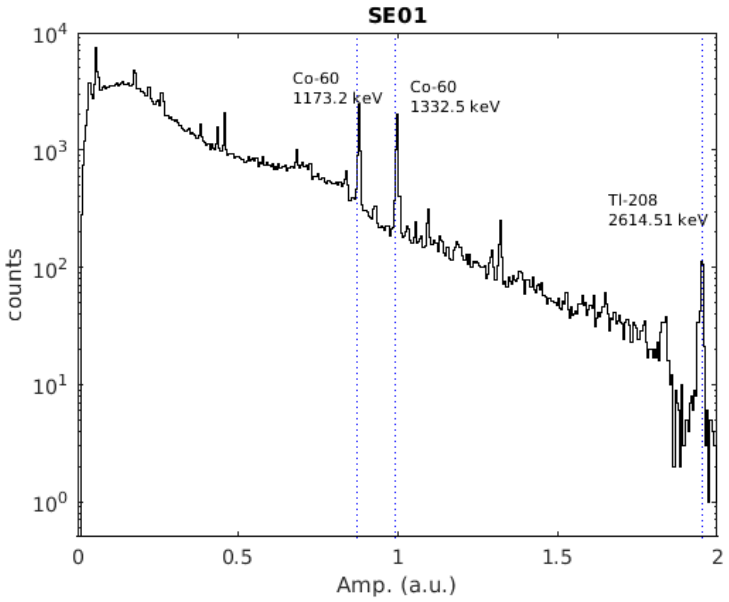
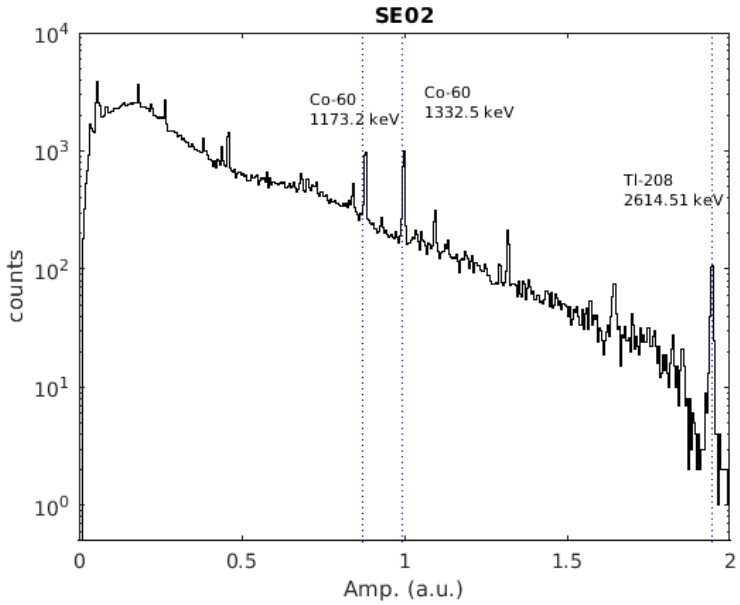
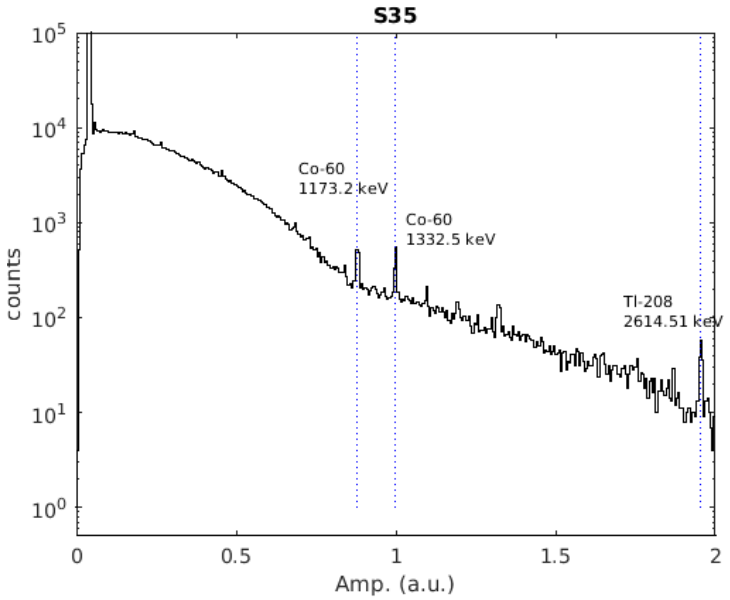
Weekly Report
2019-03-25

Kim, Hanbeom

Co-60 Crystal dependence?



