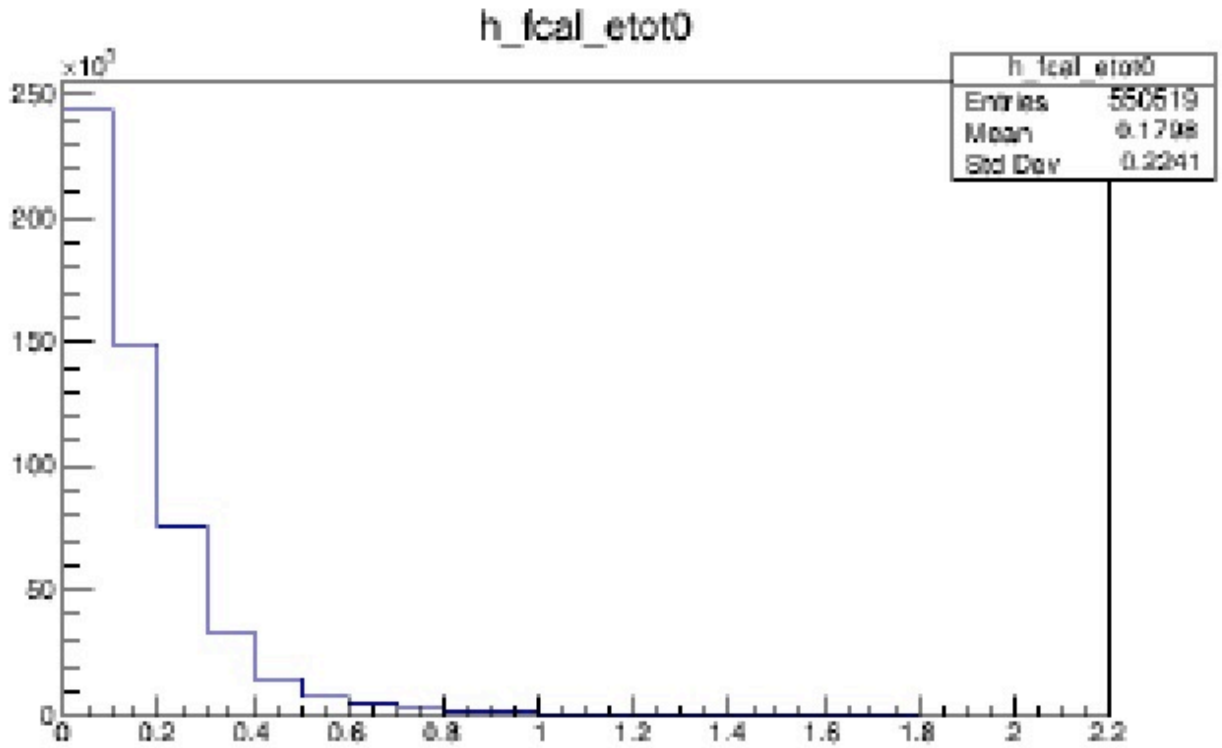
Project #	Project	Number needed	Number completed	Project finished
1	Epoxy G10 slats to wire plates	8	8	✔
2	Epoxy G10 slats to spacer plates	8	8	✔
3	Sand preamp cards to correct size	48	48	✔
4	Sand HV cards to correct size	48	48	✔
5	Attach HV capacitors to preamp card, test preamp card	48	48	✔
6	Epoxy preamp and HV bias cards to wire plates	8	8	✔
7	Bolt together wire and spacer plates, attach wheels, move to Physical Science Building	8	8	✔
8	String 10 carbon-tube wires and 11 adjacent field wires in central region, HV test open detector	8	0	
9	String remaining sense and field wires, close detector, flow gas, bias HV and LV, fix problems	8	0	


