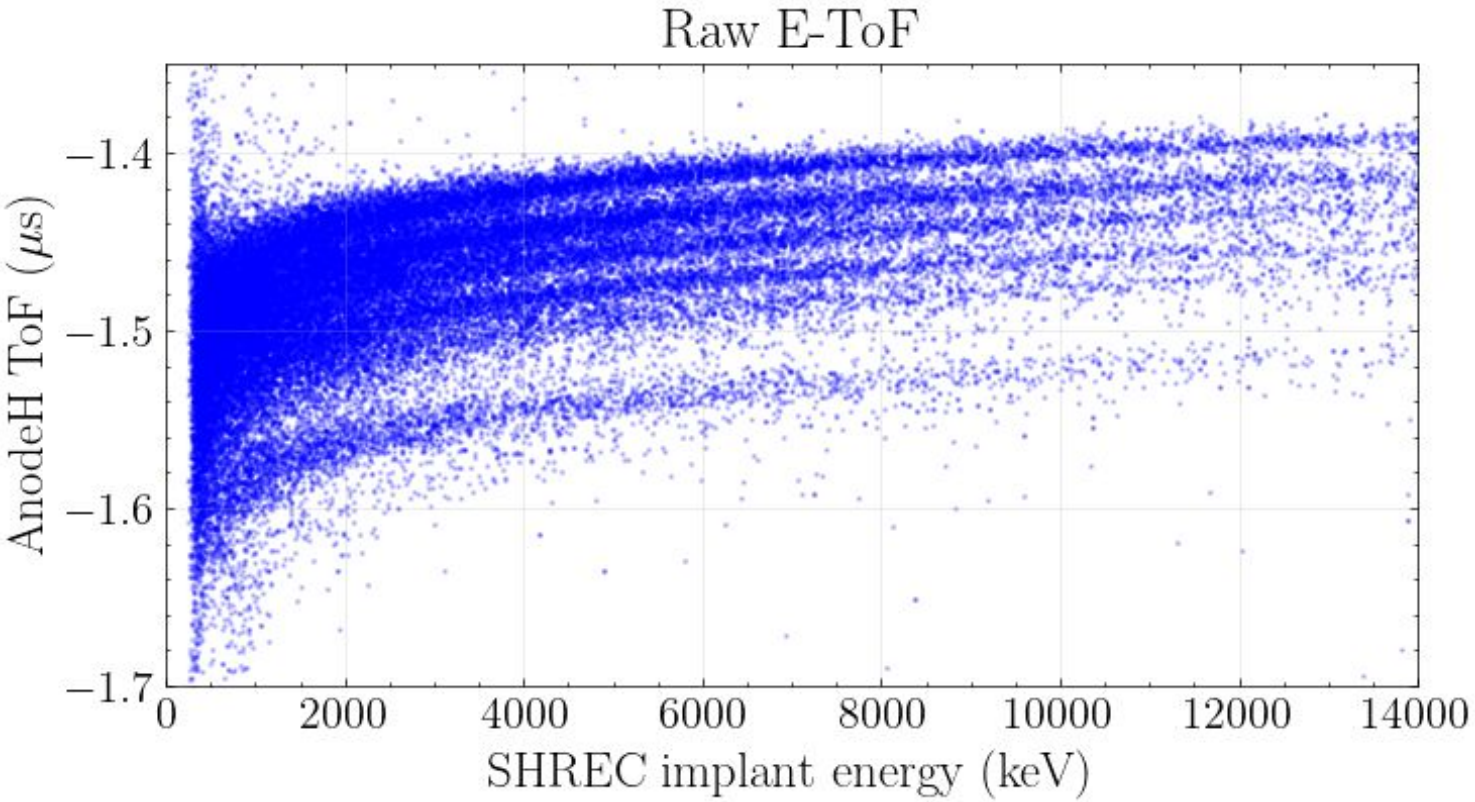
PPAC Stuff

Raw etof


Raw E-ToF
AnodeH ToF (μs)
−1.4
−1.5
−1.6
−1.7
0
2000
4000
6000
8000
10000
12000
14000
SHREC implant energy (keV)

Time corrected etof

```
Stats:
All three PPAC signals: 75295 (10.2%)