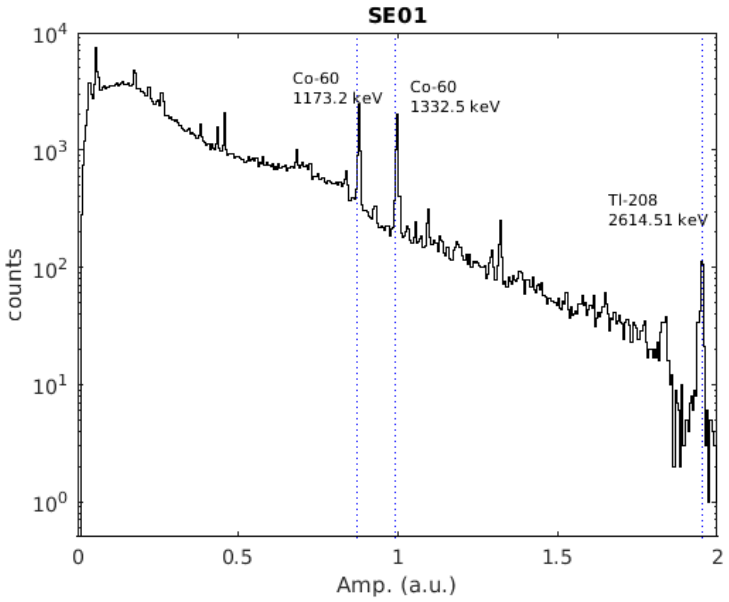


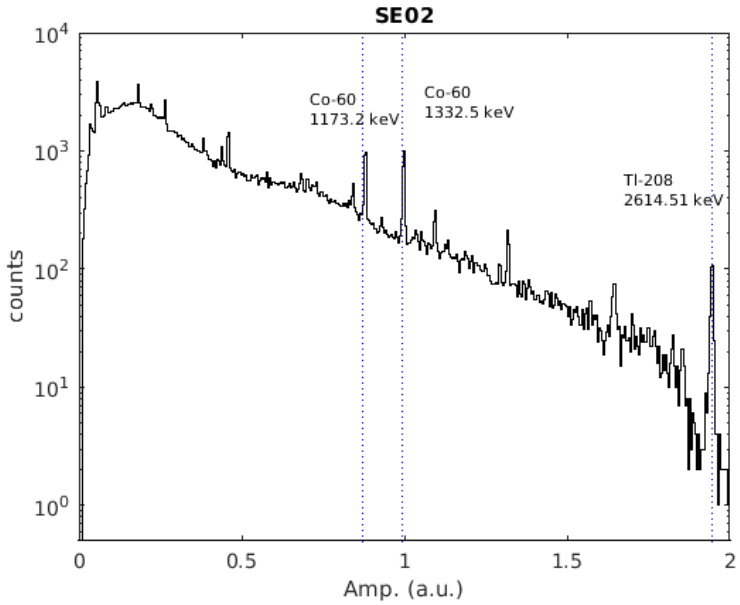


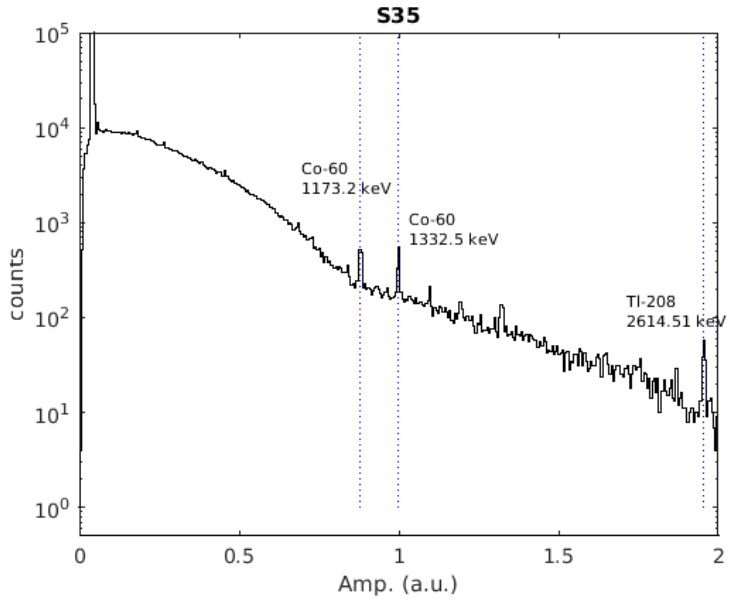
# of Co-60 1332.5 keV events (0.995<Amp.<1.005)
SE01: ~3100
SE02: ~1800
S35: ~800

~6.67 ×10^6 seconds

Co-60 Crystal dependence?