PLACE LABEL HERE
SITTERLY MOVERS

From the trigger discussion of July 17, 2018



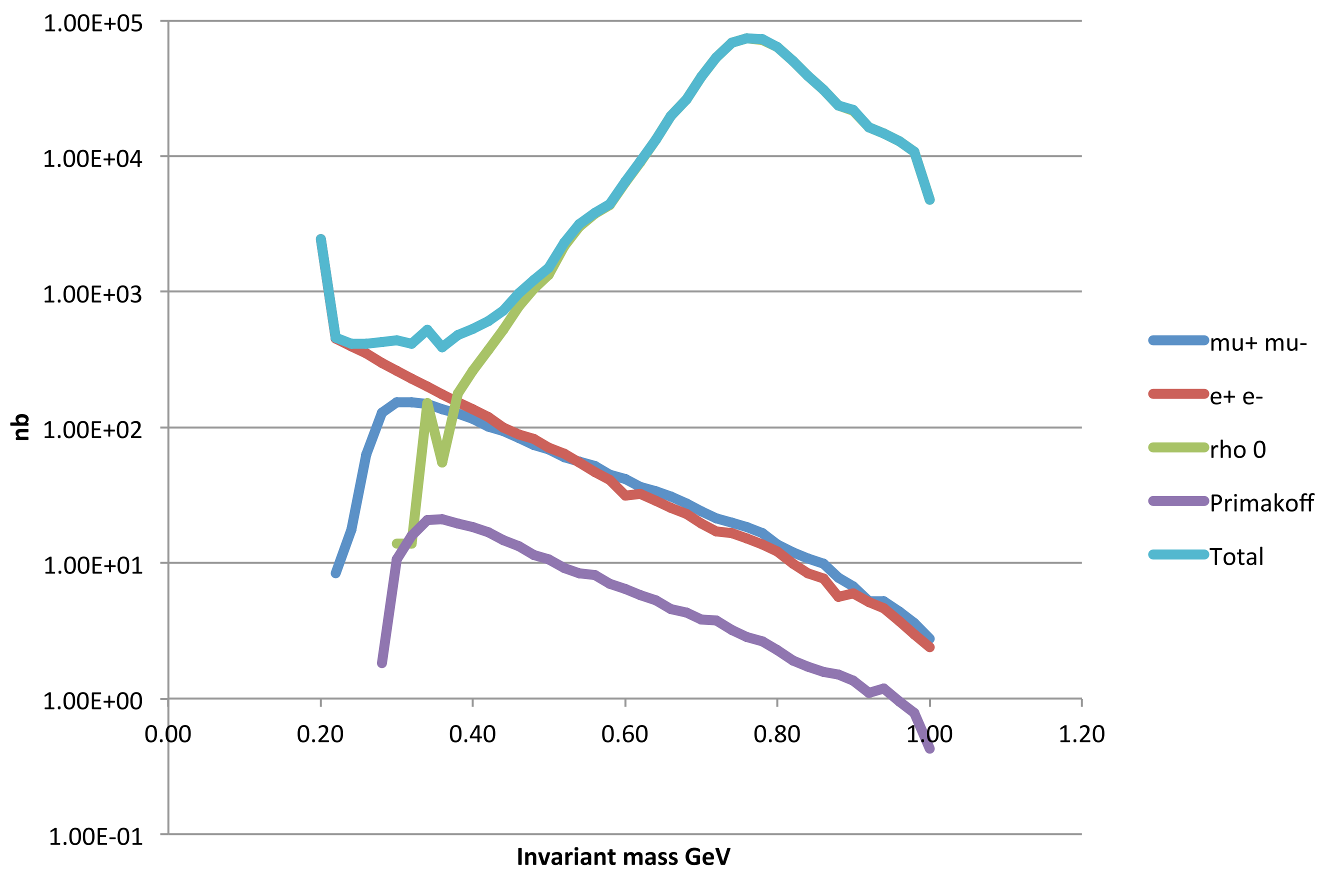
FCAL energy deposition for TOF trigger events

- Almost half the triggers have energies below 100 MeV
- The CSDA range for 100 MeV electrons in iron is approx. 1.5”
- Should we put a 1.5” thick steel plate in front of the TOF covering approximately 60” x 60”, the size of the MWPCs ?