Exactly two PPAC signals: 1156 (0.2%)
Exactly one PPAC signal: 705 (0.1%)
At least one PPAC signal: 77156 (10.5%)
No PPAC signals: 660362 (89.5%)
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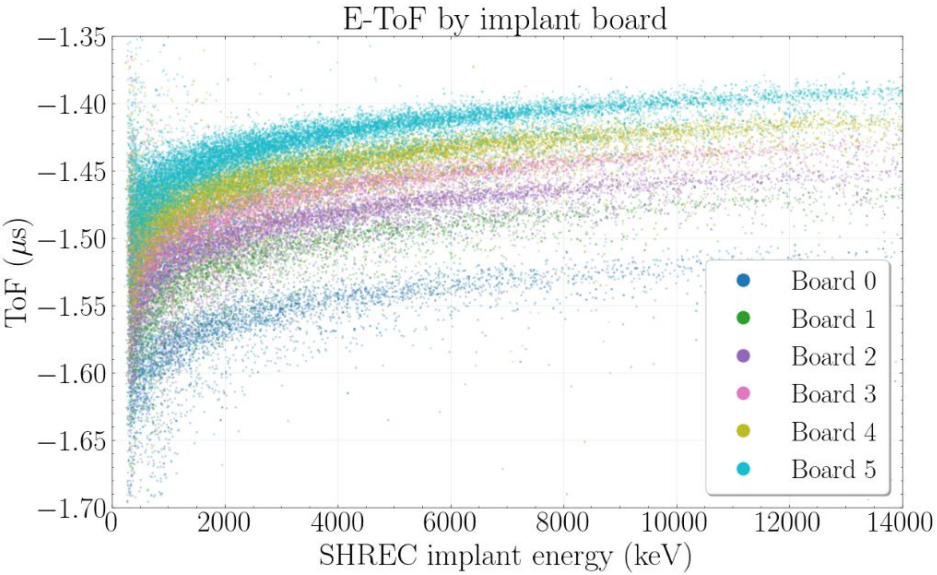
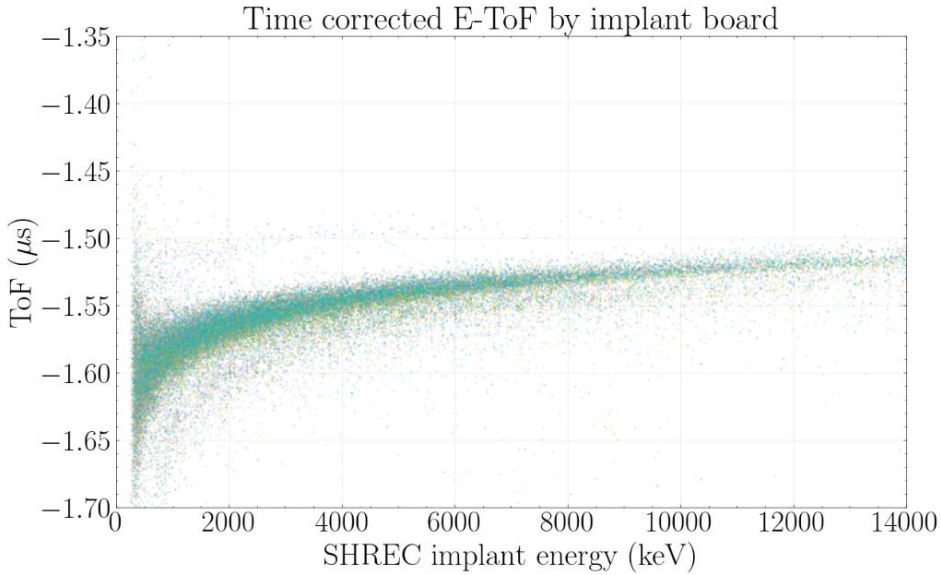