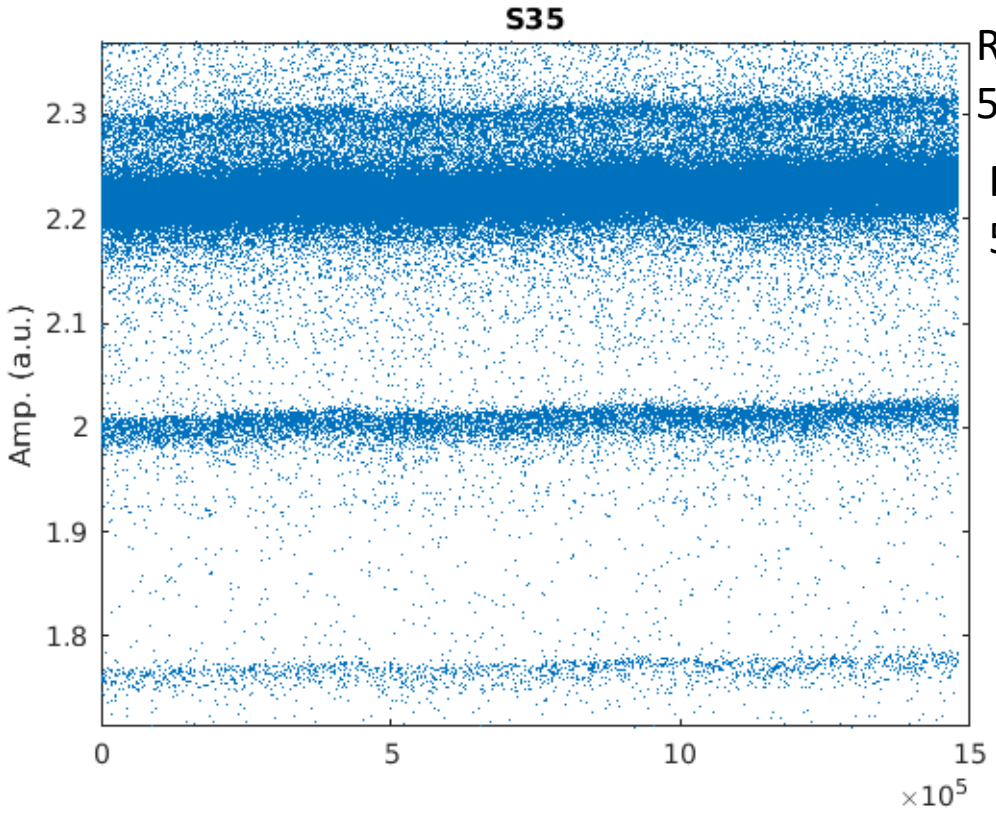




- Co-60 gamma events comes from copper frame and stainless steel components.
- Compton scattering (main), photoelectric, pair production …
- The larger crystal mass , the more full-absorption chances.

