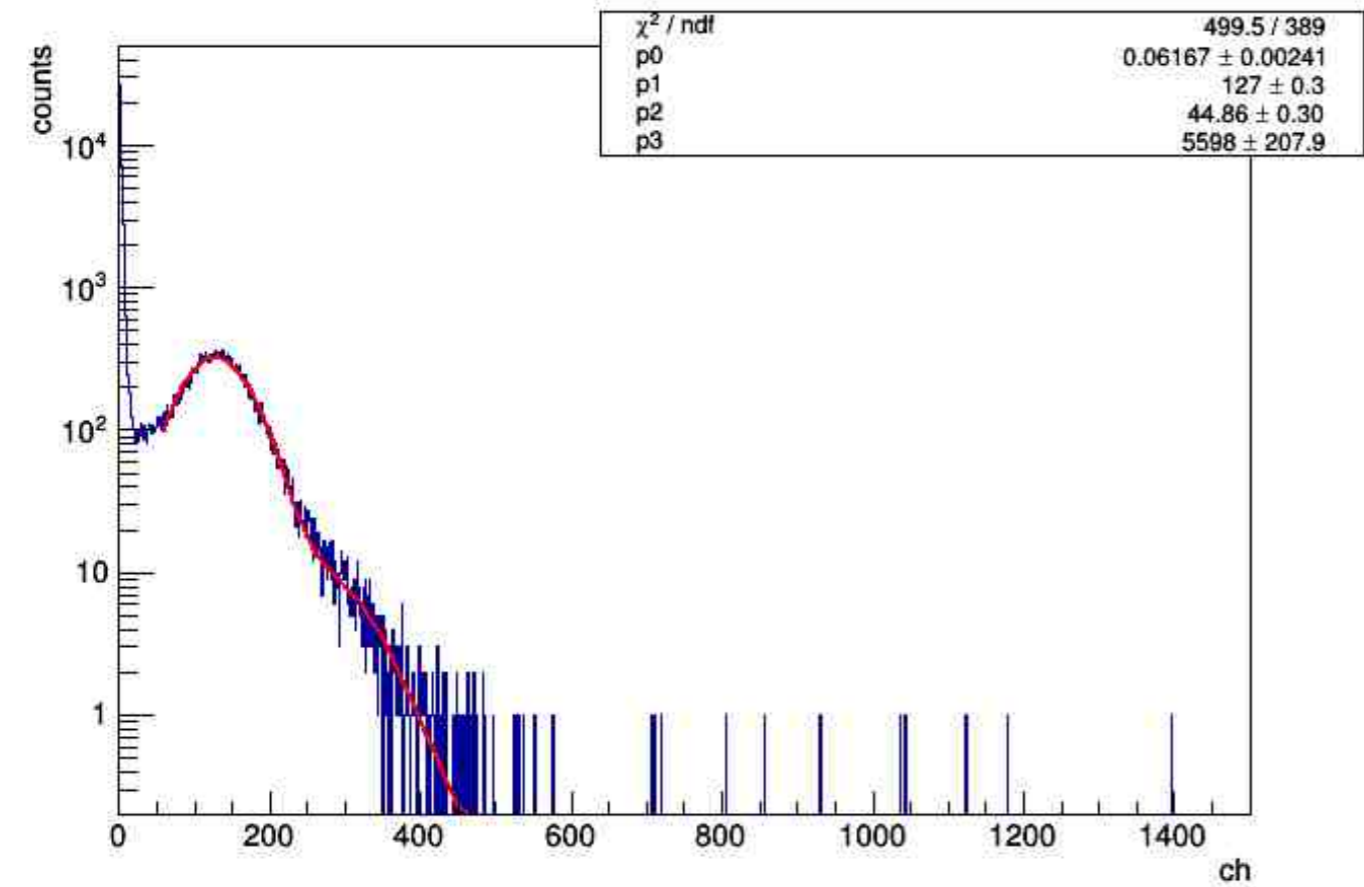


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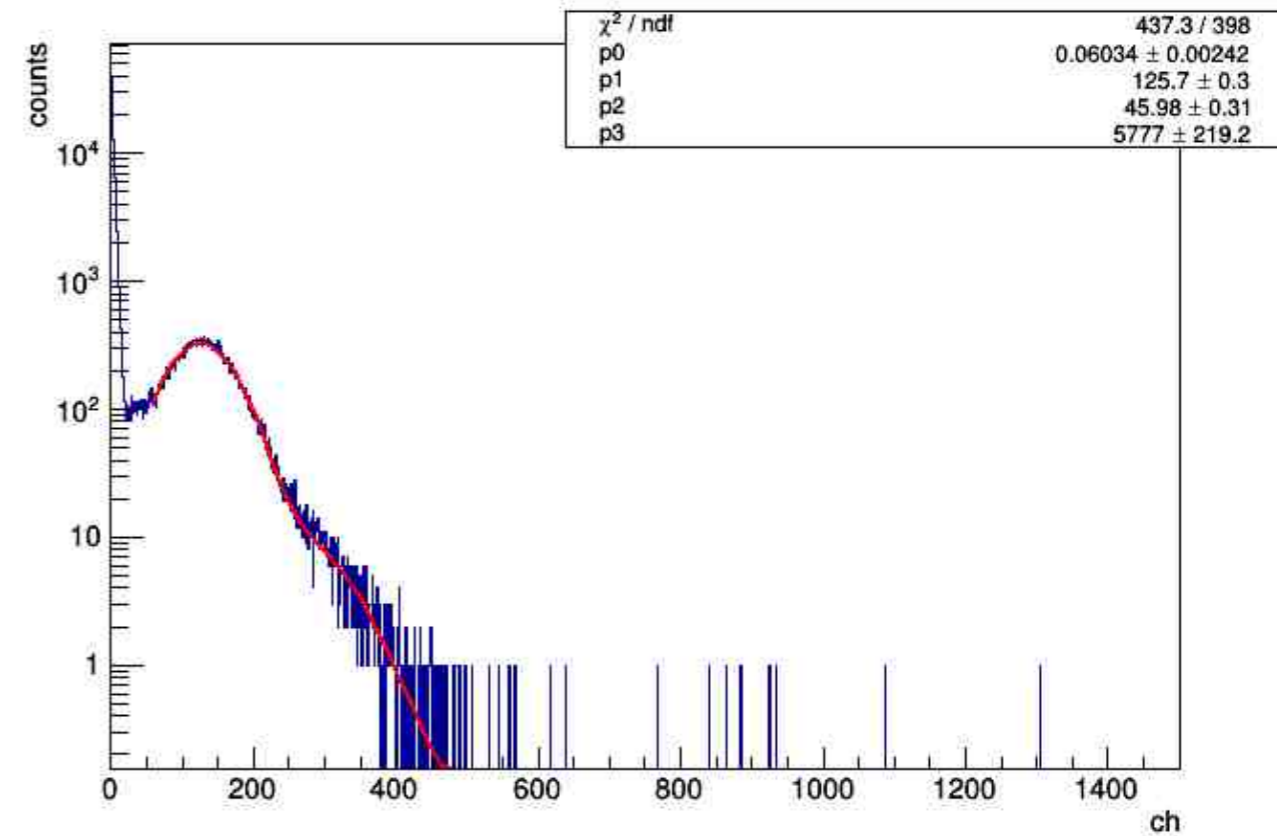




