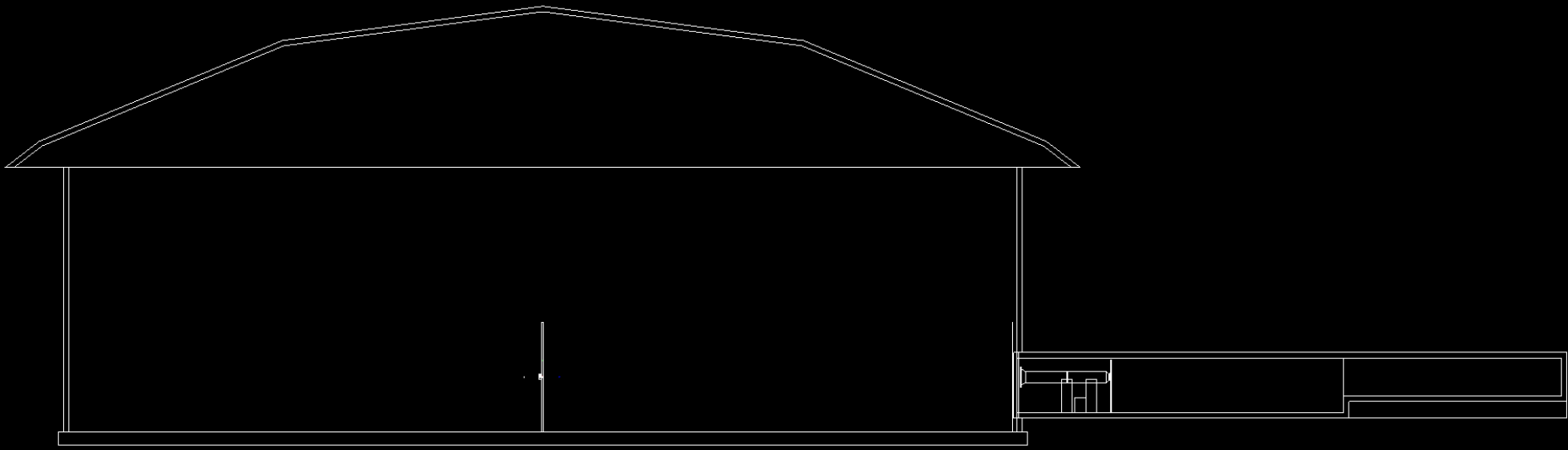


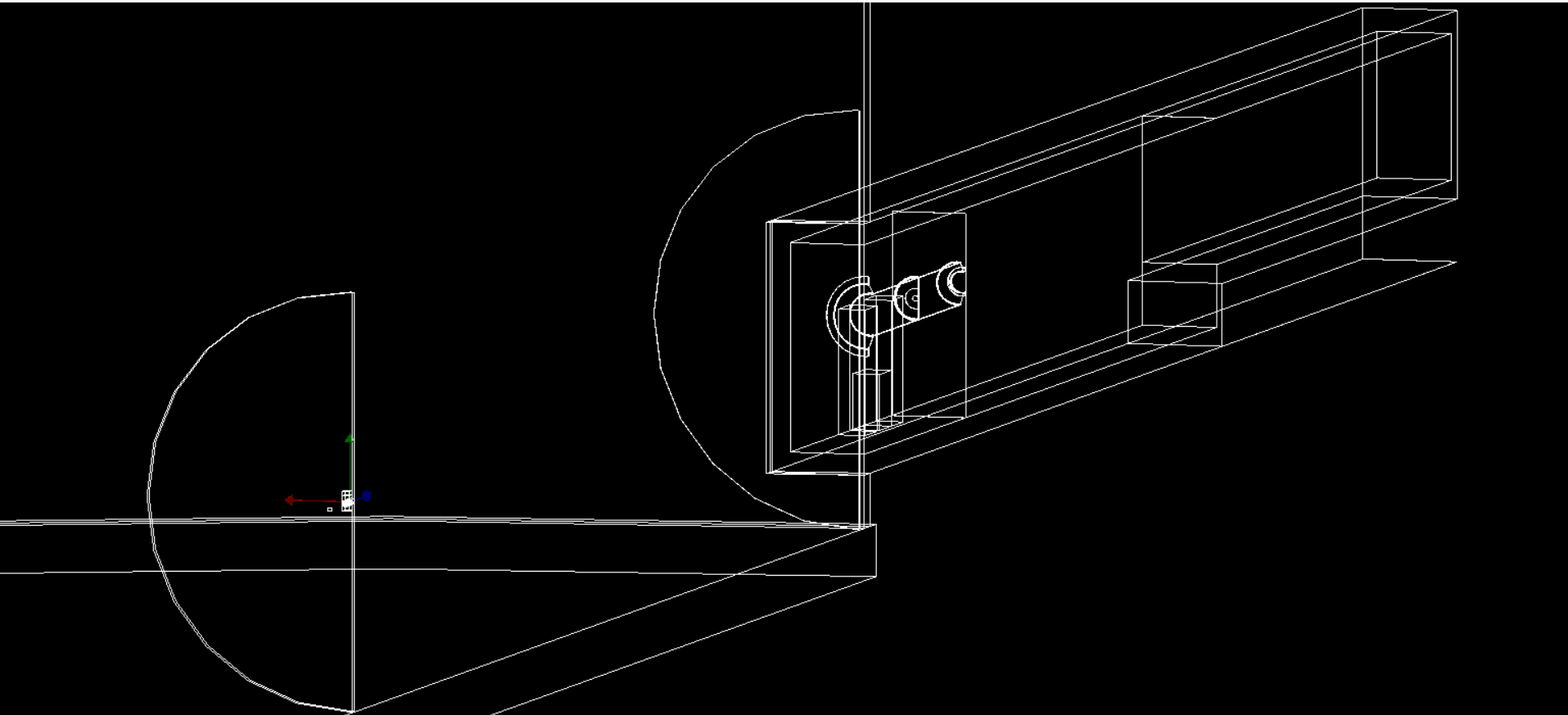
Independent Remoll Prex Dump Sim

Cameron Clarke – 11-6-2017

- Placed a similar size ideal vacuum detector near where Ciprian placed his
- Simulating the same kind of dump configuration

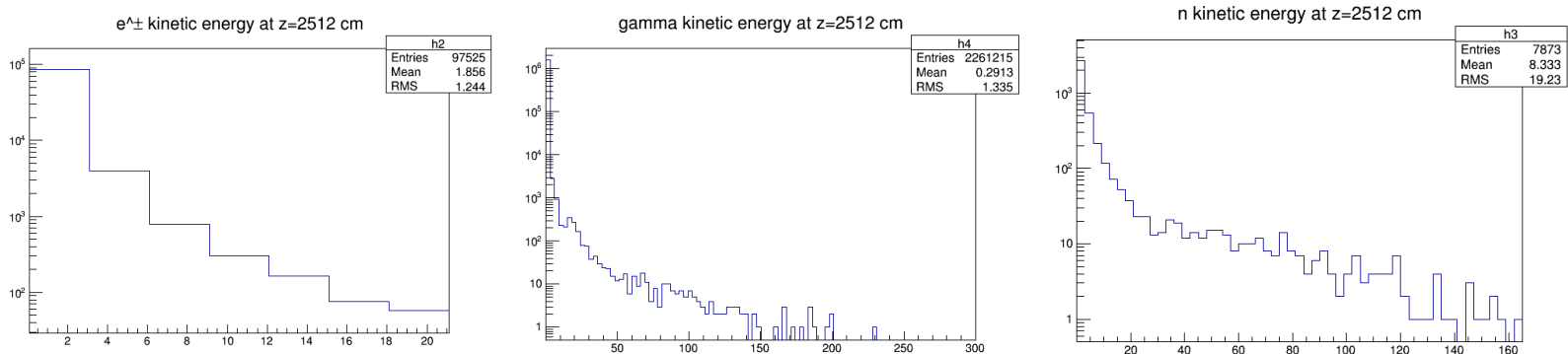


- Placed a similar size ideal vacuum detector near where Ciprian placed his
- Simulating the same kind of dump configuration
- 1M events (me) vs 18M events (Ciprian)
- I only have the target, collimator, and a kryptonite shield in the hall, no upstream beampipes or anything