Mass in gram (g)
SE01: 353
SE02: 340
S35: 256

S35 – Drift Correction

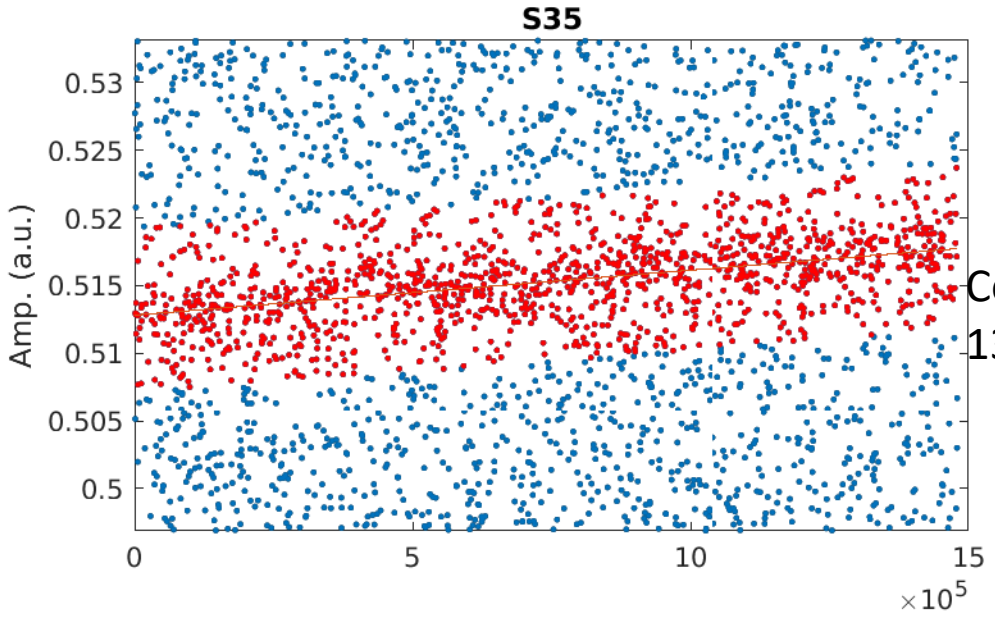


Rn-222
5590.3 keV