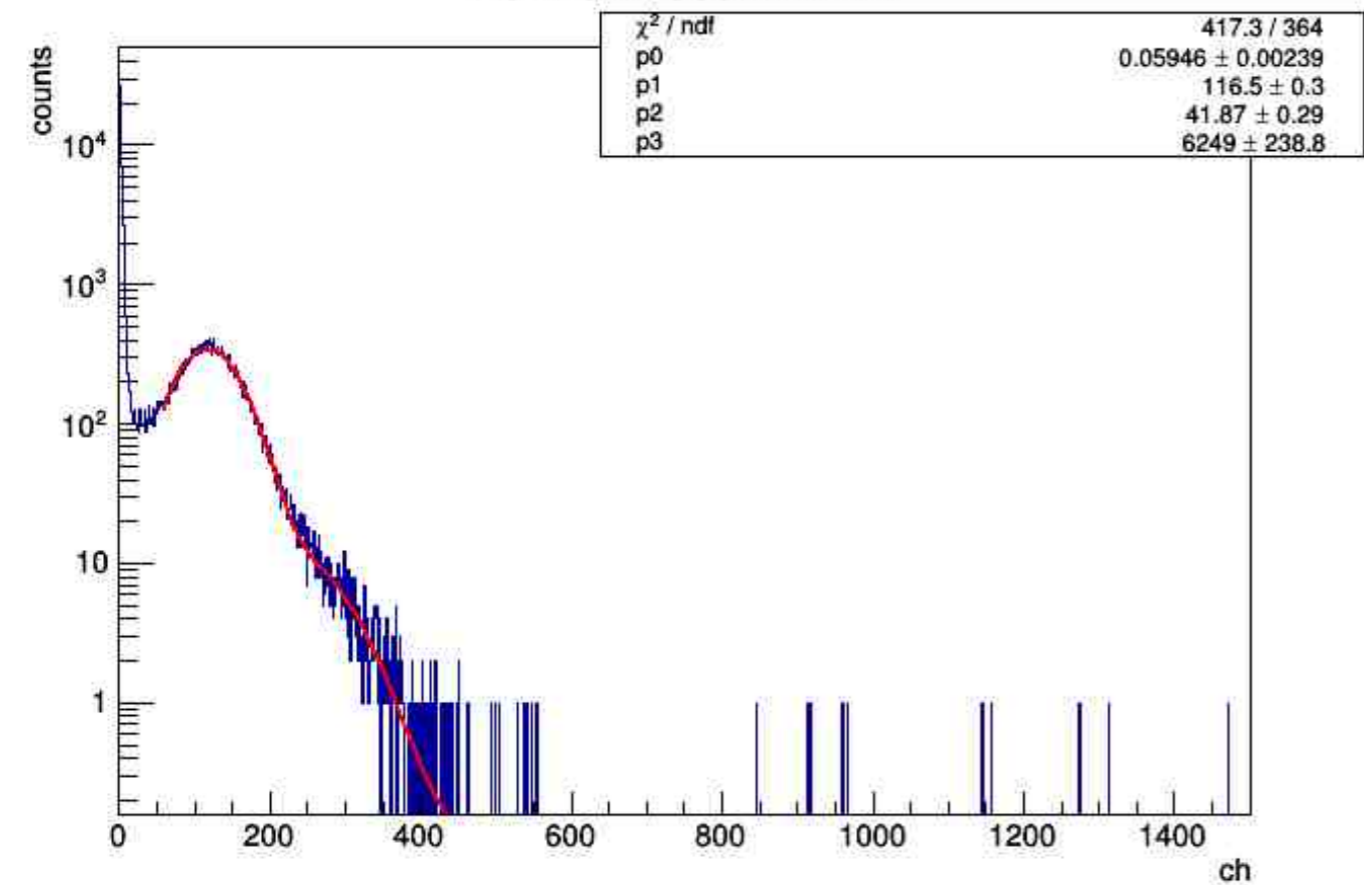
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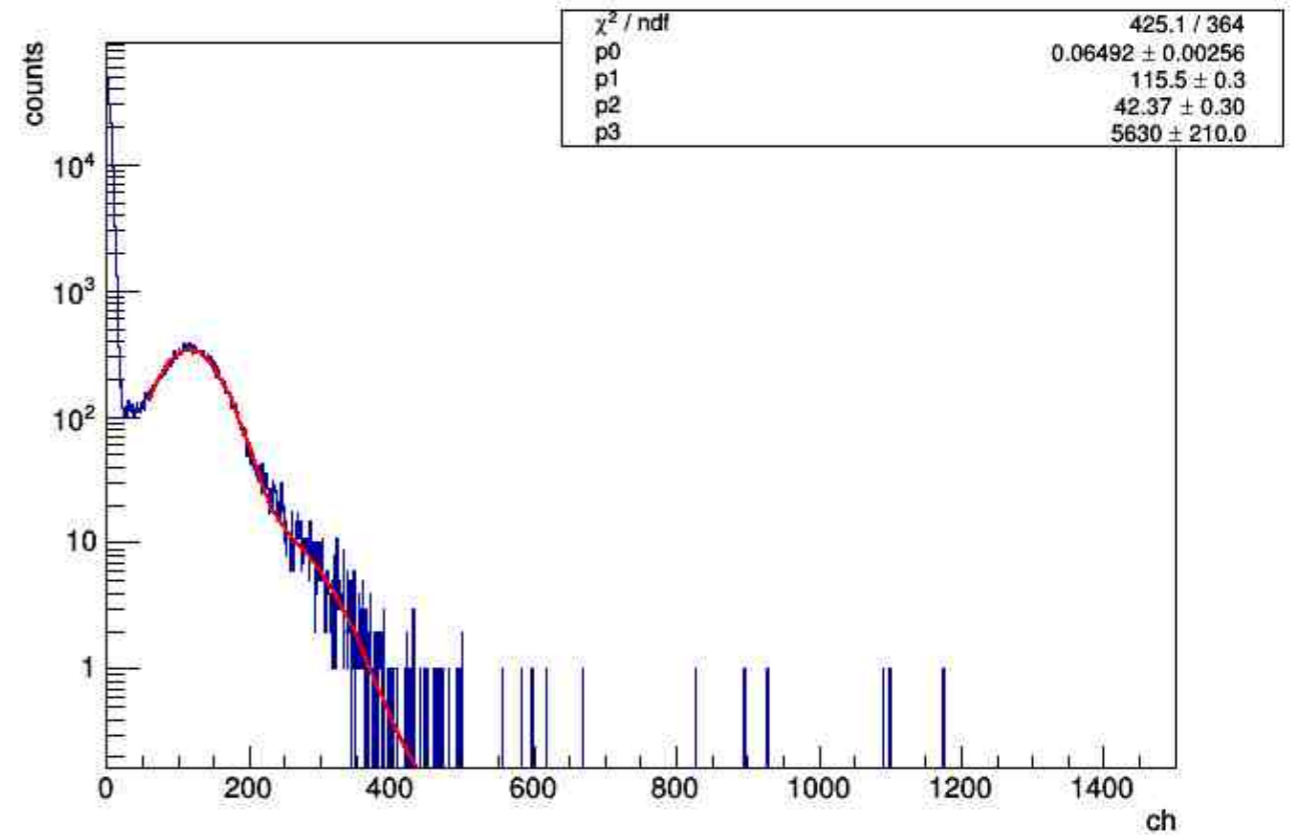
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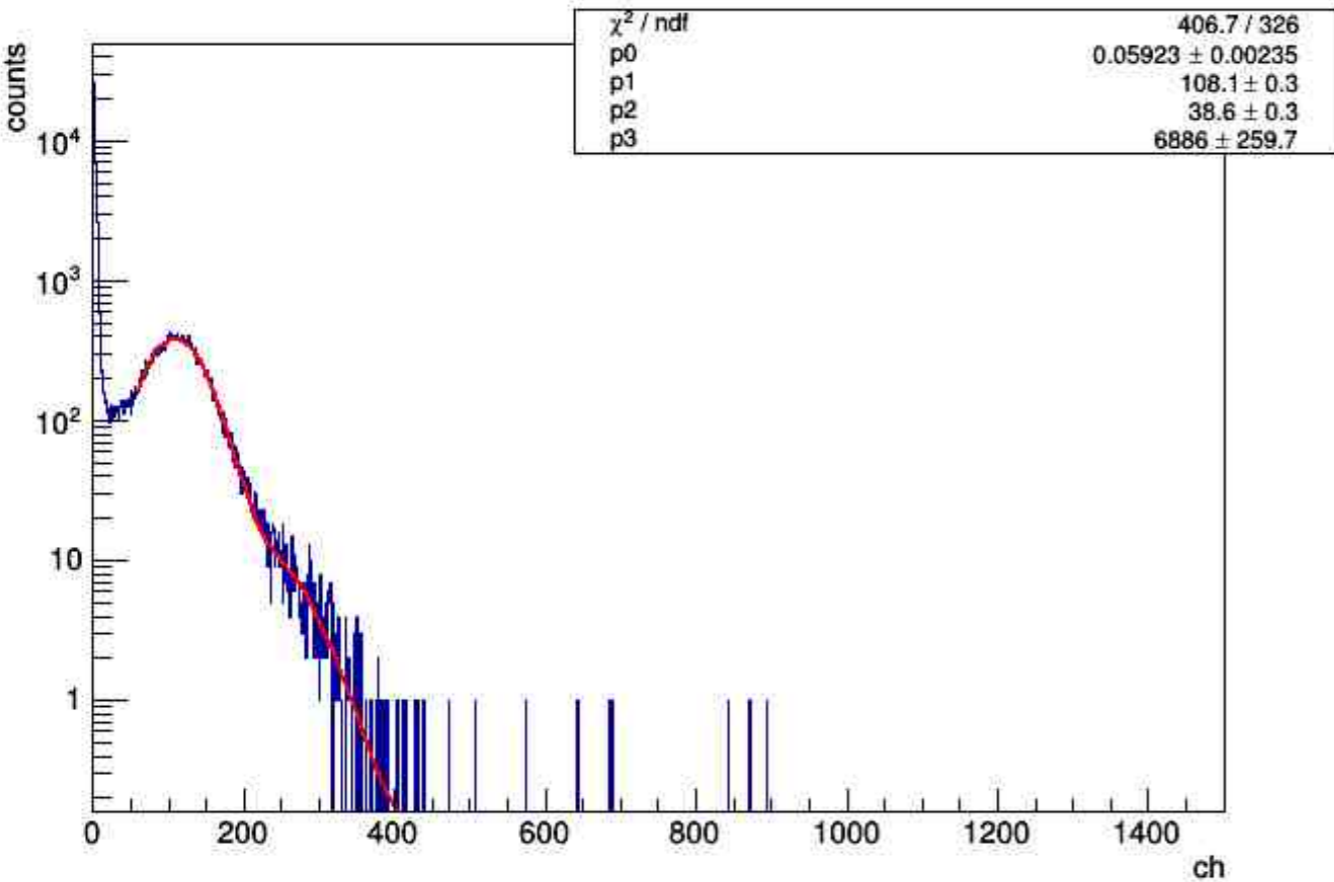
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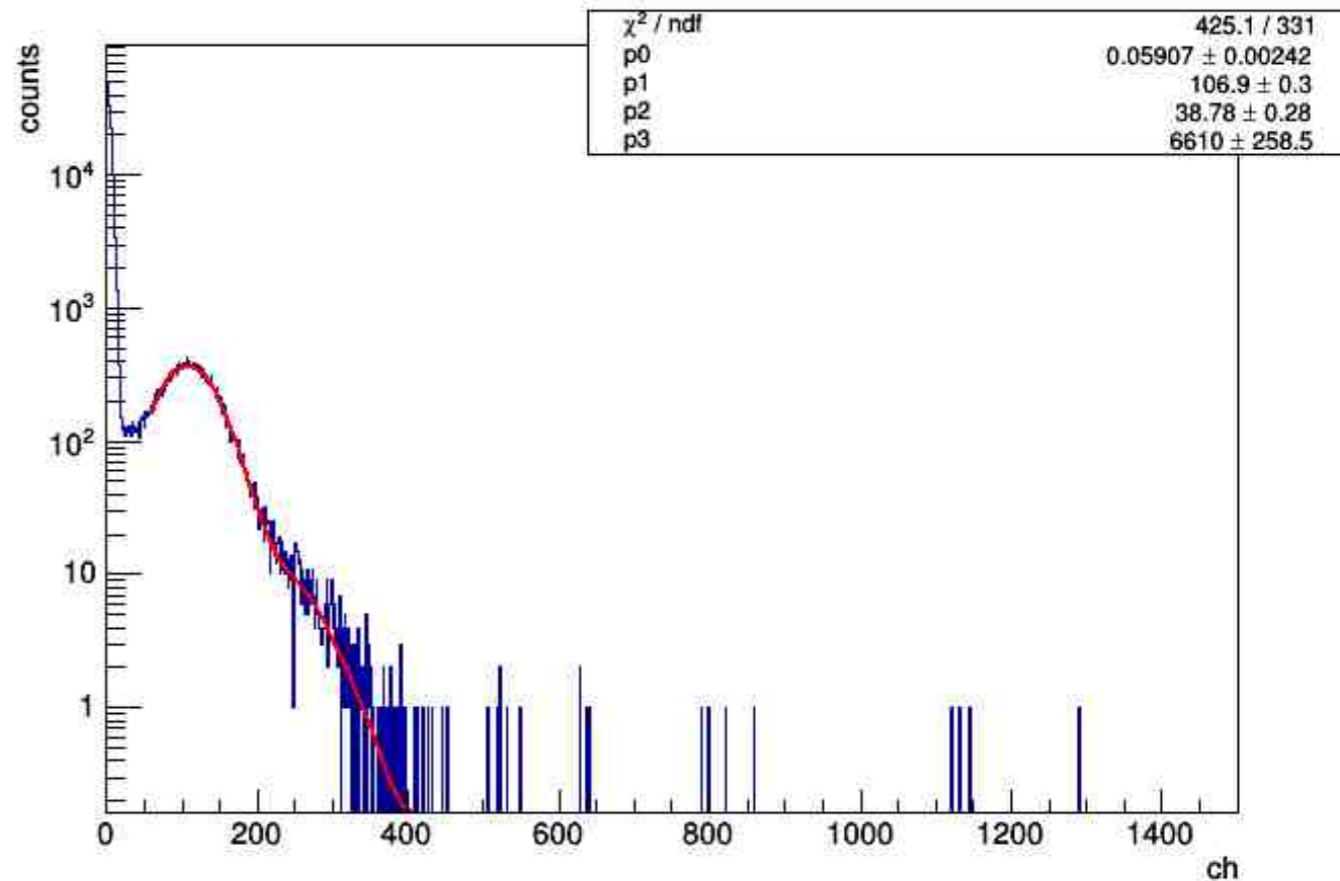
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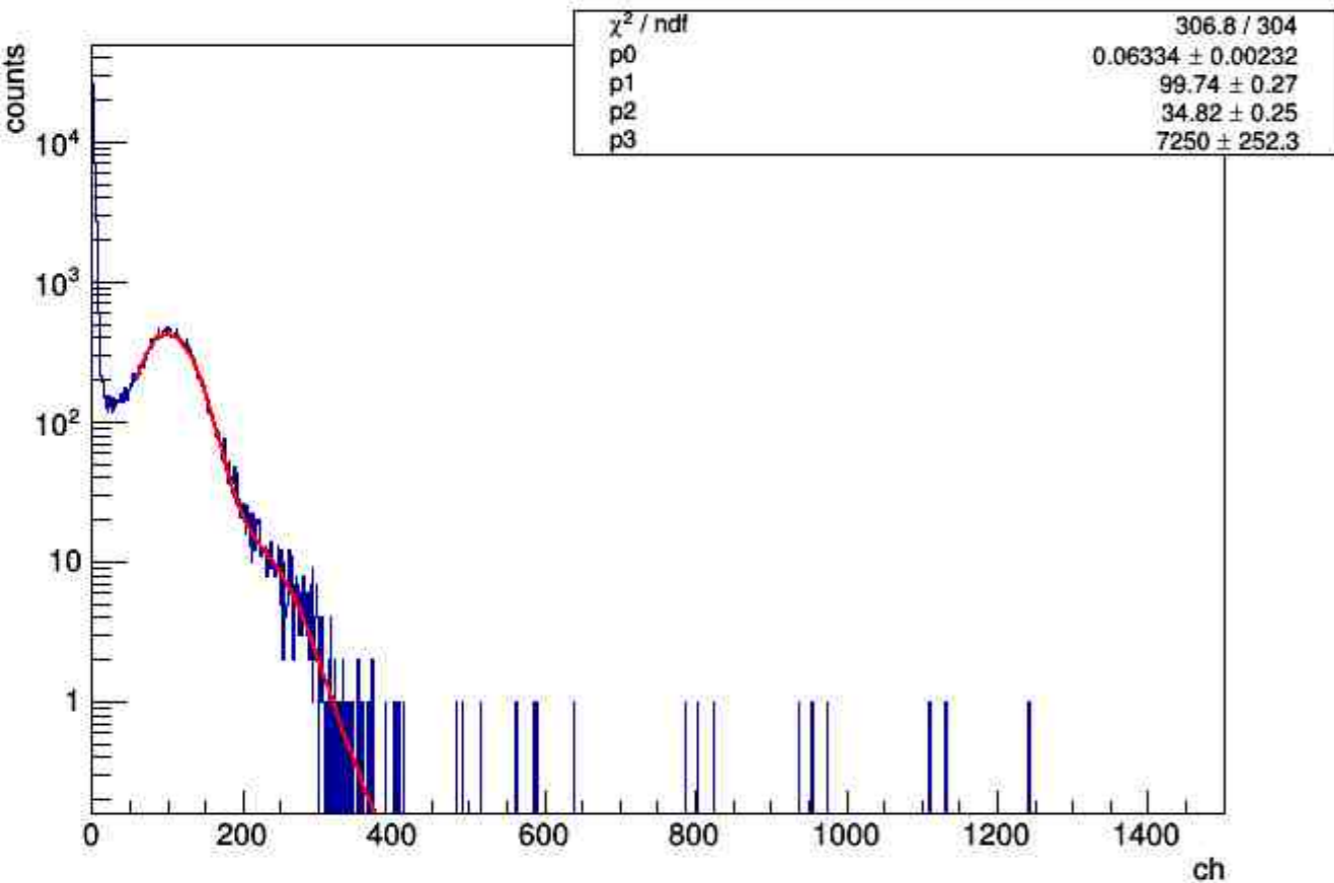
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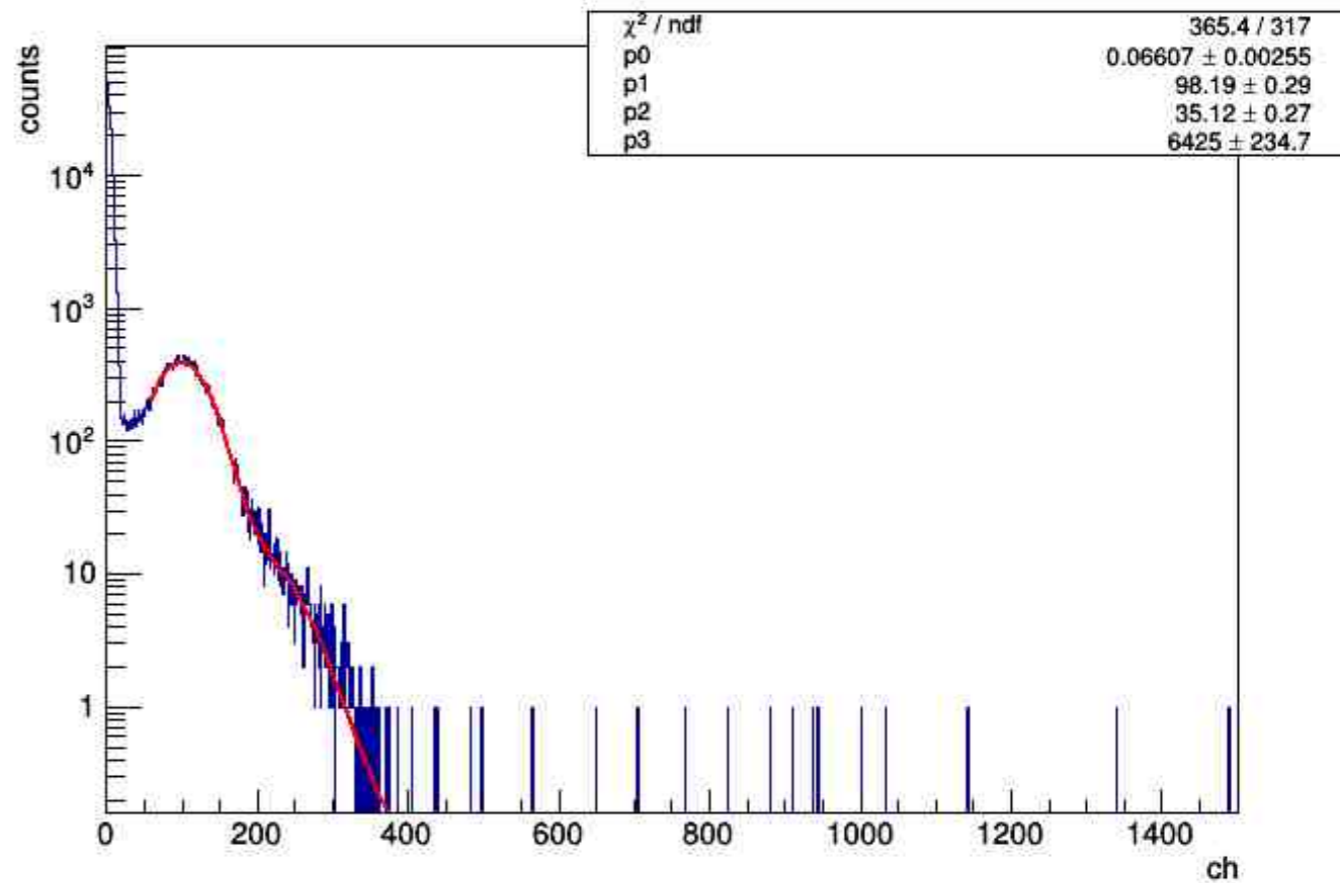
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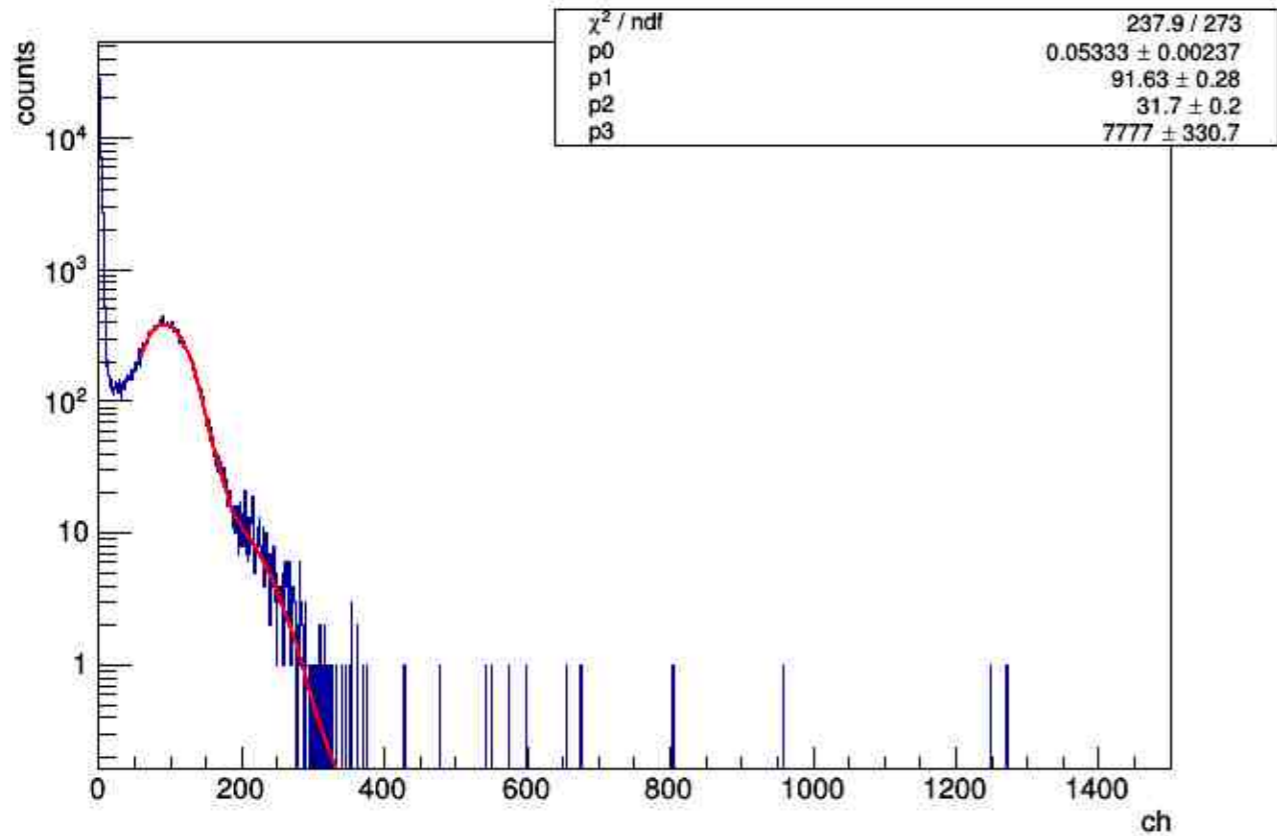