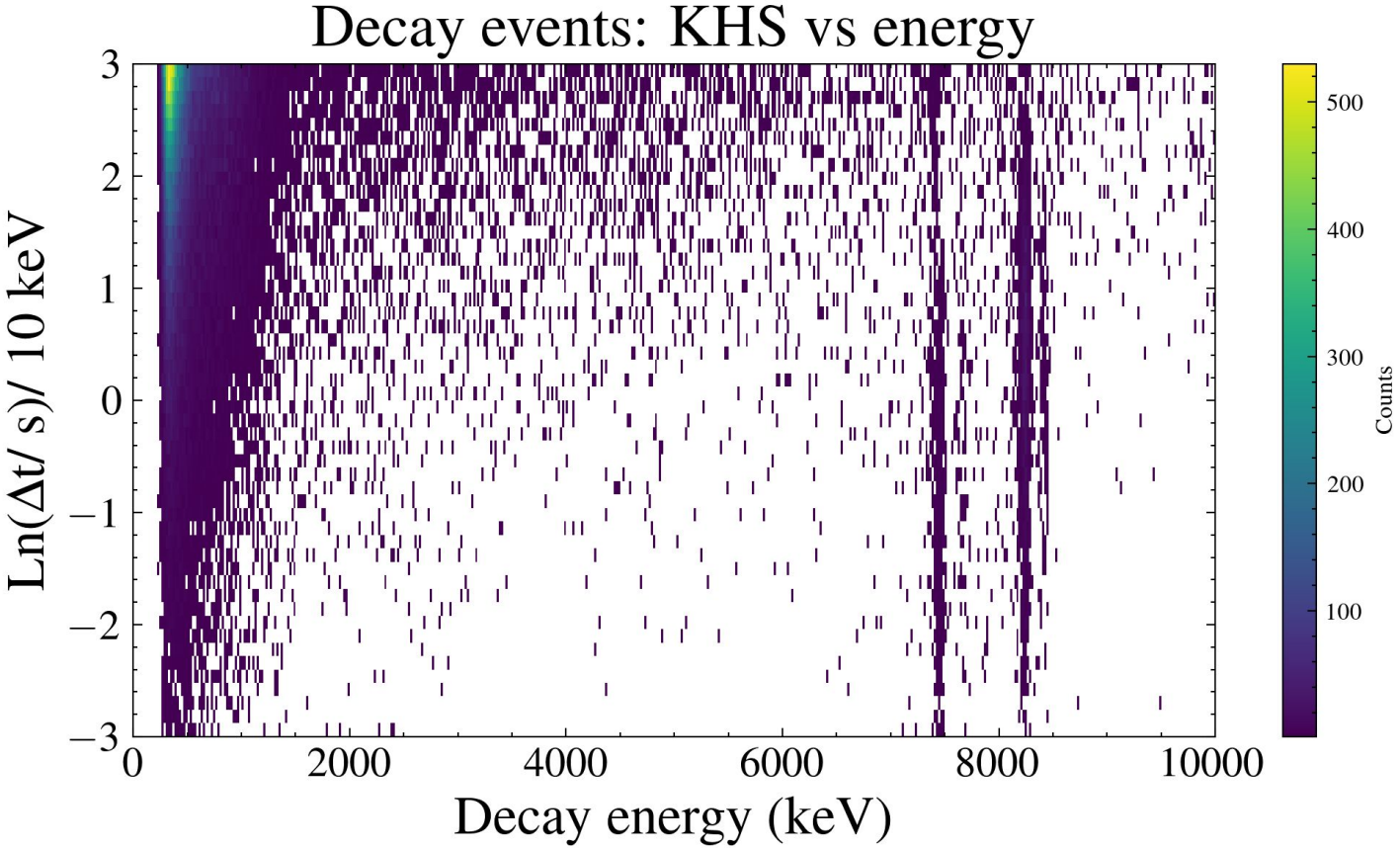




[At least one] = 2% improvement in stats over [all three]

Decay candidates - anti ppac coincidence req



Correlations

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Total correlated events: 383