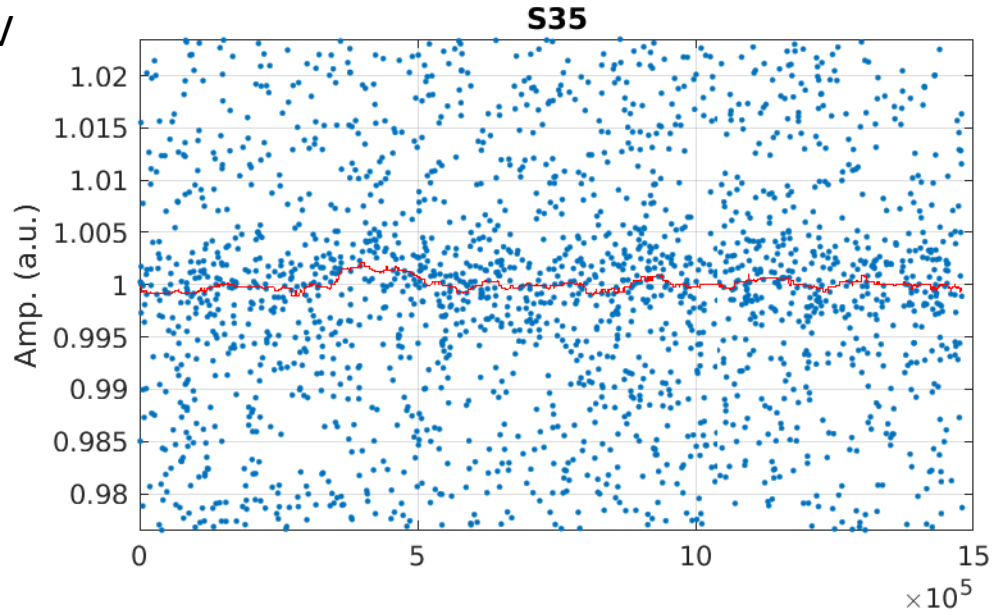
Po-210
5407.45 keV

Ra-226
4870.62 keV

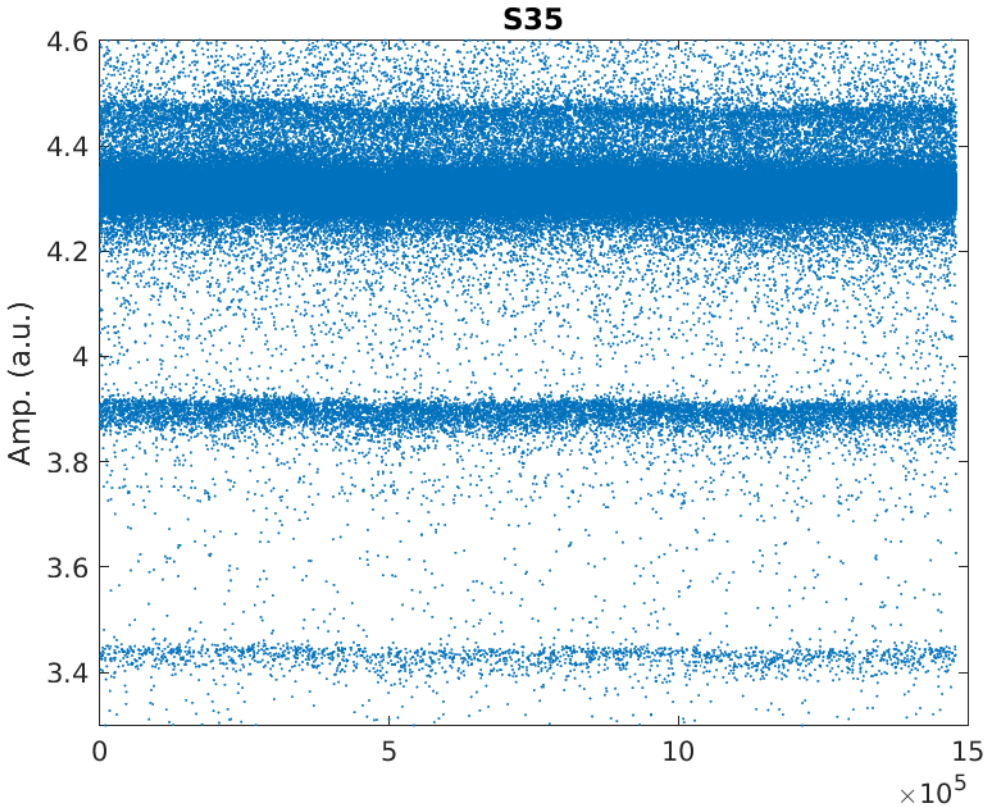
U-238
4269.7 keV



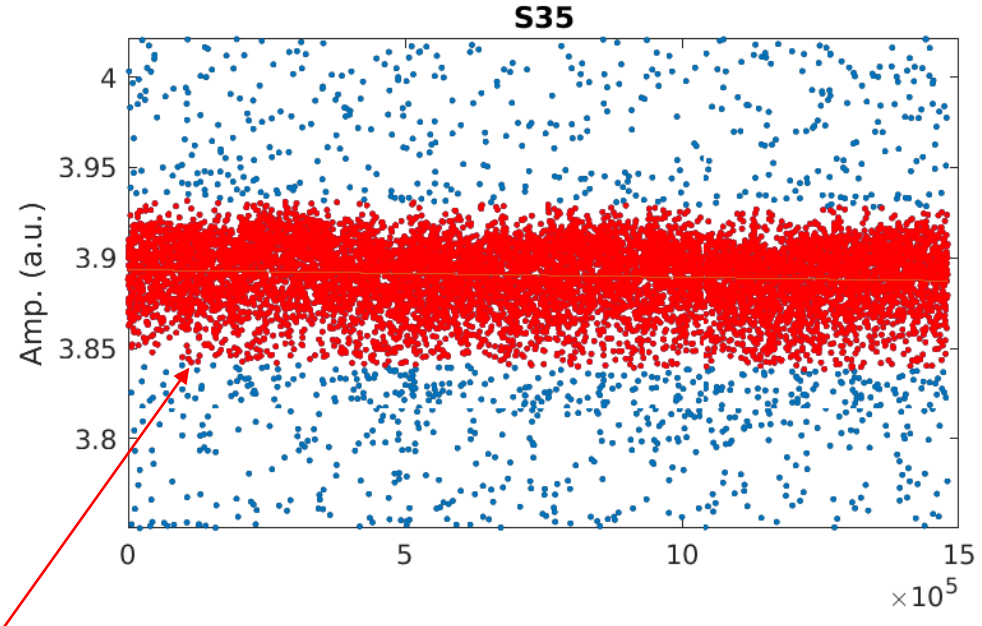