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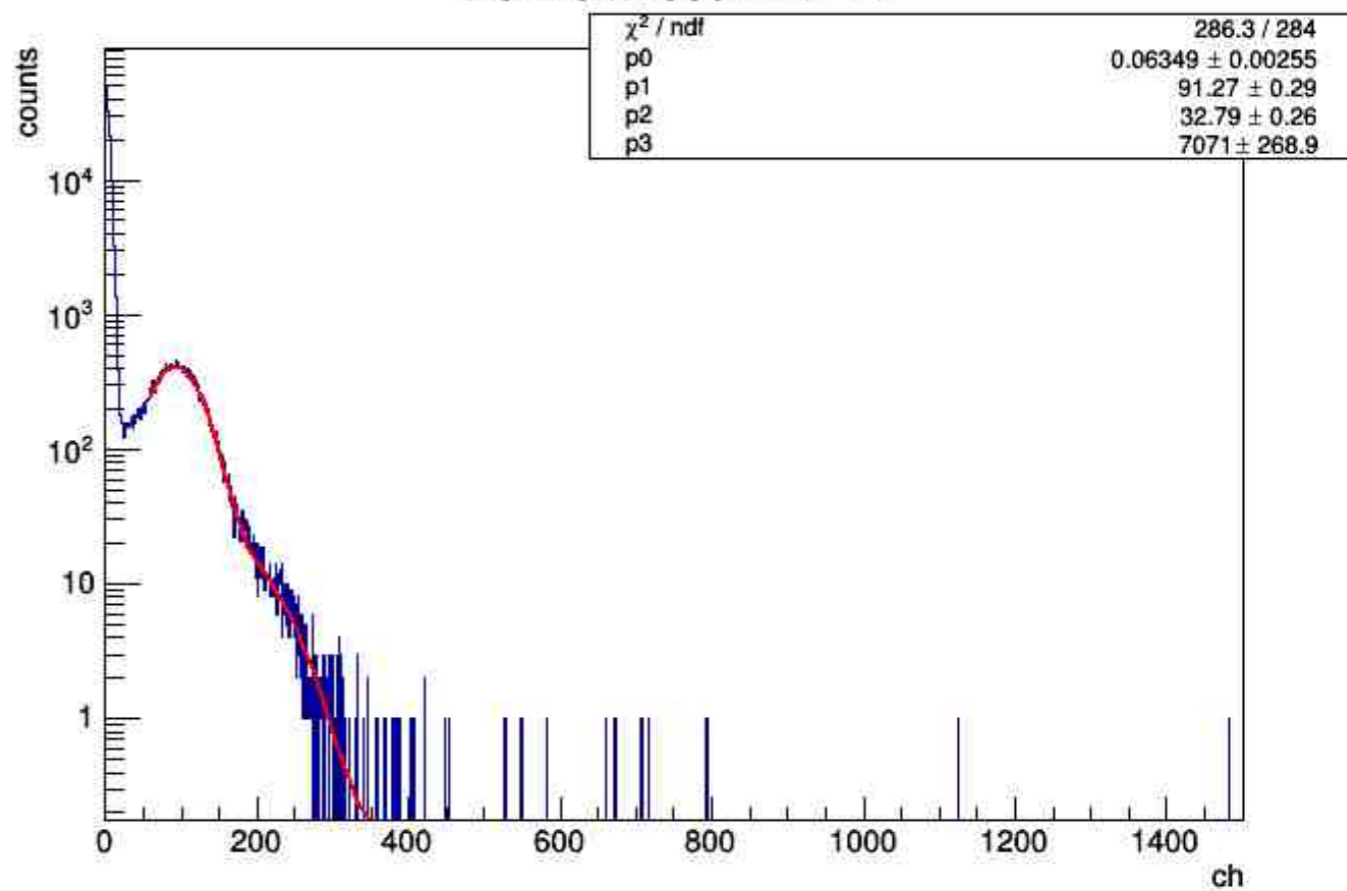