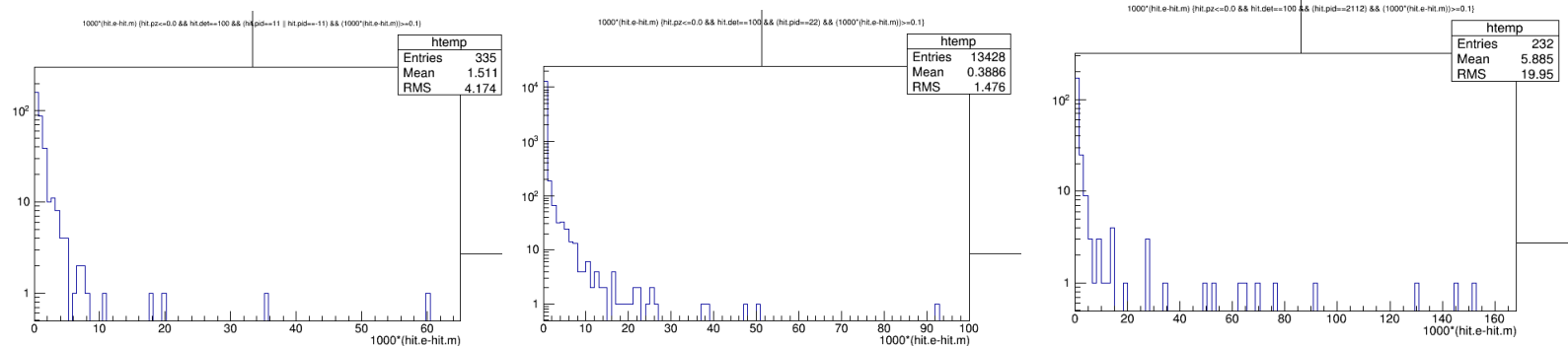


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- I get only 6% # of e[±], 11% gamma, and 80% neutron events, but similar shape spectra in most cases

• Ciprian
(18 M)



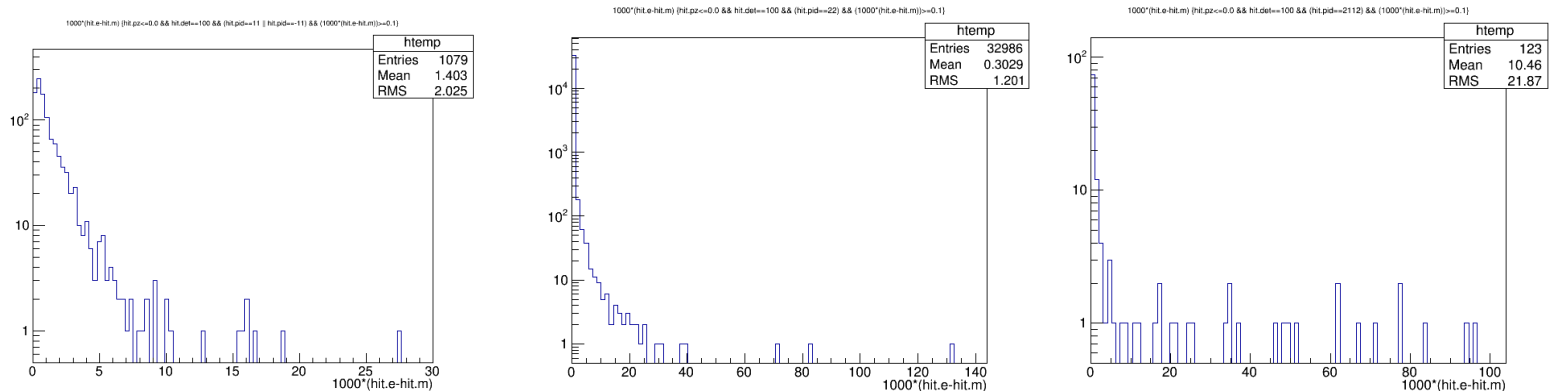
• Me
(1M)



- Placed a similar size ideal vacuum detector near where Ciprian placed his
- Simulating the same kind of dump configuration
- 1M events (me) vs 18M events (Ciprian)
- I only have the target, collimator, and a kryptonite shield in the hall, no upstream beampipes or anything
- I get only 6% # of e+-, 11% gamma, and 80% neutron events, but similar shape spectra in most cases
- Putting in the upstream beamdump extension pipe immediately increases the e+- and gamma signal by a factor of 3 (negligible effect on neutrons)
- So, obviously upstream things are actually very important and should not have been neglected

44 foot long dump extension beampipe upstream of the dump (and also added in downstream pipes and water beamdump)

• Me
(1M)



Comparison of counts for various geometry configurations:

Configuration	Total Counts	Neutrons	Gammas	e [±]
Initial	1709	205	16183	305+55
Initial, no Donut	15819	167	15025	289+51
Initial, no DS dump	18238	350	17486	294+60
Initial, remove lead shielding blocks	19133	208	18320	274+54
Remove donut, fat pipe	11730	145	11192	87+19
Remove donut, fat pipe, no DS dump	12830	297	12390	85+16
Initial, Half Target (half events)	8011 x2	140 x2	7476 x2	89+10 x2
Add US beamdump extension pipe	47069	206	45447	918+212
Add US ext, add U water shielding	51040	126	49584	875+170