Co-60
1332.5 keV

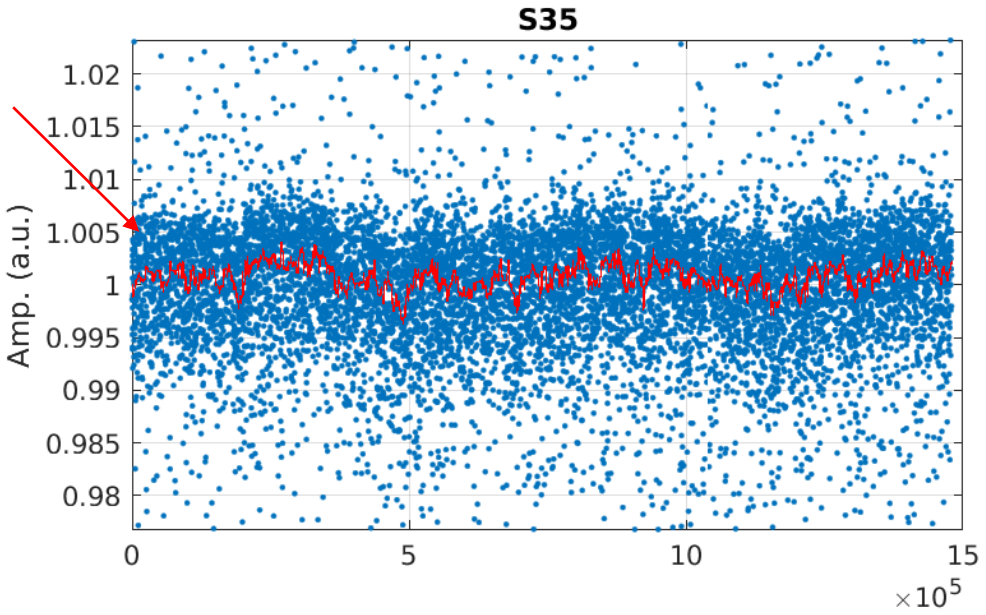


S35 – Calibration

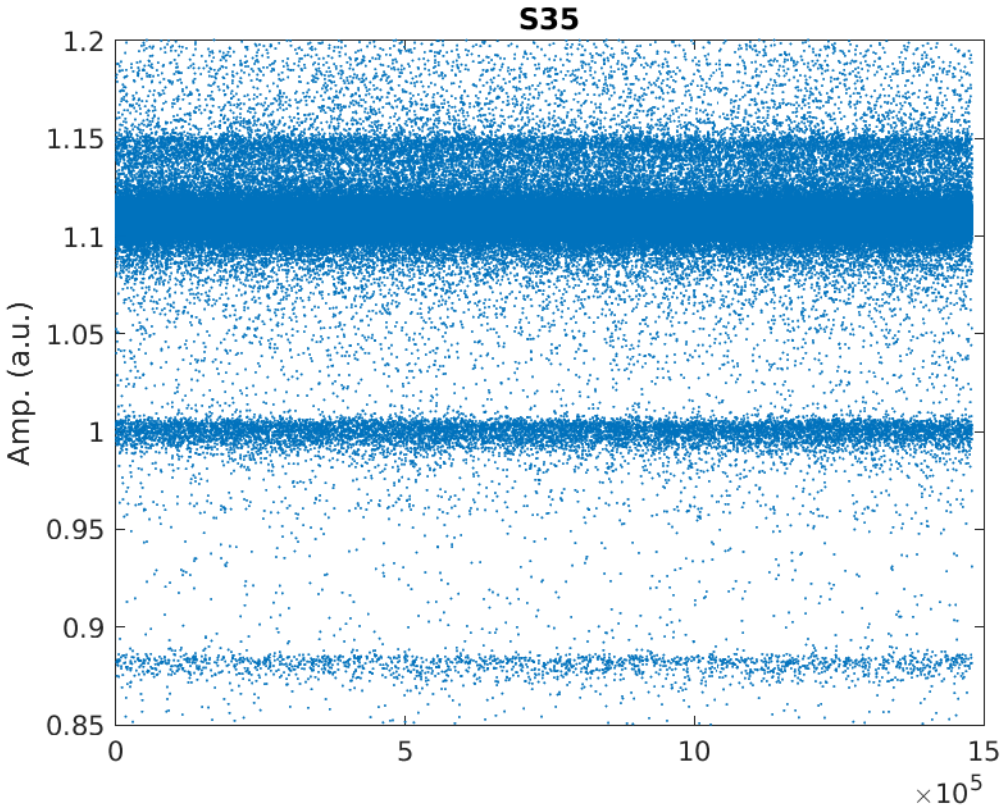