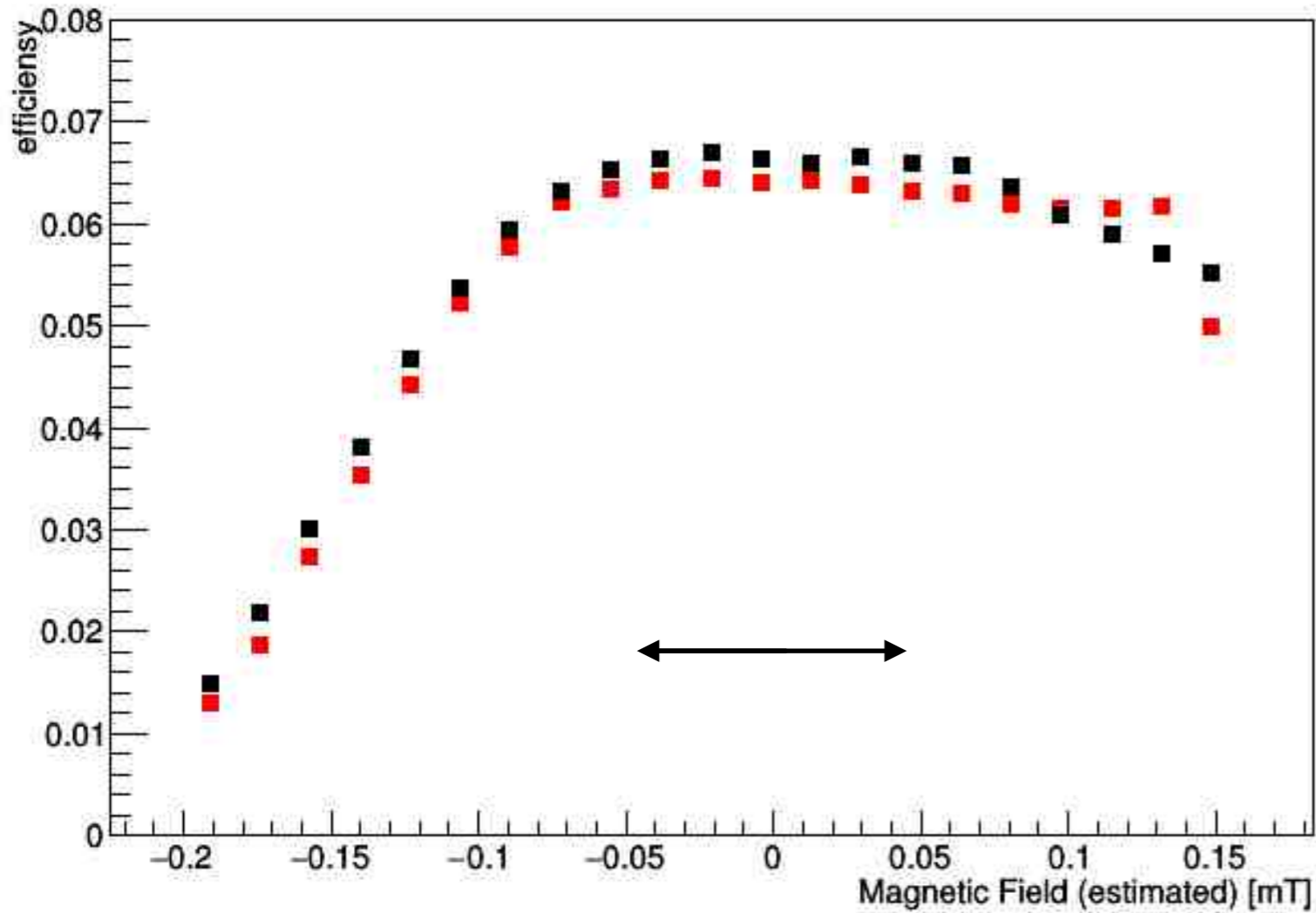
P62R5mA500mA1214



P62R5mA500mA1221



Efficiency



Earth magnetic field in Japan is about 46  $\mu\text{T}$

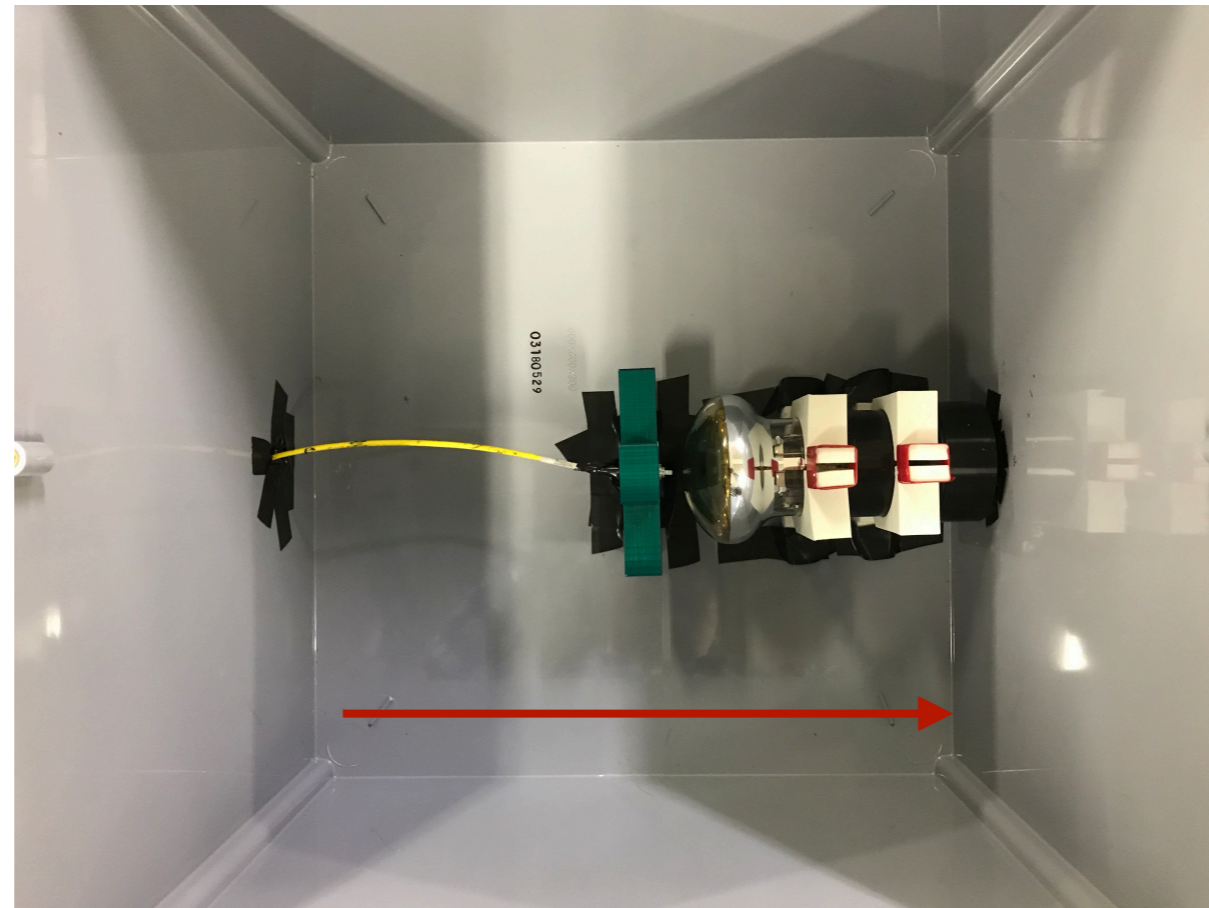
Red:1st time

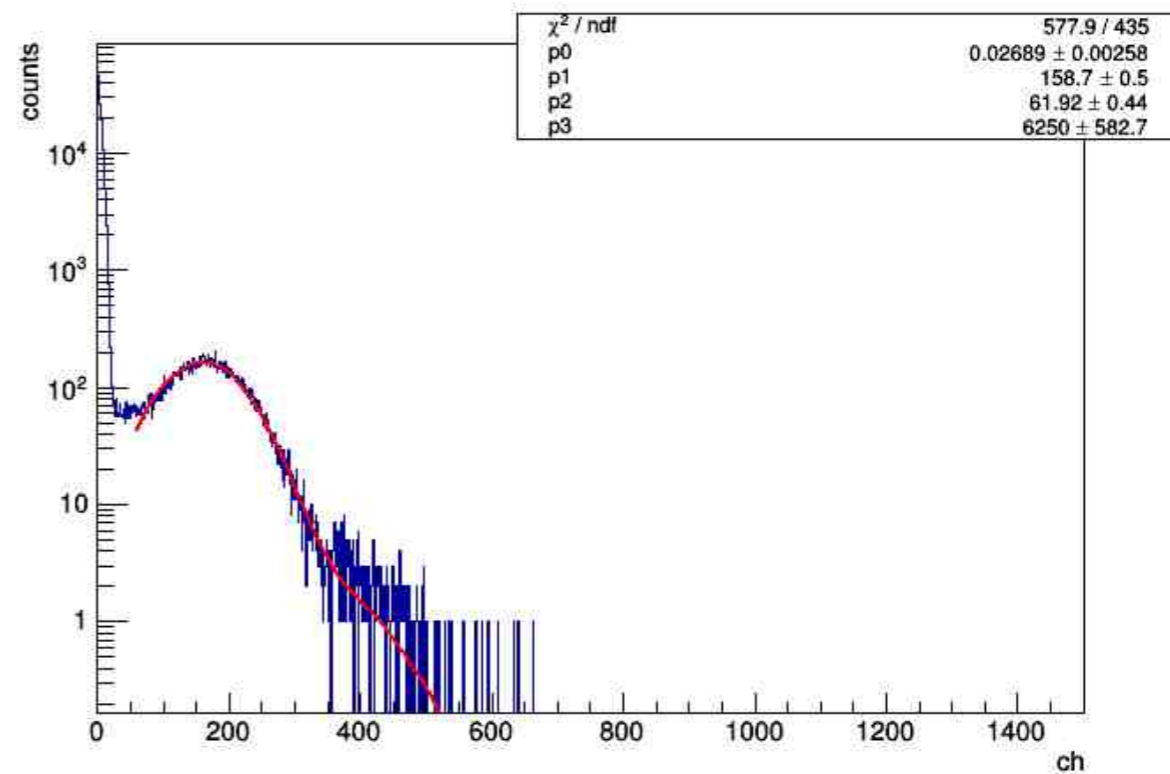
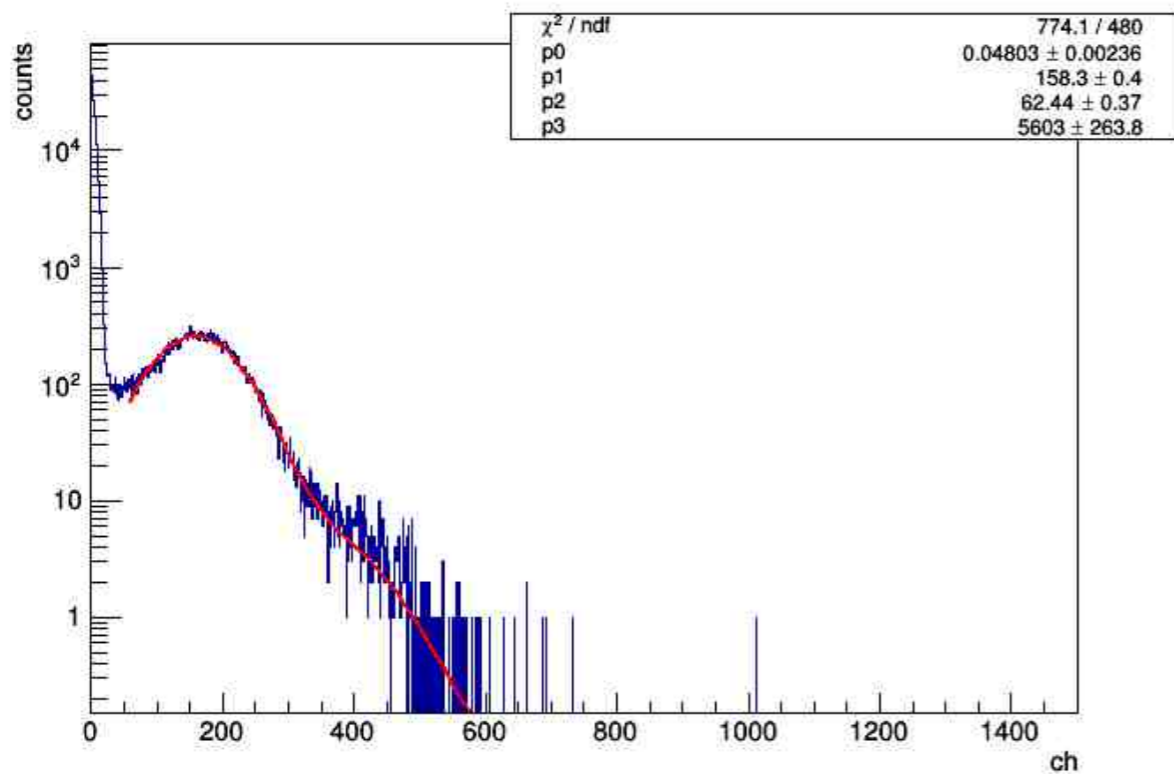
B-field	efficiency
0.148887	0.049829
0.131907	0.061567
0.114928	0.061396
0.097948	0.06134
0.080969	0.061912
0.063989	0.062833
0.047009	0.063205
0.03003	0.063836
0.01305	0.064088
-0.00393	0.063875
-0.02091	0.064412
-0.03789	0.06418
-0.05487	0.06341
-0.07185	0.062132
-0.08883	0.057674
-0.10581	0.052137
-0.12279	0.044044
-0.13977	0.035312
-0.15675	0.027146
-0.17373	0.018686
-0.19071	0.01291

Black:2nd time

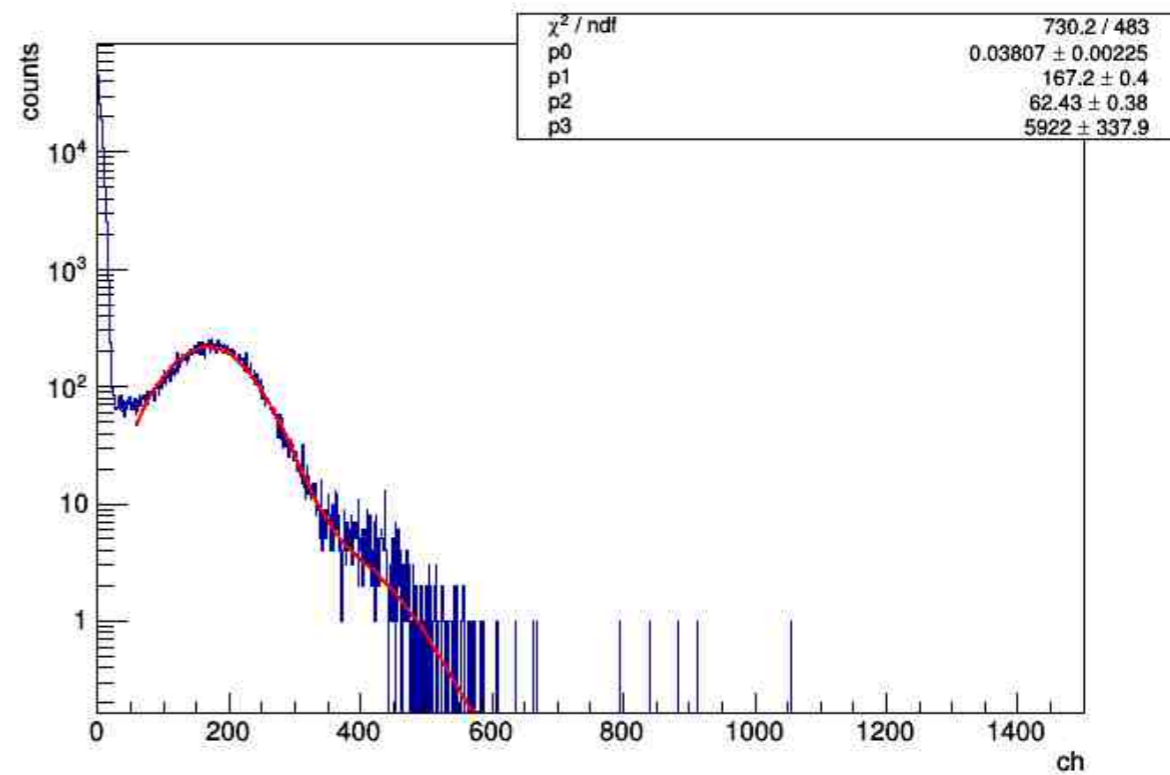
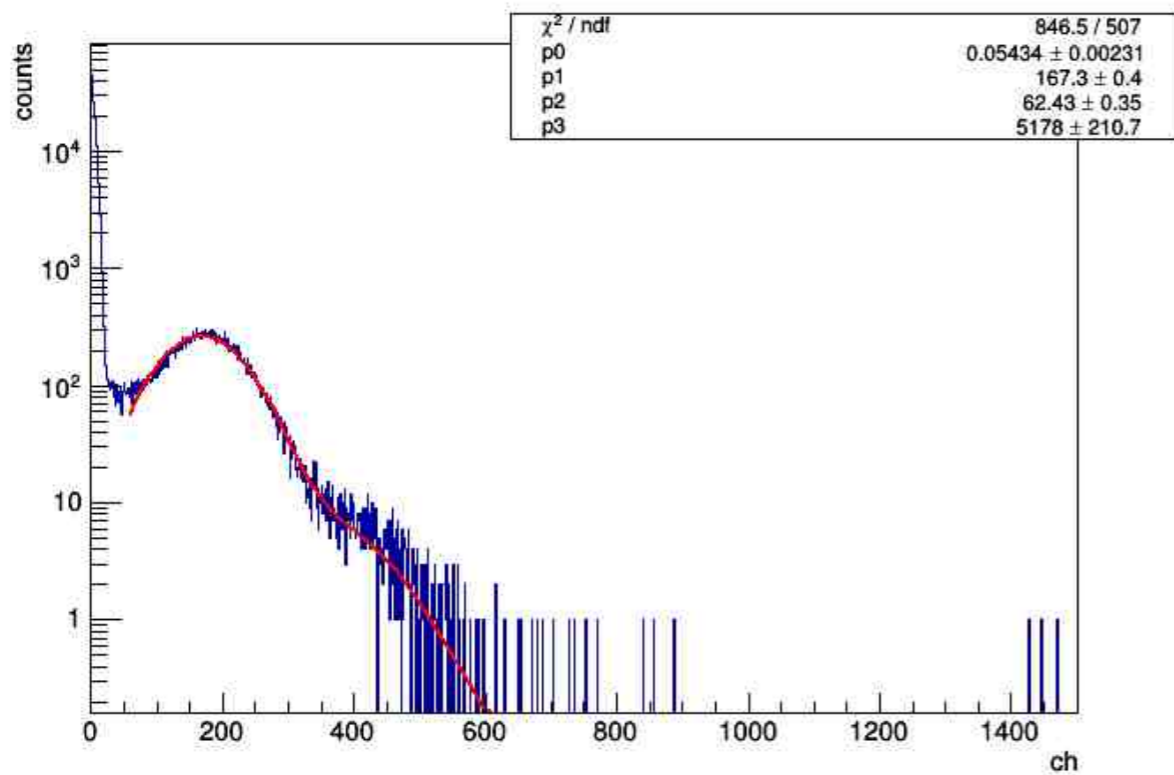
B-field	efficiency
0.148887	0.05519
0.131907	0.05703
0.114928	0.058826
0.097948	0.060705
0.080969	0.063561
0.063989	0.065677
0.047009	0.065896
0.03003	0.066486
0.01305	0.065914
-0.00393	0.066321
-0.02091	0.066991
-0.03789	0.066166
-0.05487	0.065155
-0.07185	0.063136
-0.08883	0.0592
-0.10581	0.053606
-0.12279	0.046748
-0.13977	0.037953
-0.15675	0.030045
-0.17373	0.021853
-0.19071	0.014886

I made B-field in the direction perpendicular to PMT's photoelectric surface.  
LED current was Pulse 62.5 mA.  
Then, I measured PMT's efficiency.  
I defined this red arrow as positive direction of B-field.



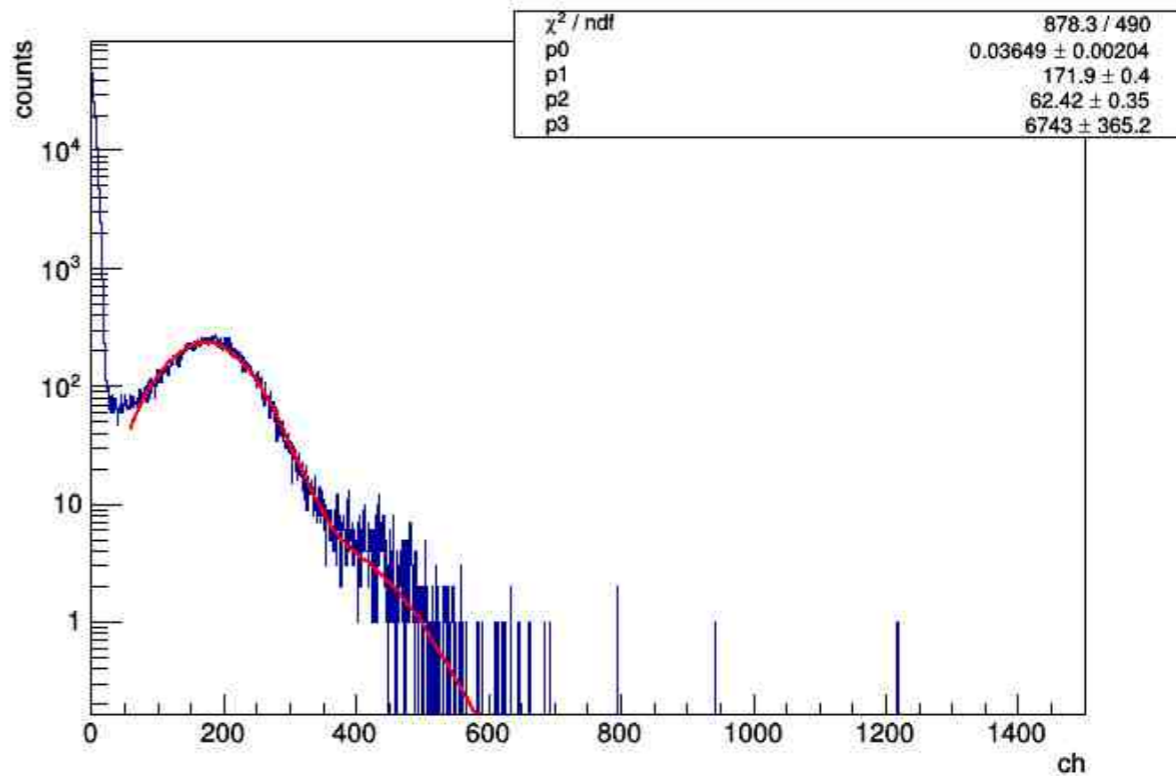
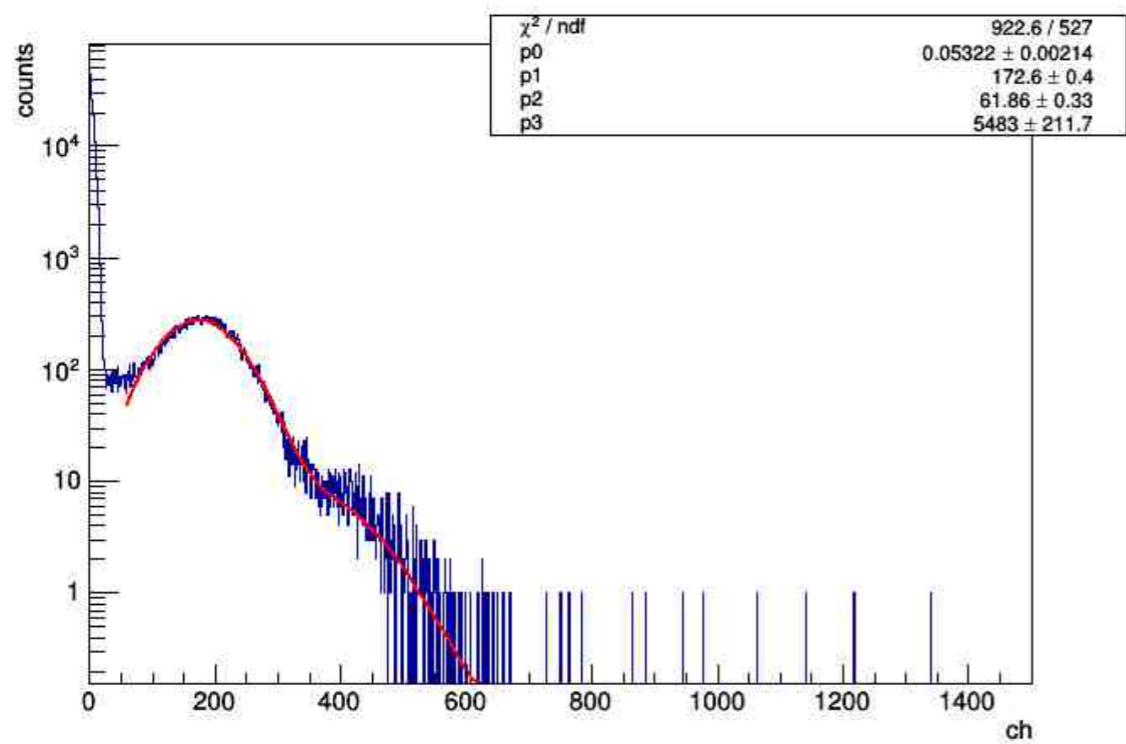