Same pixel correlations: 327 (85.4%)
Neighboring pixel correlations: 56 (14.6%)
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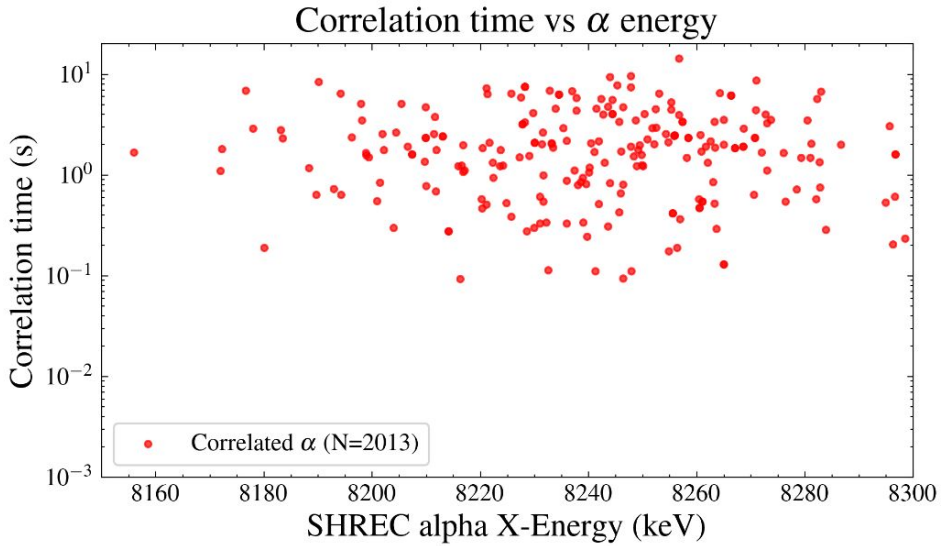
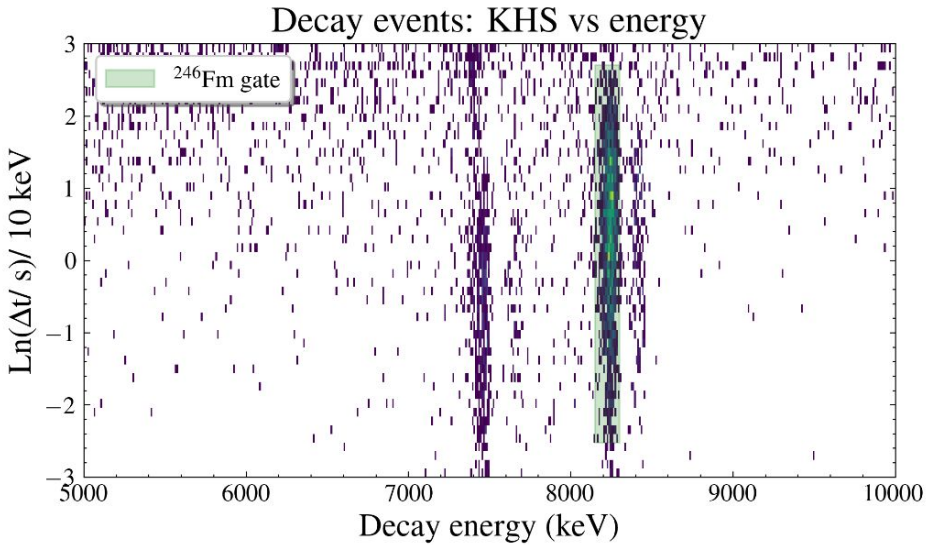
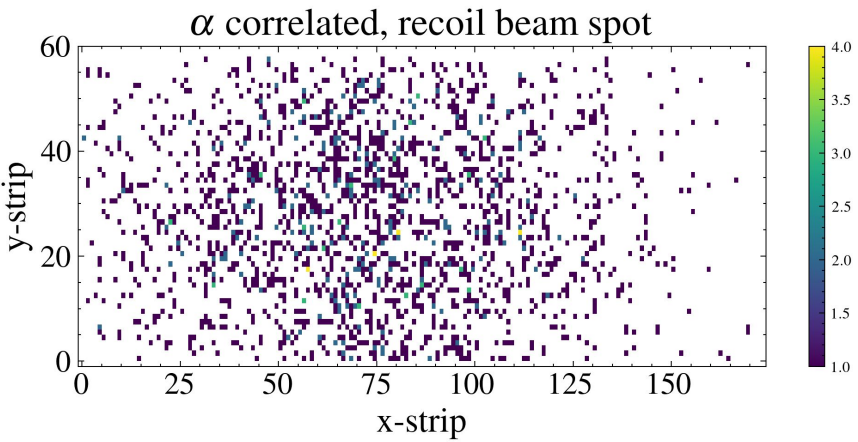