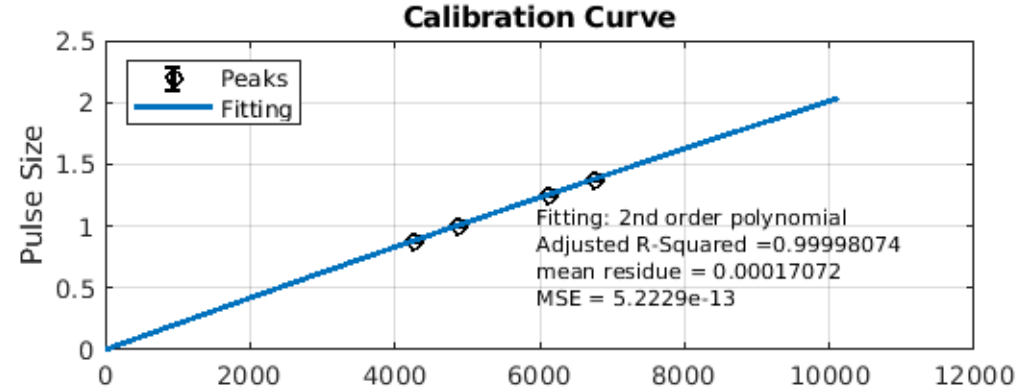
Ra-226
4870.62 keV

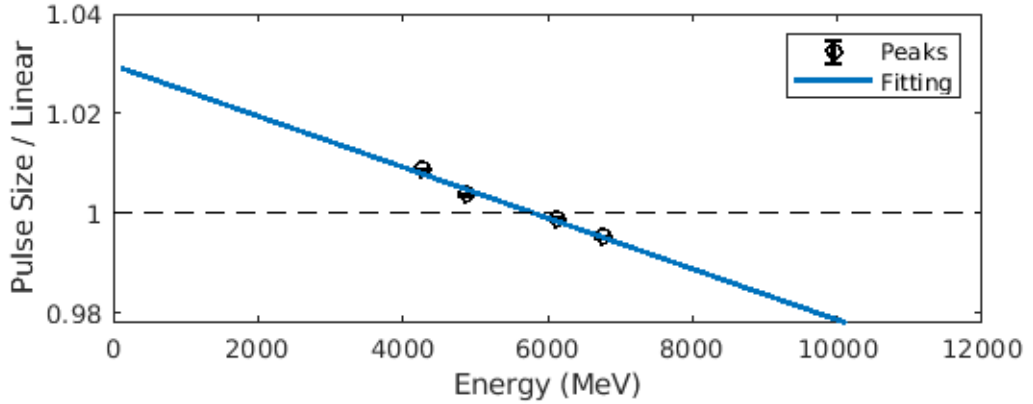


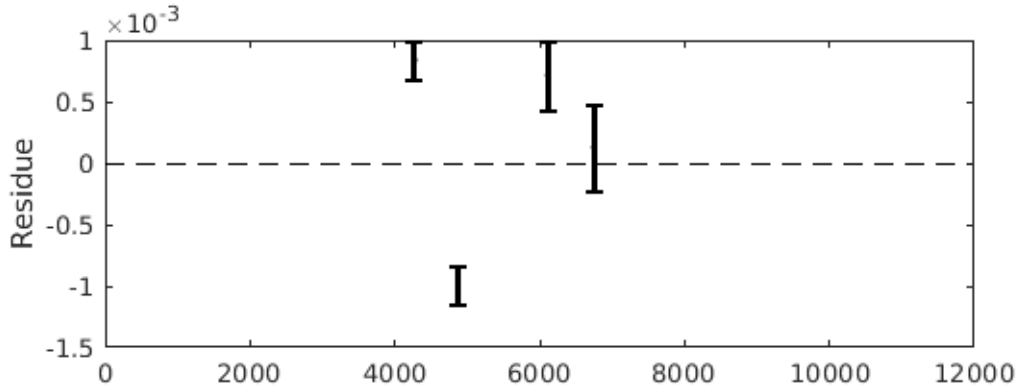