**-2000 mA**

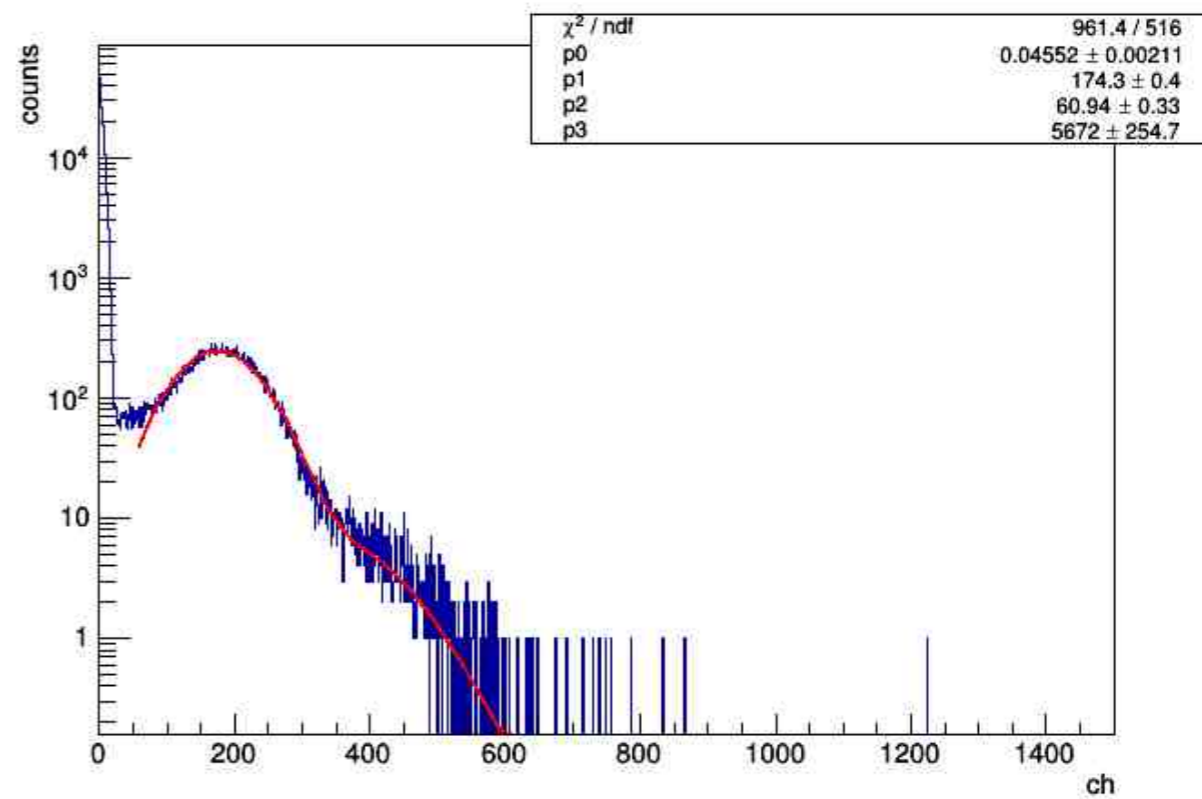
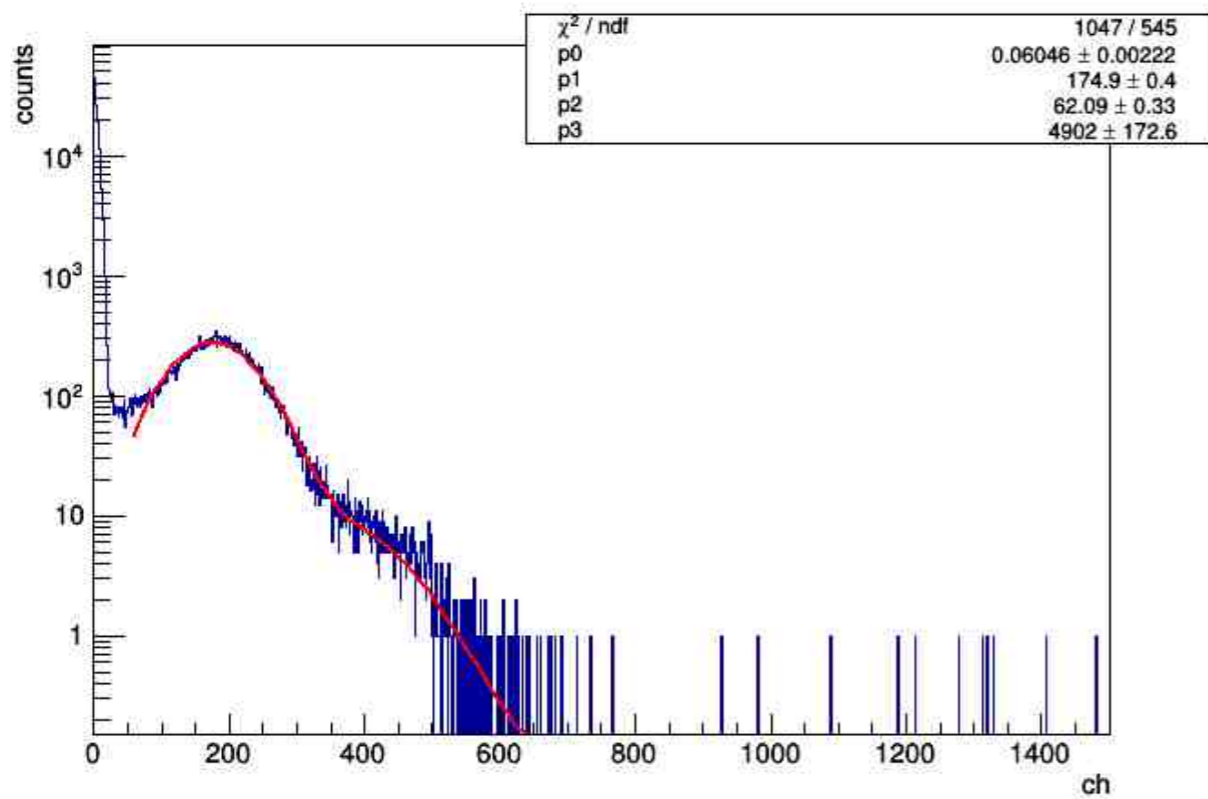


**-1500 mA**



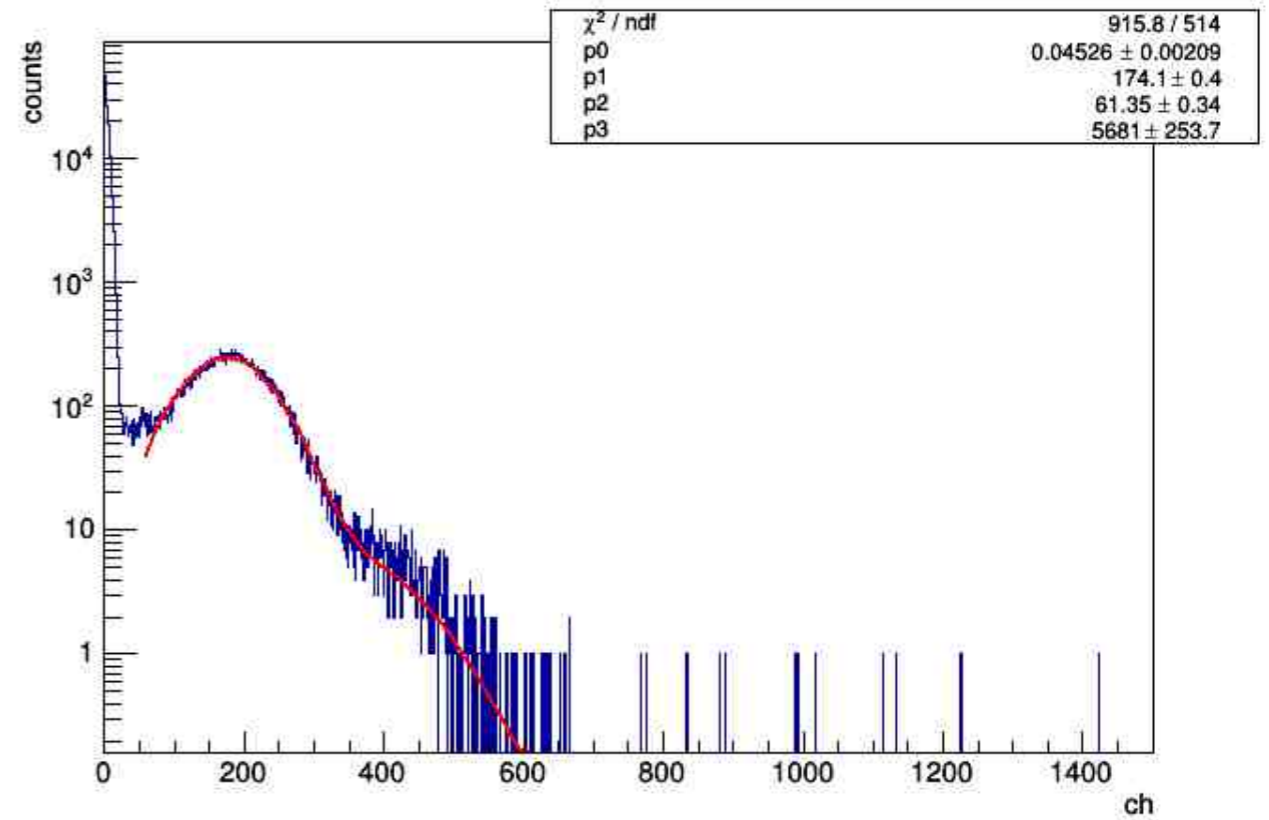
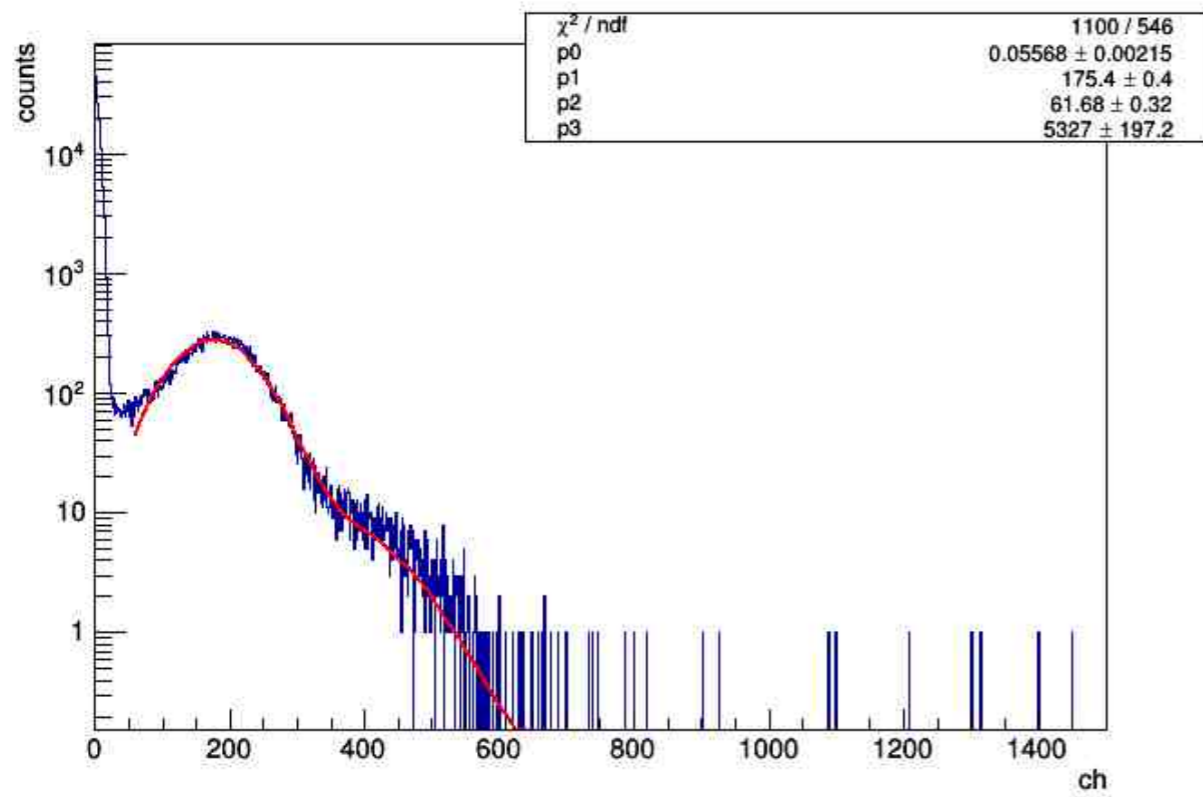