Tentative Conclusions

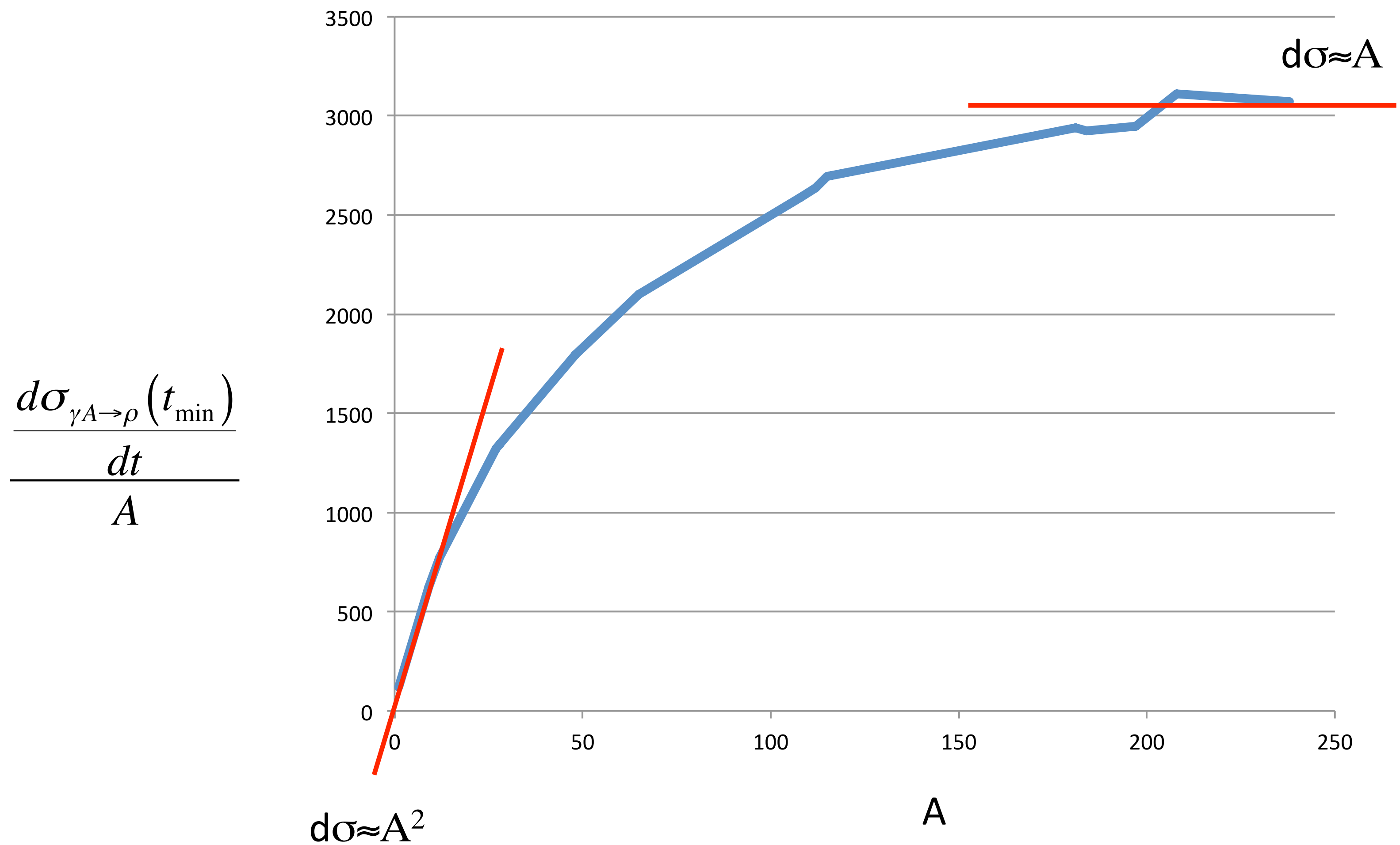
- Trigger rates under 90 kHz are possible if,
  i. the trigger can reject events with R<18 cm,
  ii. the TOF scintillators are pulled back 18 cm from the beam hole,
  iii. the coincidence window between TOF paddles is reduced to 20 ns.
- More trigger tests are needed this fall with a 5% RL target pulled back to z=1 cm.
- We should advocate for the TOF modification next summer.
- A 1.5” thick steel plate in front of the TOF might reduce the rate by 50%. Could do a test this fall on a few paddles if there’s time.