EVRs: 1000-8099 keV (all three ppac req)
Alphas: 8100-8400 keV (ant-ppac req)
Loop through alpha candidates, retrieve pixel hist (and neighbours), look back in time and correlate with closest EVR

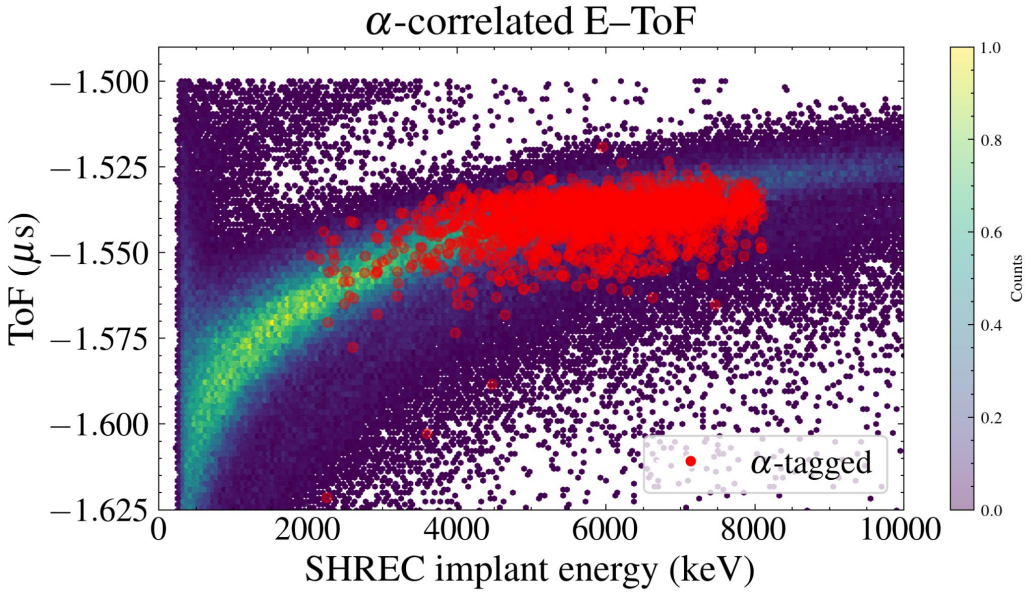
R46-R56 combined - 4mbar isob, -500, 50, 50V