**-1000 mA**

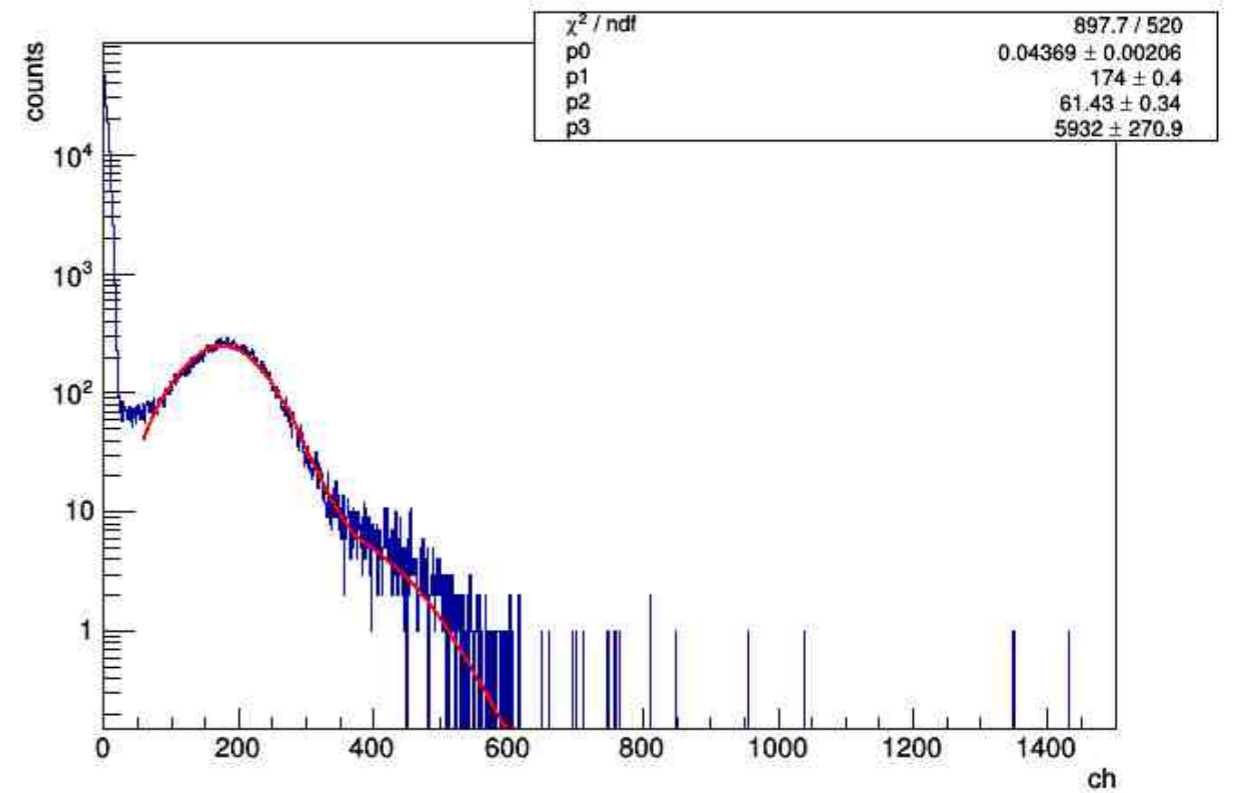
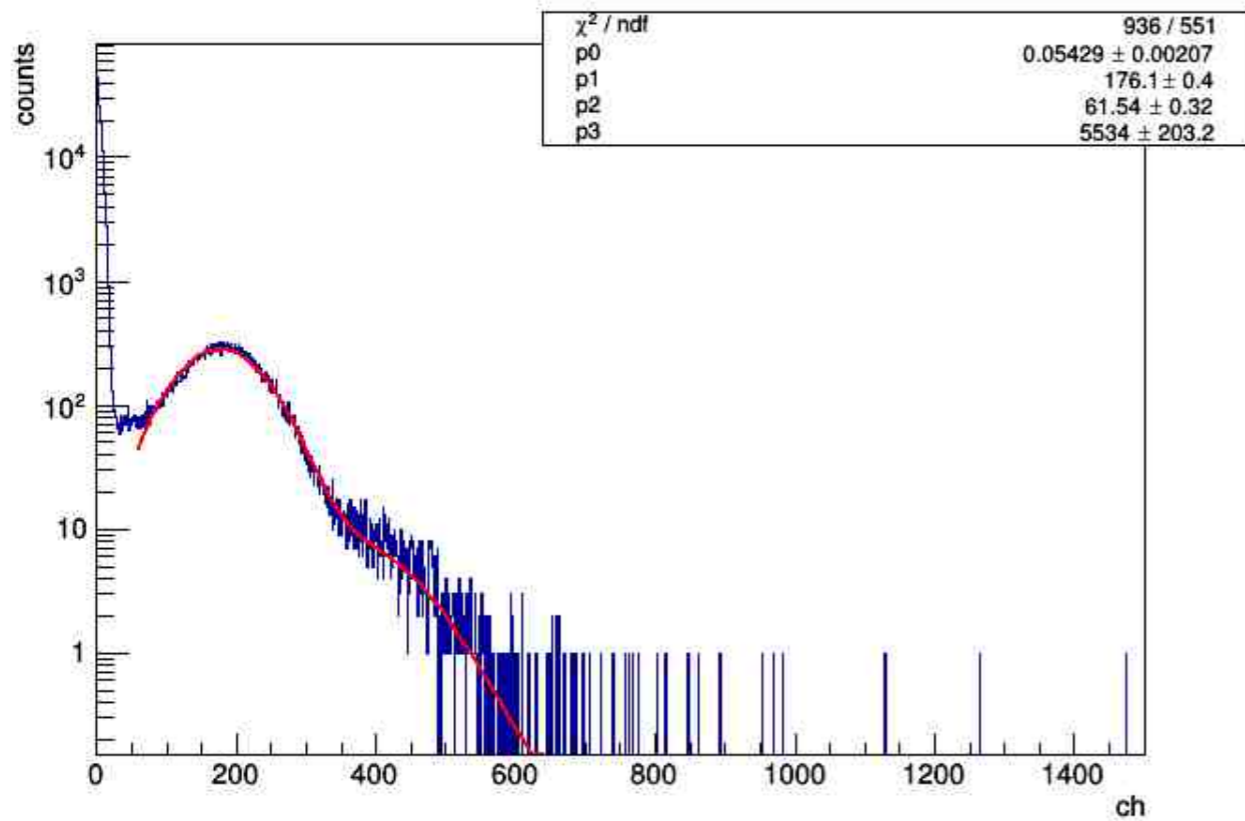


**-500 mA**

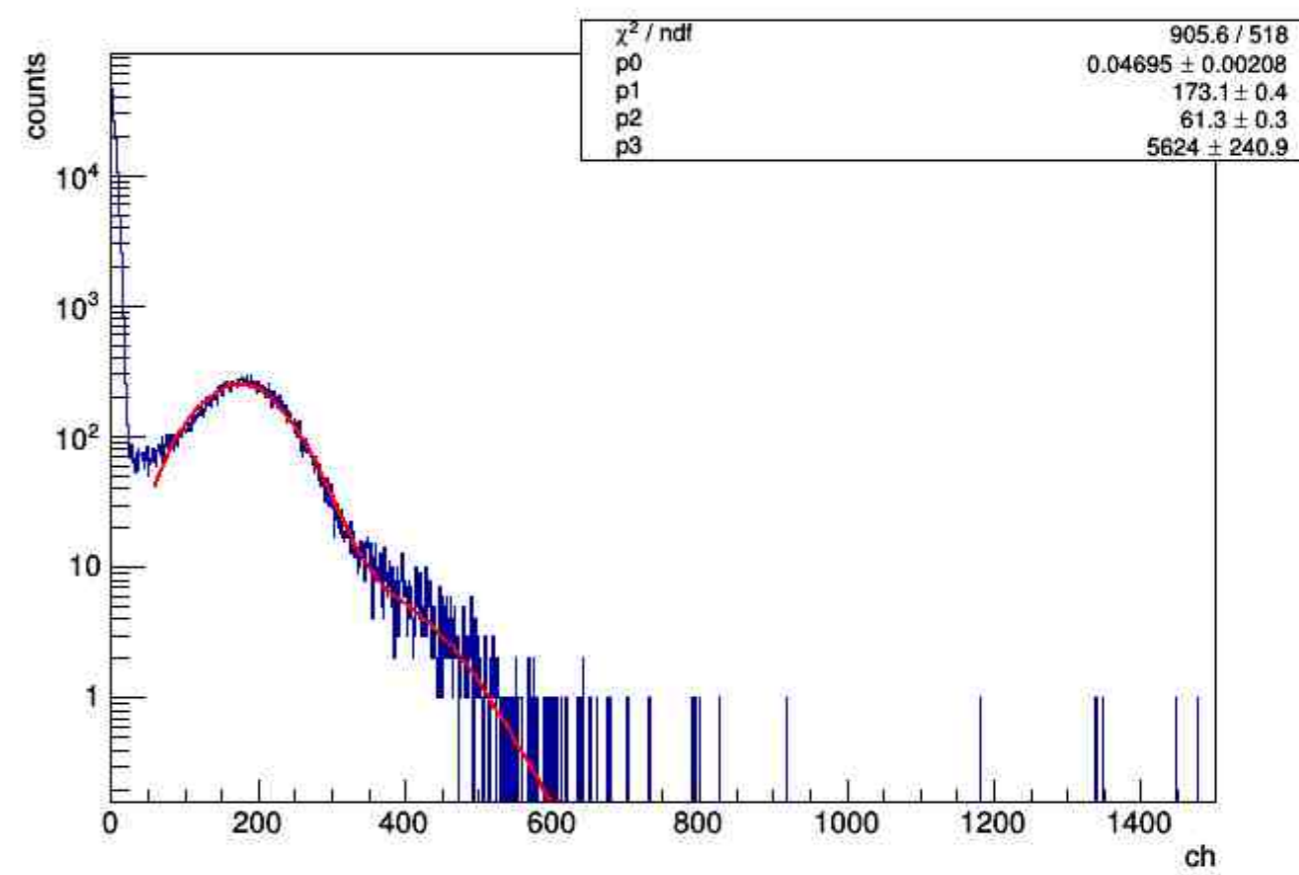
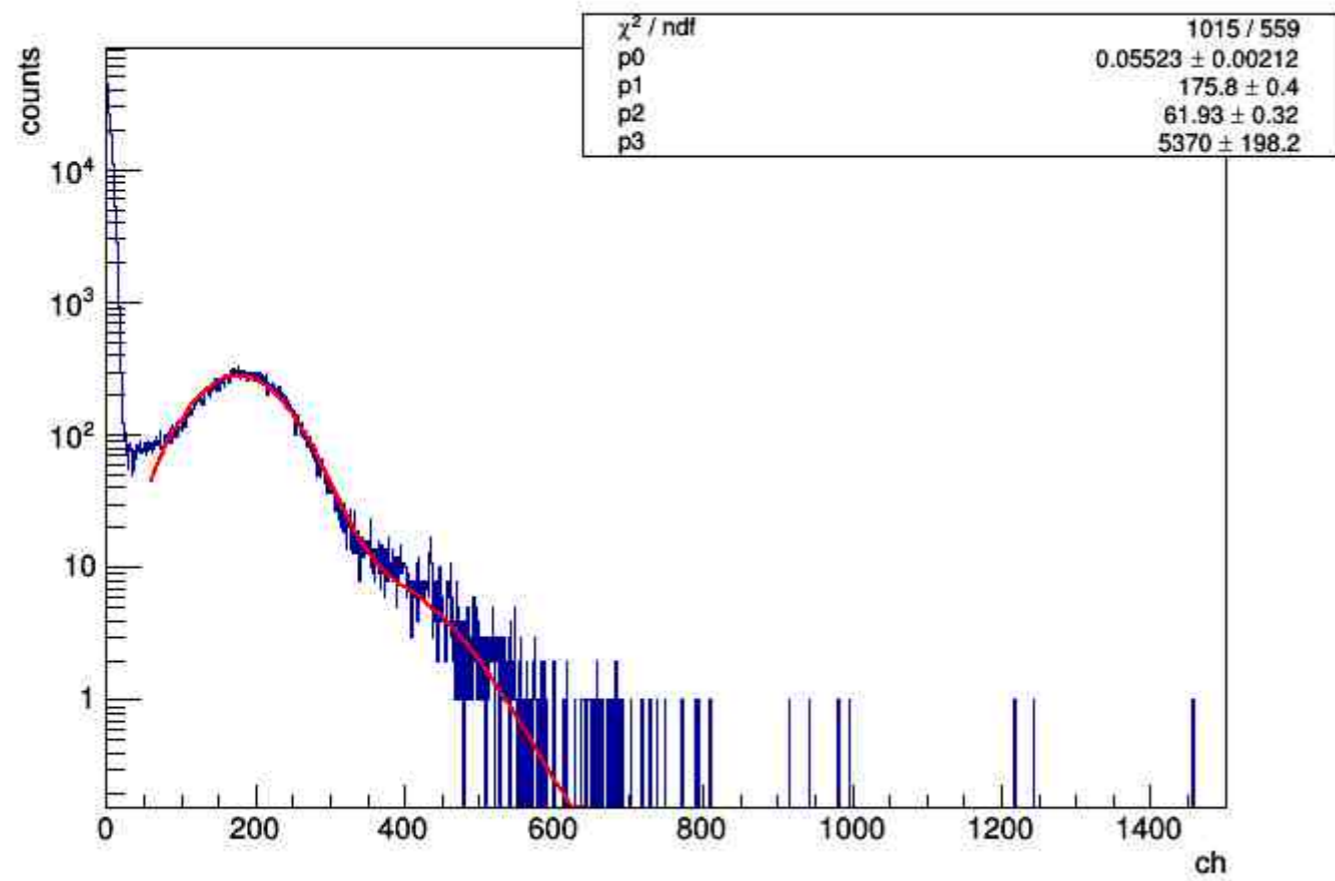