Pair production cross sections on proton for GlueX running conditions with track going into TOF

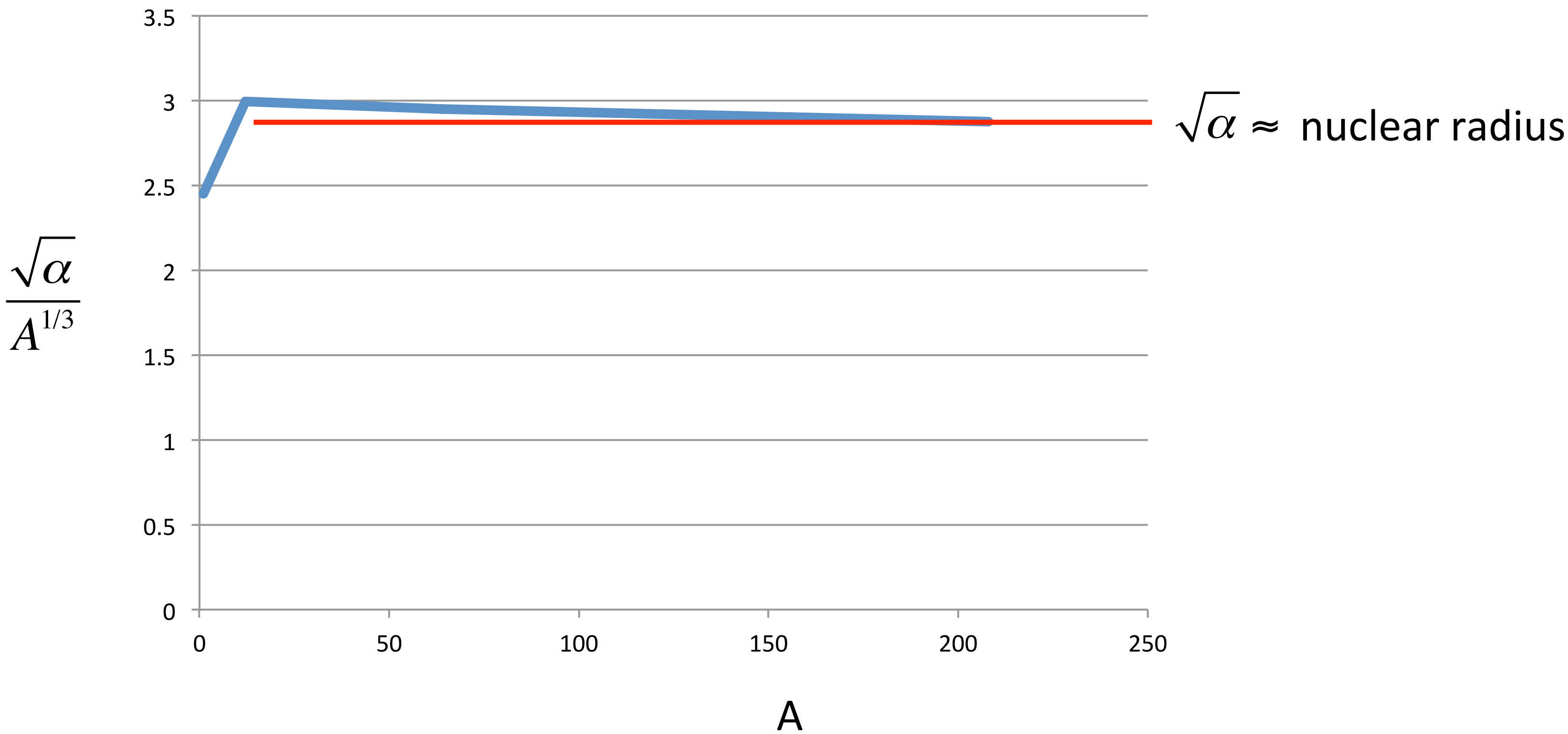


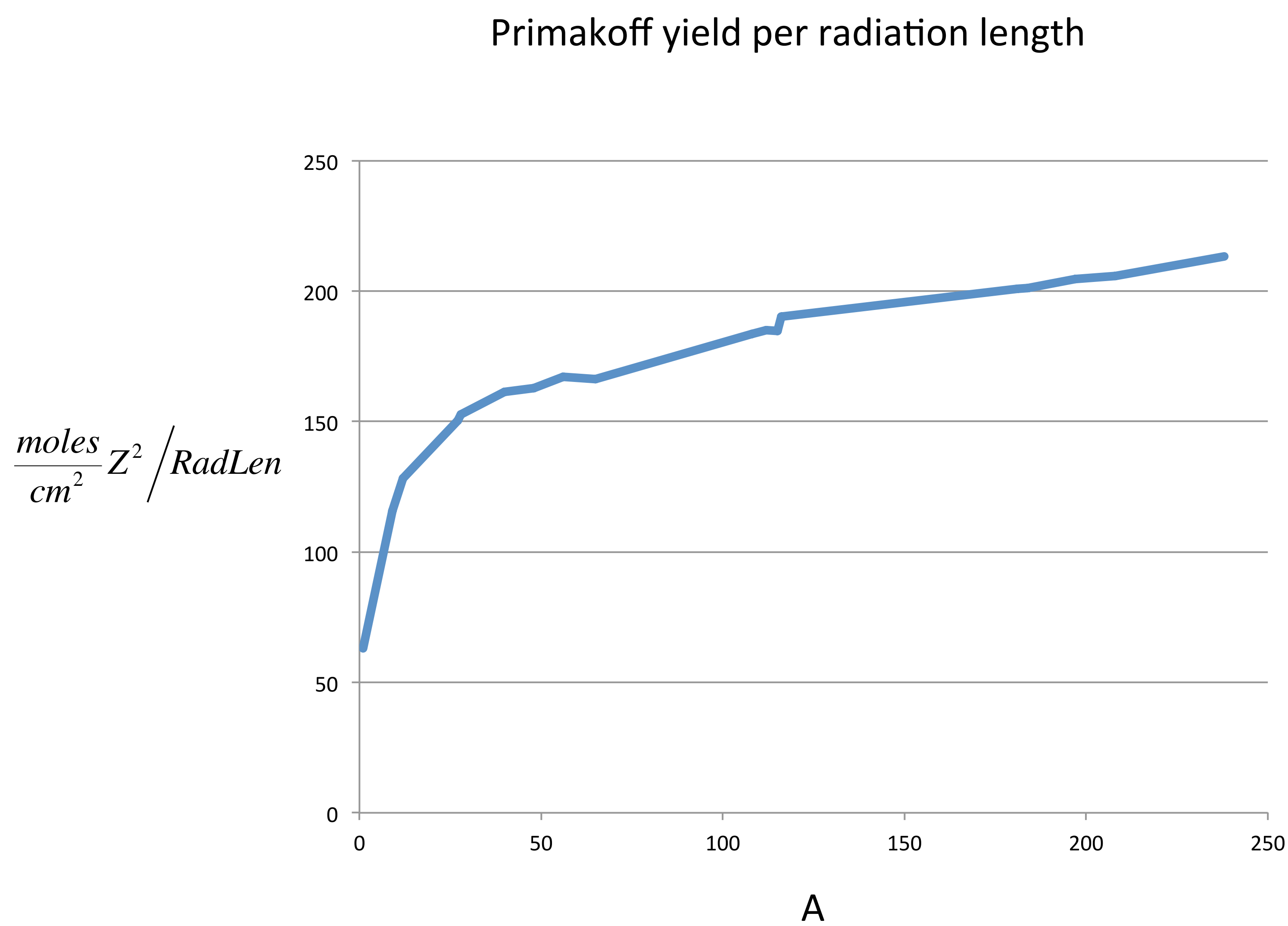
Picking the target(s) for CPP

$$\frac{d\sigma_{\gamma A\to\rho}(t)}{dt} \cong \frac{d\sigma_{\gamma A\to\rho}(t_{\min})}{dt} e^{-\alpha t}$$