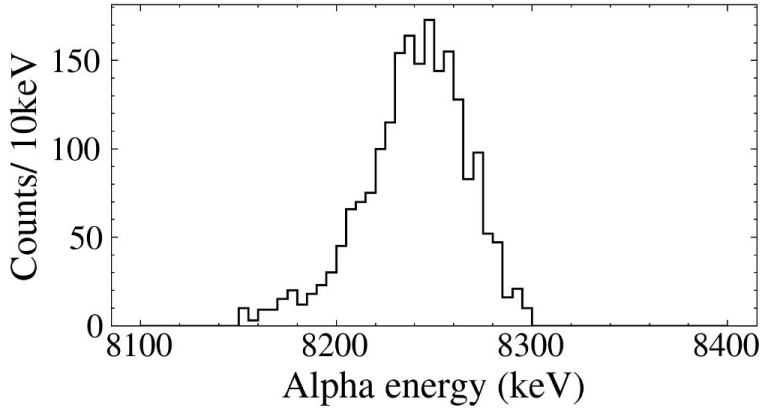


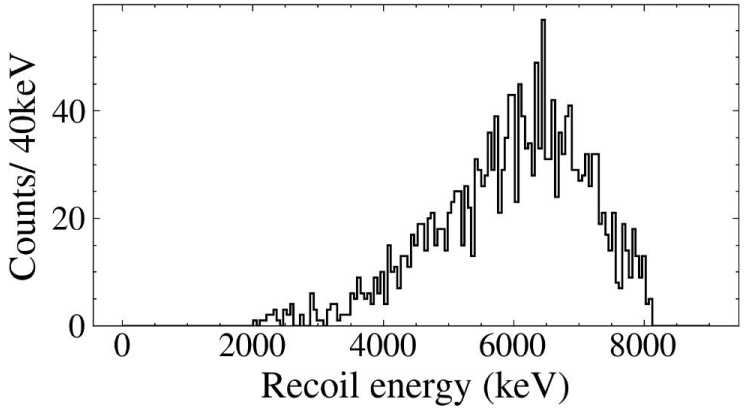


R46-R56 combined - 4mbar isob, -500, 50, 50V



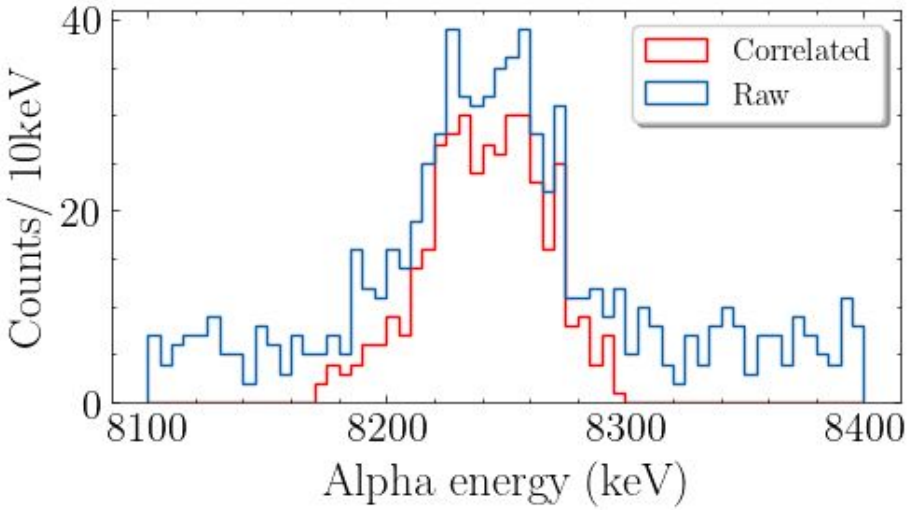


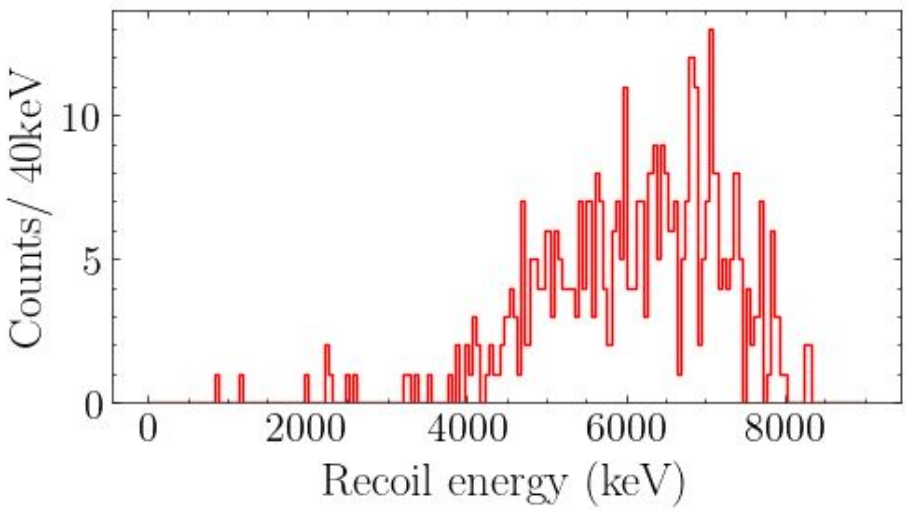




Correlated vs. raw alphas