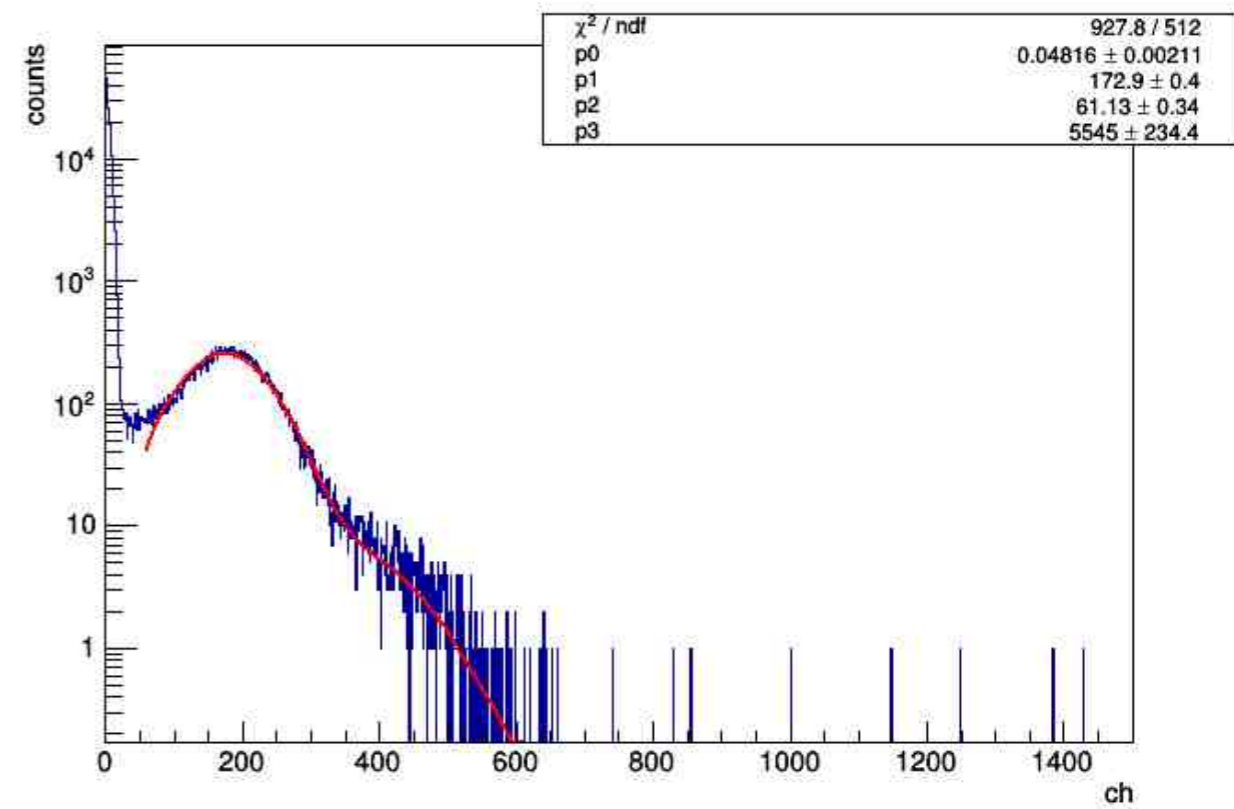
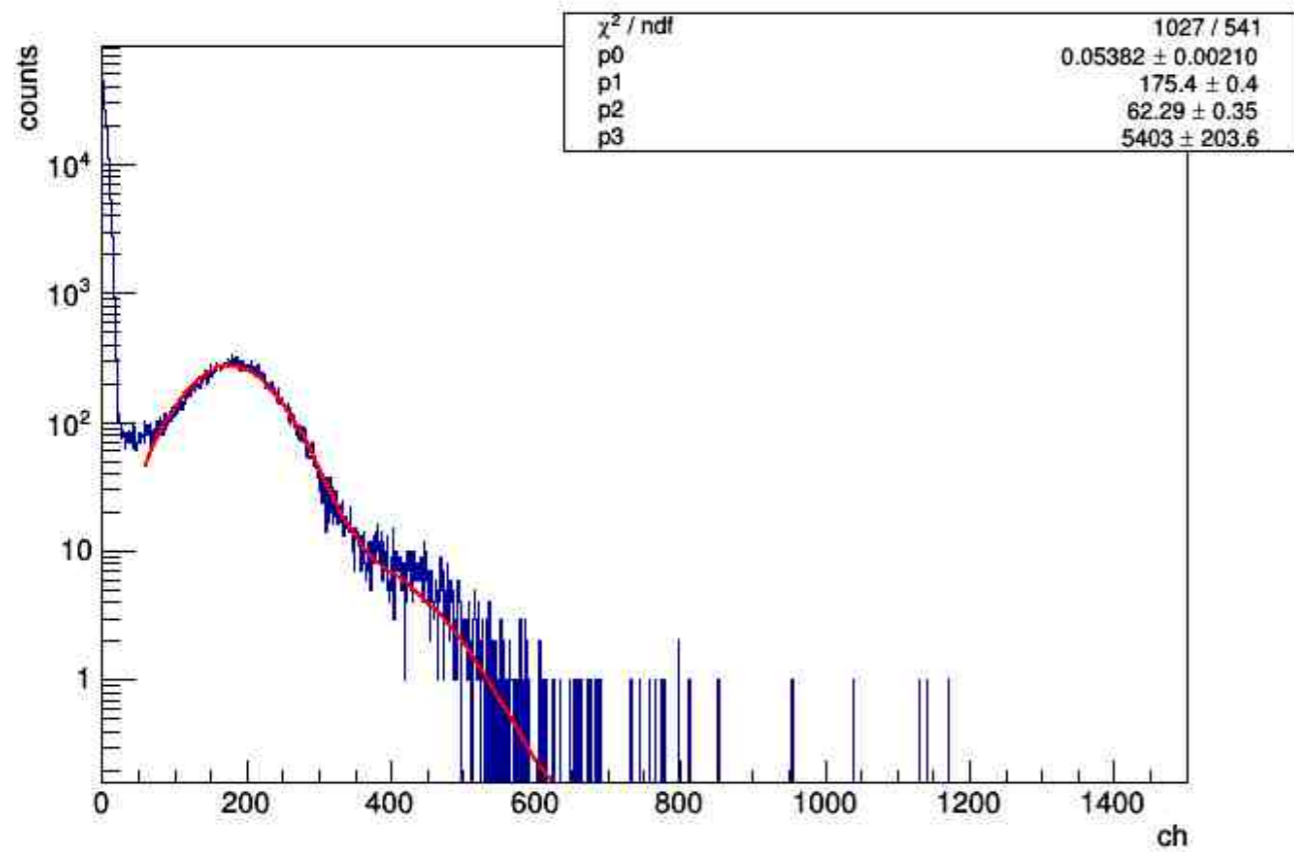
**-300 mA**



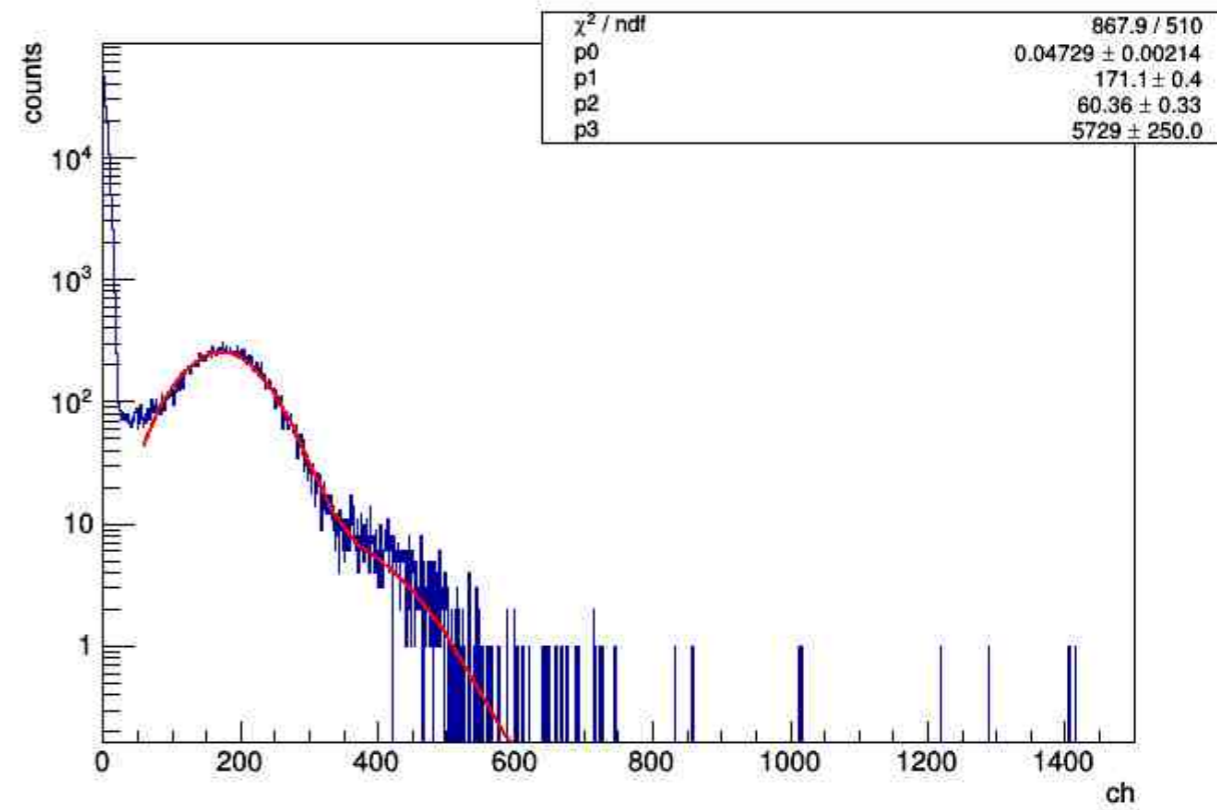
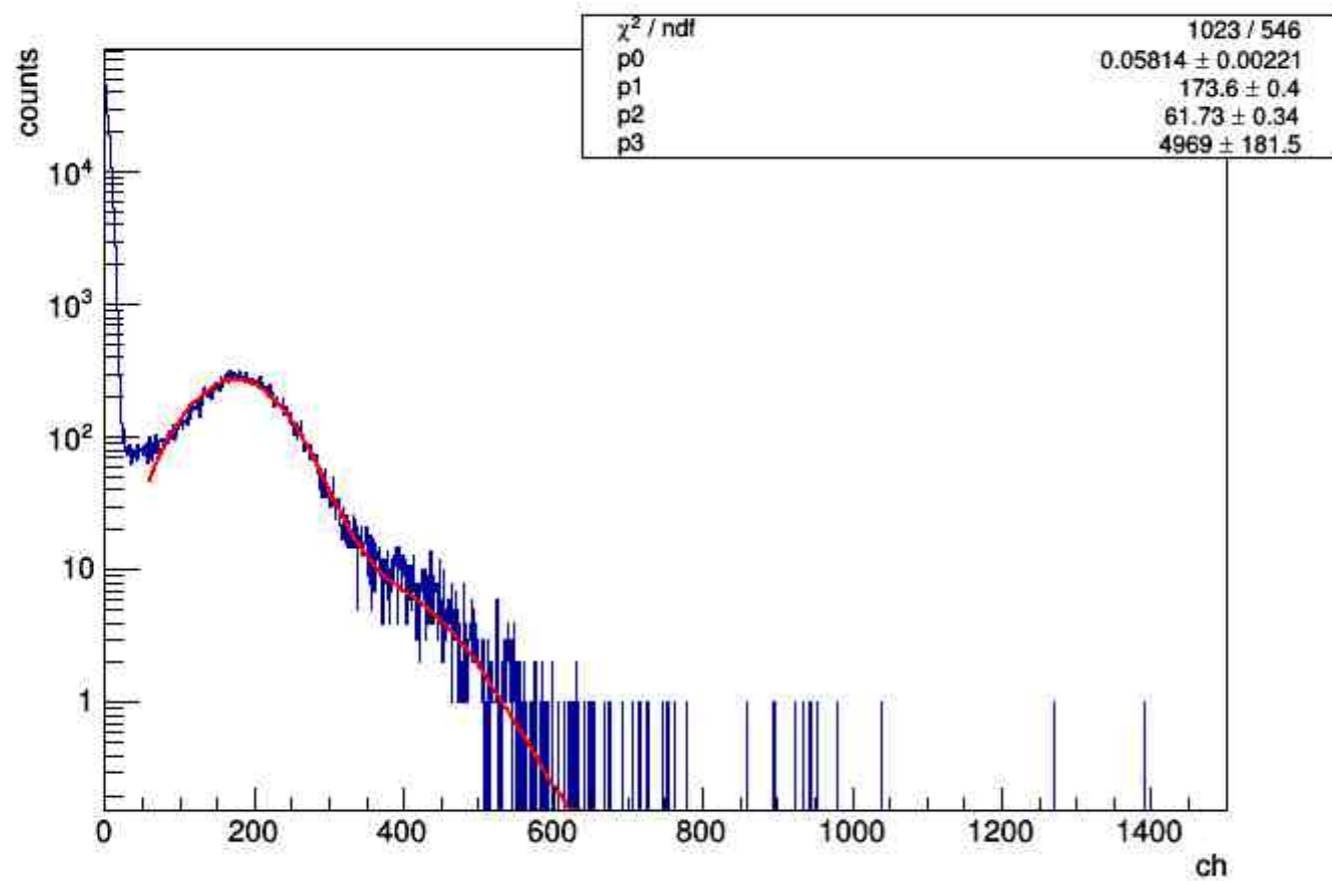
**0 mA**