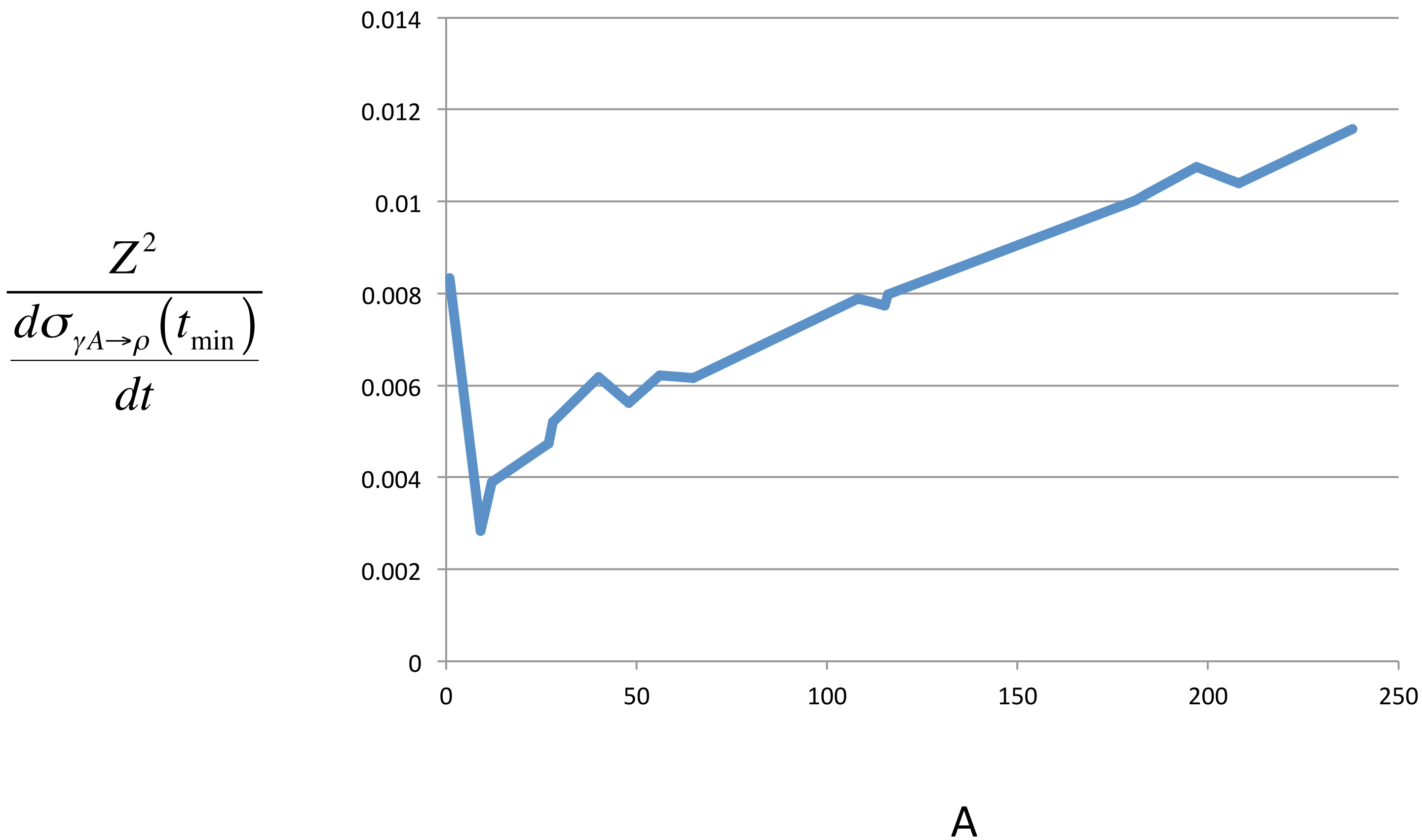


$$\frac{d\sigma_{\gamma A\to\rho}(t)}{dt} = \frac{d\sigma_{\gamma A\to\rho}(t_{\min})}{dt} e^{-\alpha t}$$





Primakoff yield per radiation length
$\frac{moles}{cm^2} Z^2 / RadLen$
250
200
150
100
50
0
0
50
100
150
200
250
A



$\frac{Z^2}{\frac{d\sigma_{\gamma A\to\rho}(t_{\min})}{dt}}$
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
0
50
100
150
200
250
A

Next step:

- Integrate Primakoff and ρ^0 cross sections over a reasonable range in angle, $\pi\pi$ invariant mass, and momentum transfer. Find the Primakoff/ρ^0 cross section ratio as a function of mass number A.