R49 - 4mbar isob, -500, 50, 50V

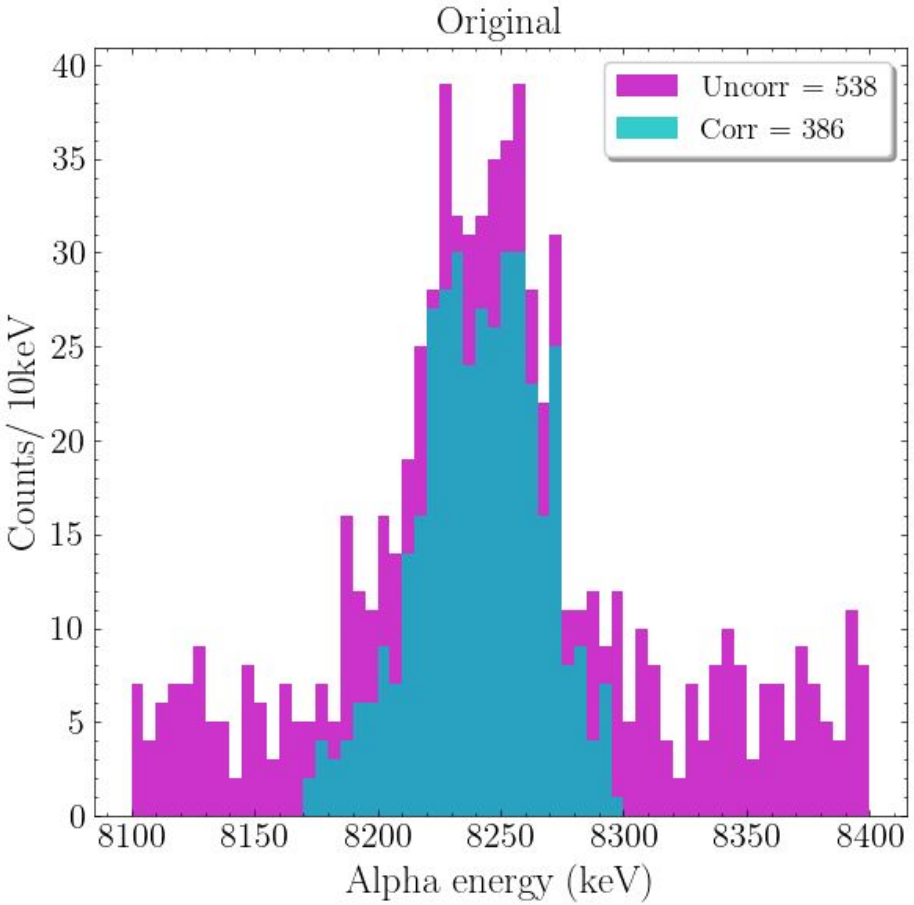


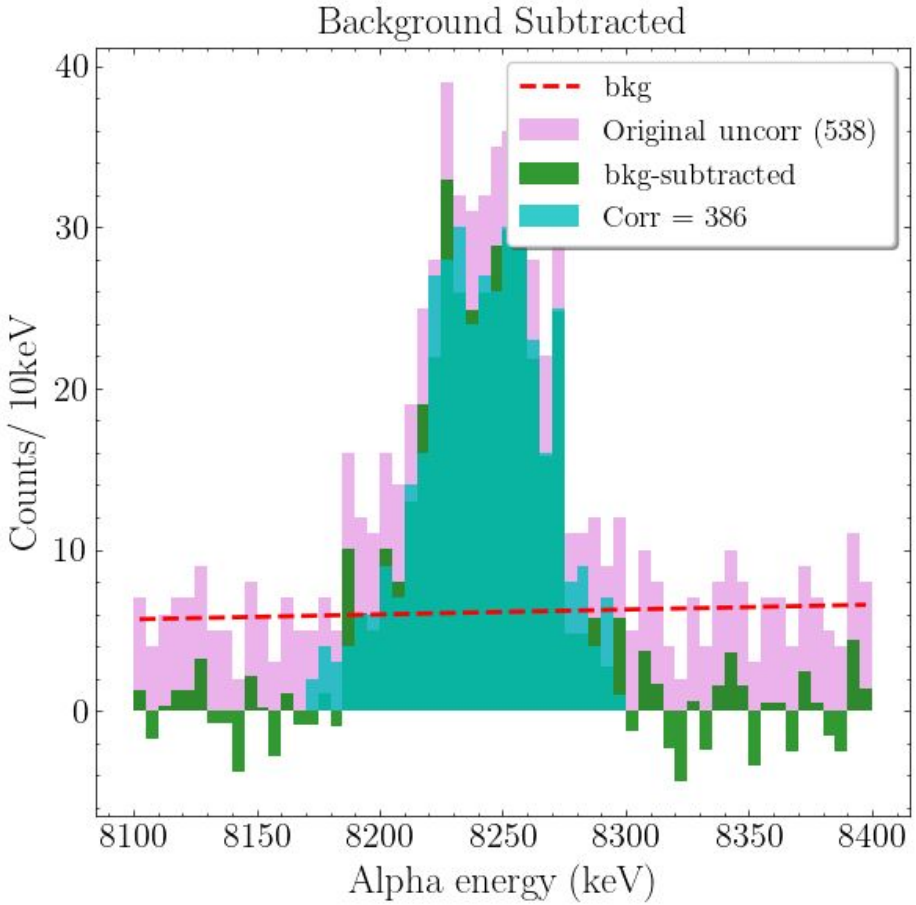


10 half-lives search time… = 99.9% corr / raw
We get 386 / 538 = 72% (with a tight alpha energy gate)

Missing EVRs? Or Background contribution?