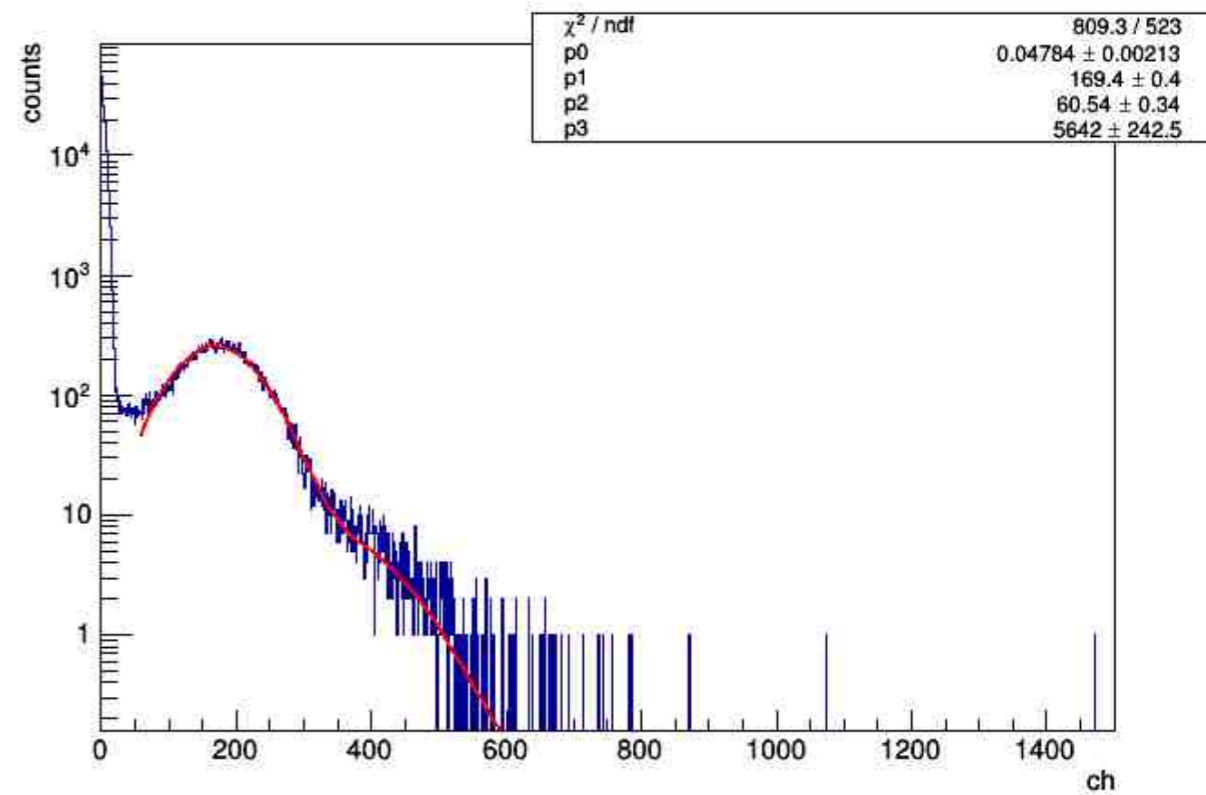
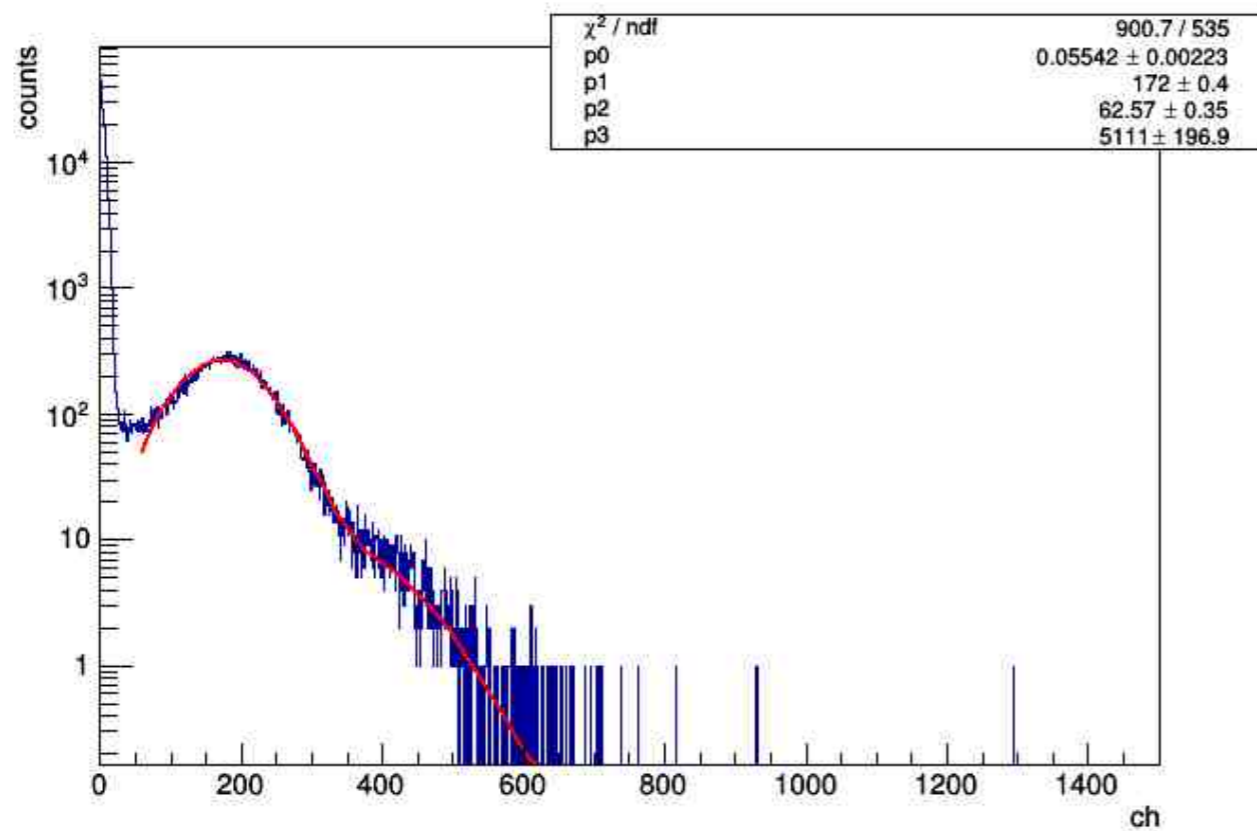
300 mA



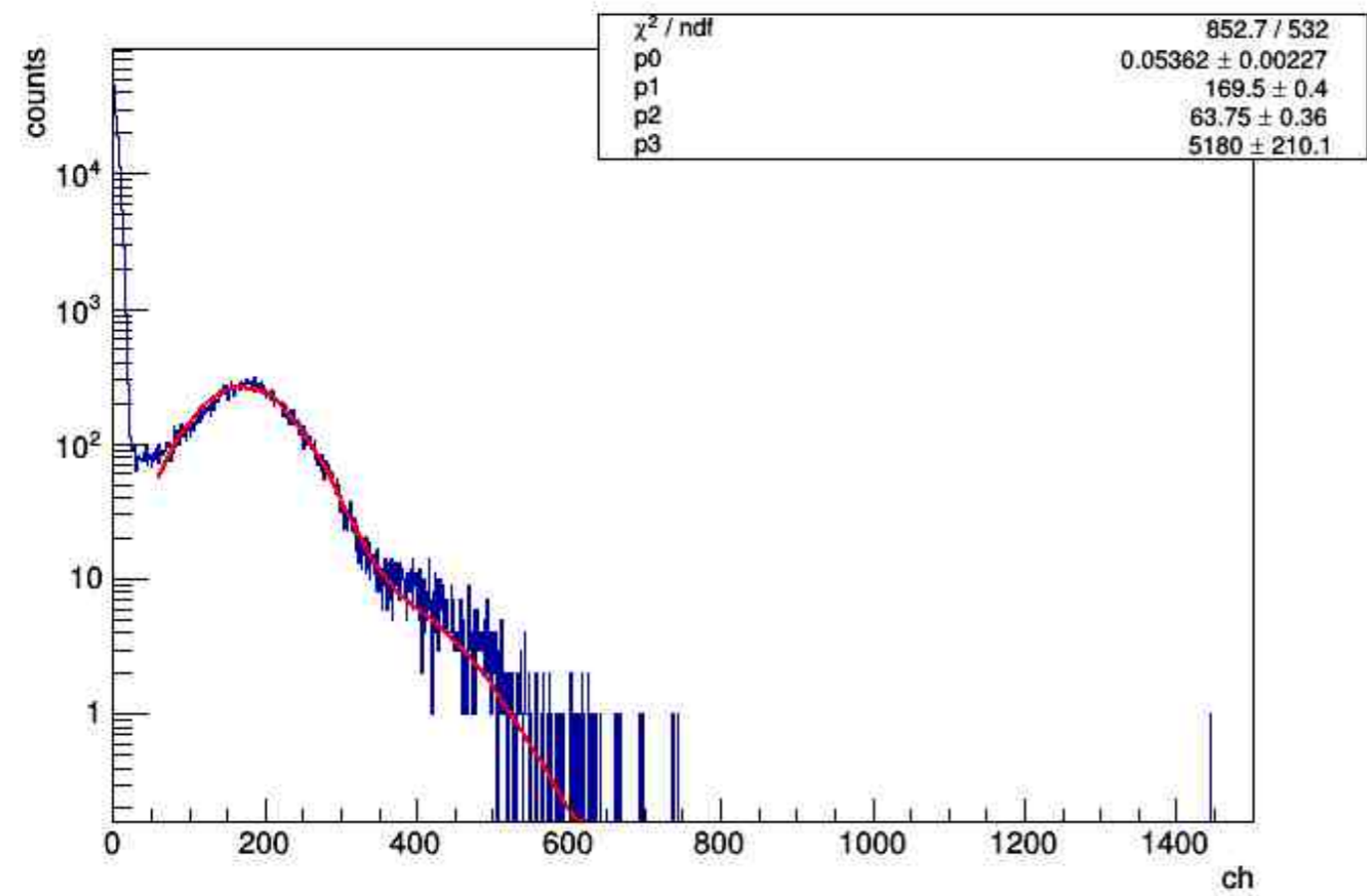
500 mA



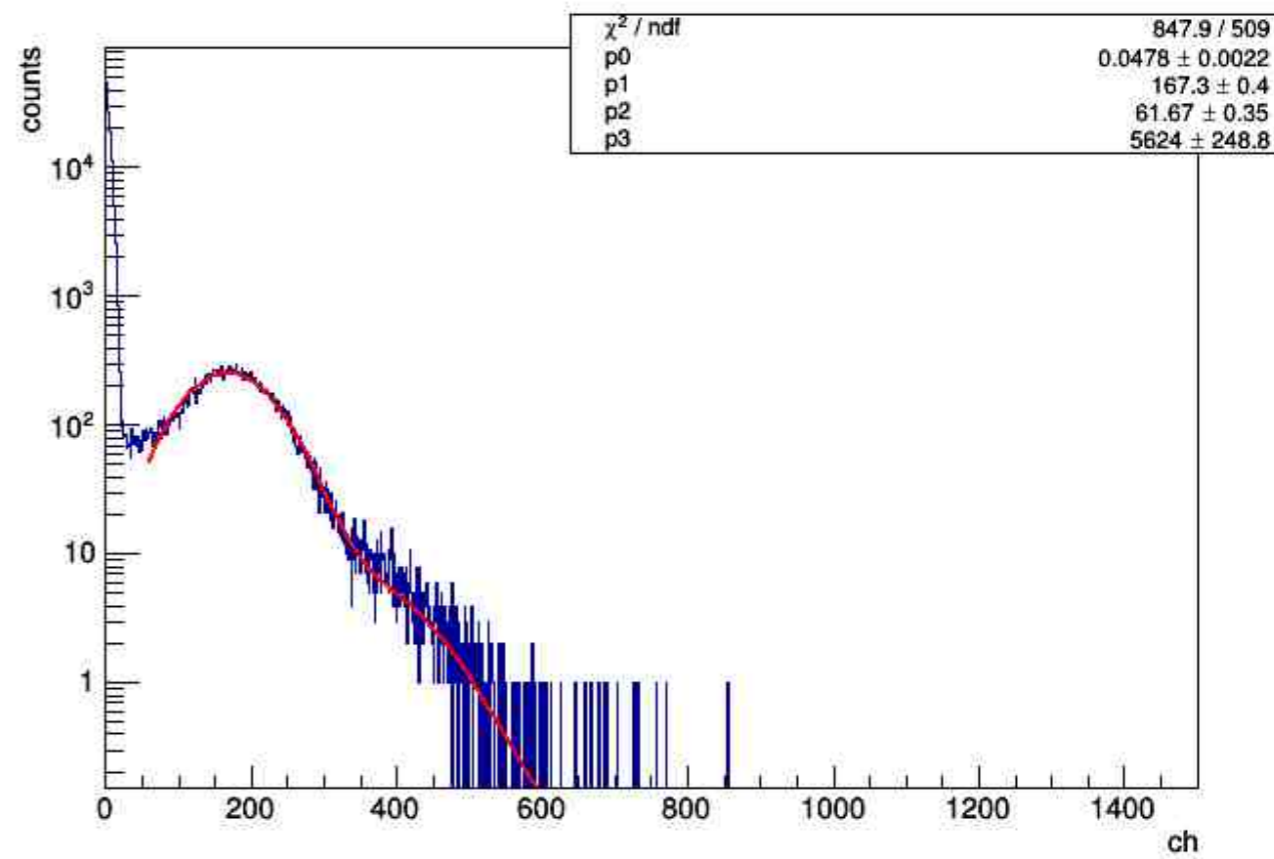
1000 mA



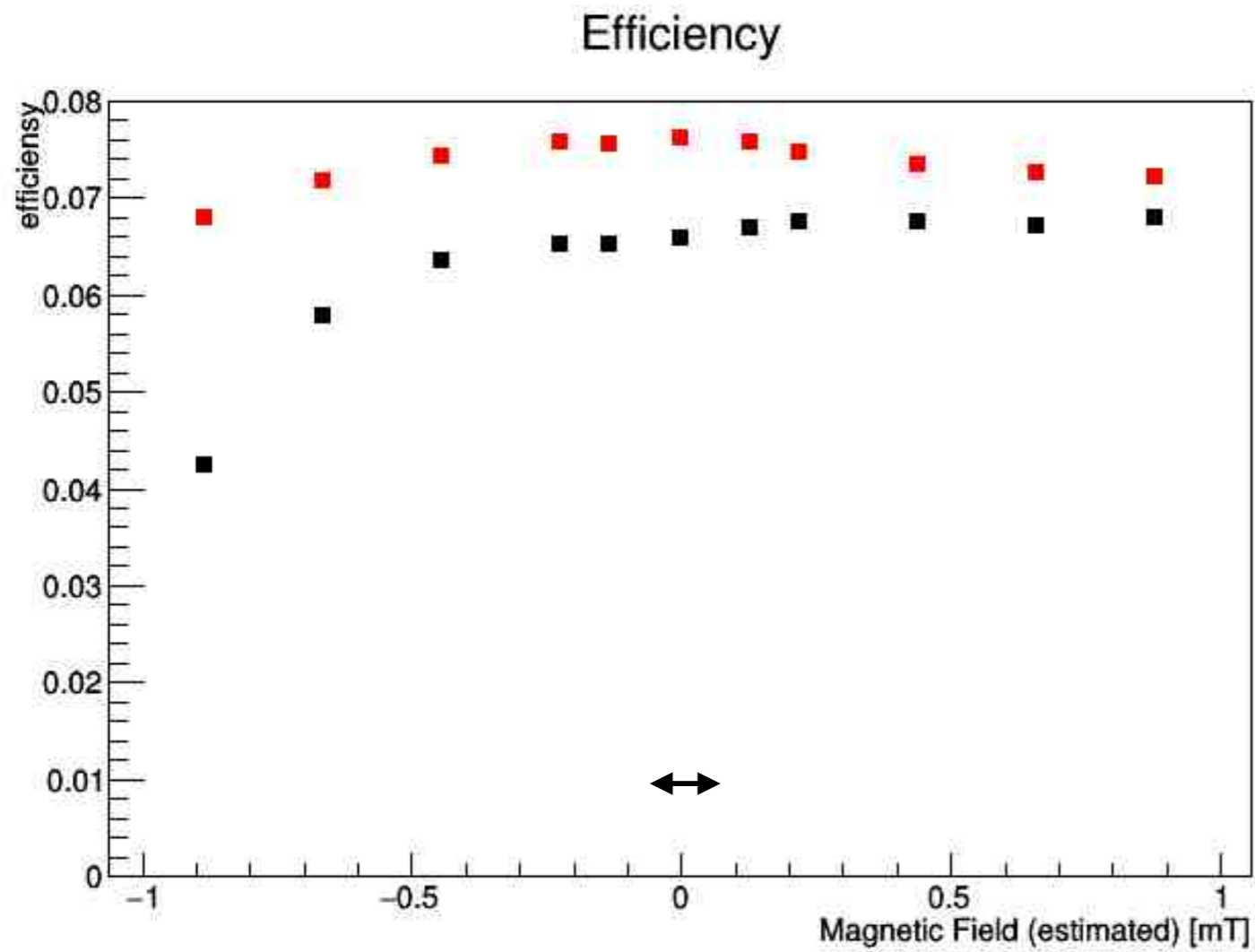
1500 mA



2000 mA







**Red:1st time**

B-field	efficiency
0.8789	0.072213
0.65838	0.072673
0.437859	0.073492
0.217339	0.074742
0.12913	0.075789
-0.00318	0.076231
-0.13549	0.075626
-0.2237	0.075786
-0.44422	0.074189
-0.66474	0.071653
-0.88526	0.06791

**Black:2nd time**

B-field	efficiency
0.8789	0.067941
0.65838	0.067173
0.437859	0.067428
0.217339	0.06745
0.12913	0.066848
-0.00318	0.065906
-0.13549	0.065264
-0.2237	0.065264
-0.44422	0.063475
-0.66474	0.057732
-0.88526	0.042485

**Earth magnetic field in Japan is about 46 uT**