Correlated vs. raw alphas



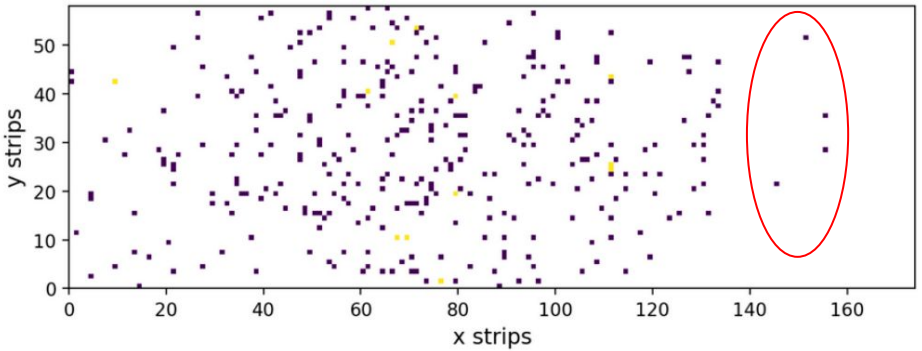


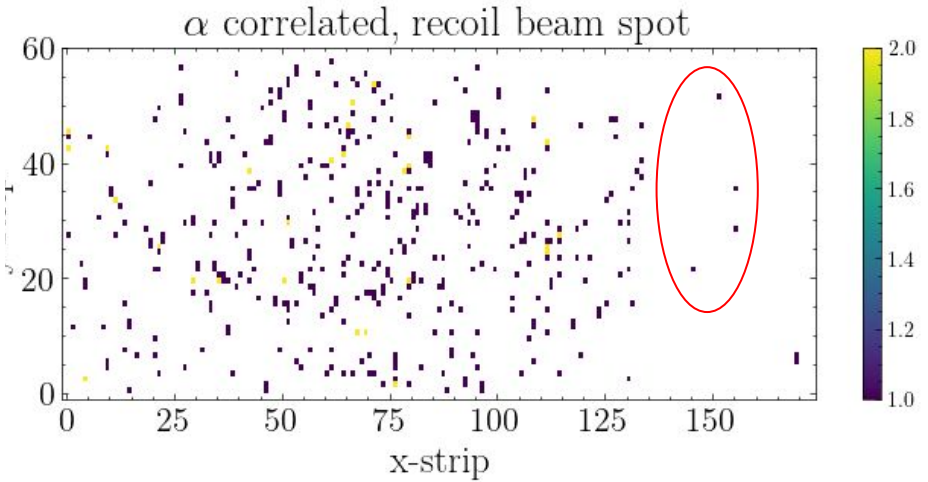
Rodney vs. Jamie 💪

R49 - 4mbar isob, -500, 50, 50V

Correlated events (8100-8400 alpha) (2000-8099 EVR) = 339 (R), 433 (J)

Evr-a / 1k ruth = 1.95 (R) , 2.52 (J)



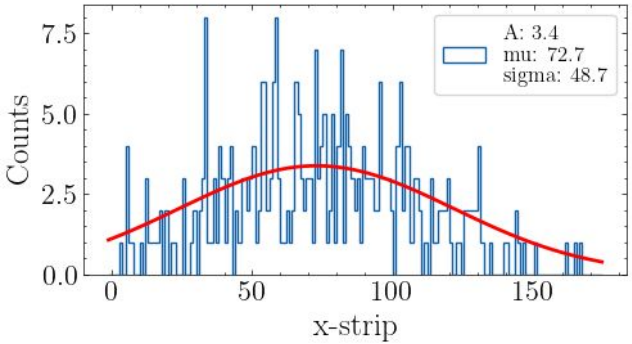


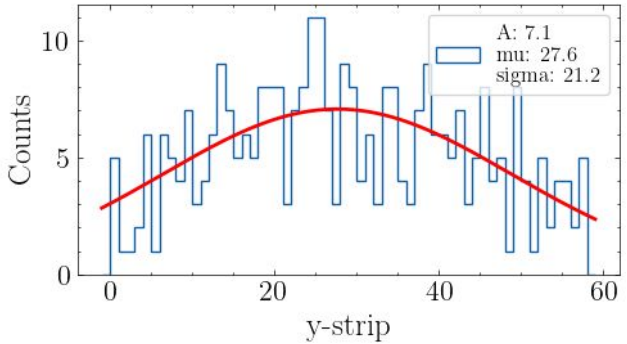
PPAC vs. No ppac Prelim

Run 51 (3.04hrs, ppac) vs Run 57 (3.74 hrs, no ppac)

EVR-alphas / 1k ruth : 1.97 (R51), 1.3 (R57)

With PPAC





No PPAC