S35 – Drift Correction

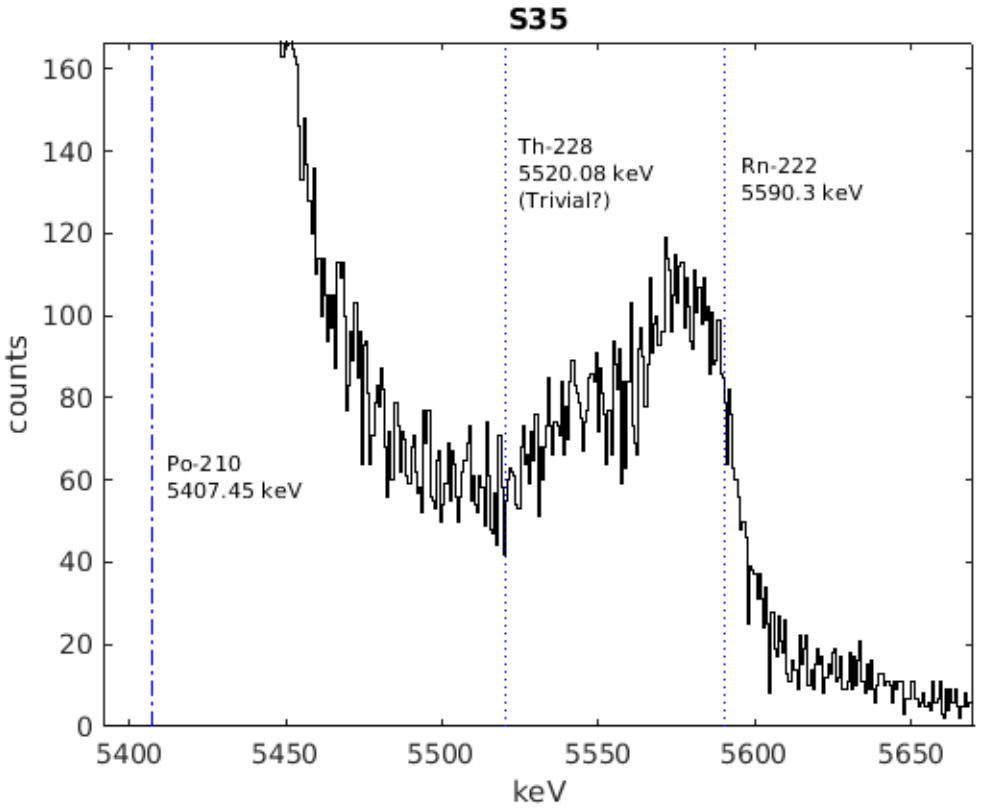


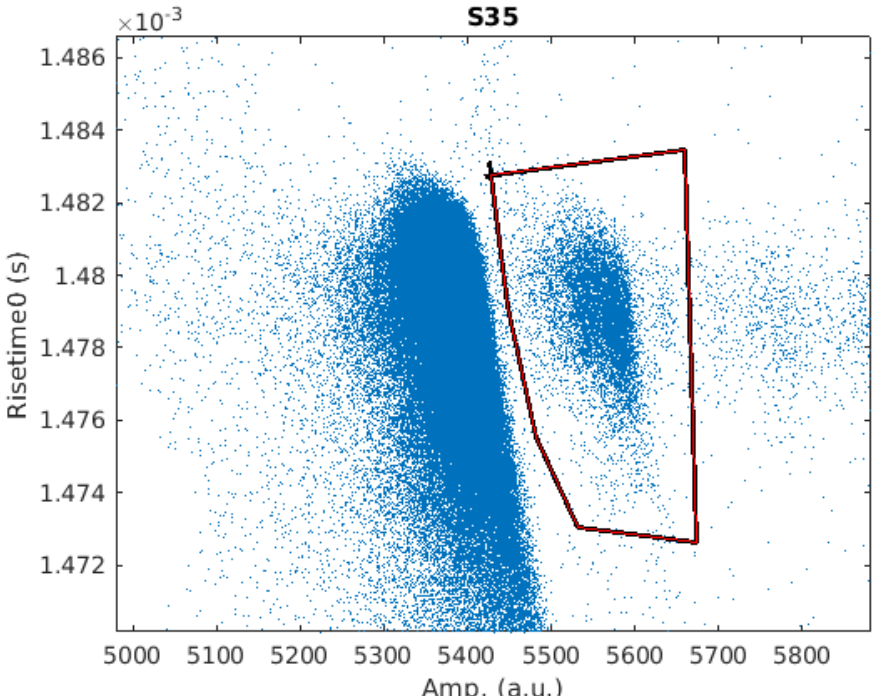


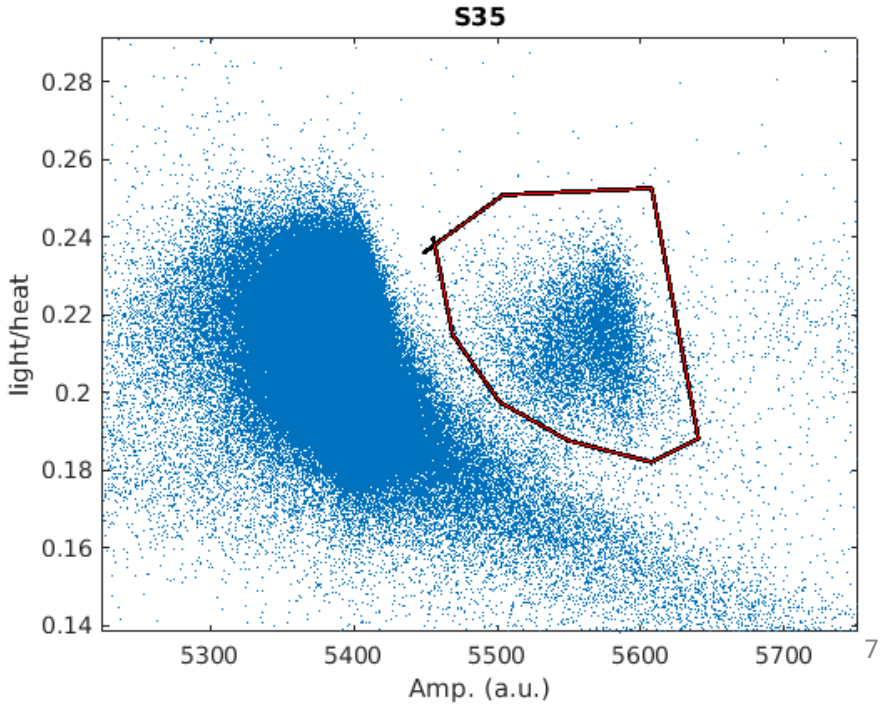




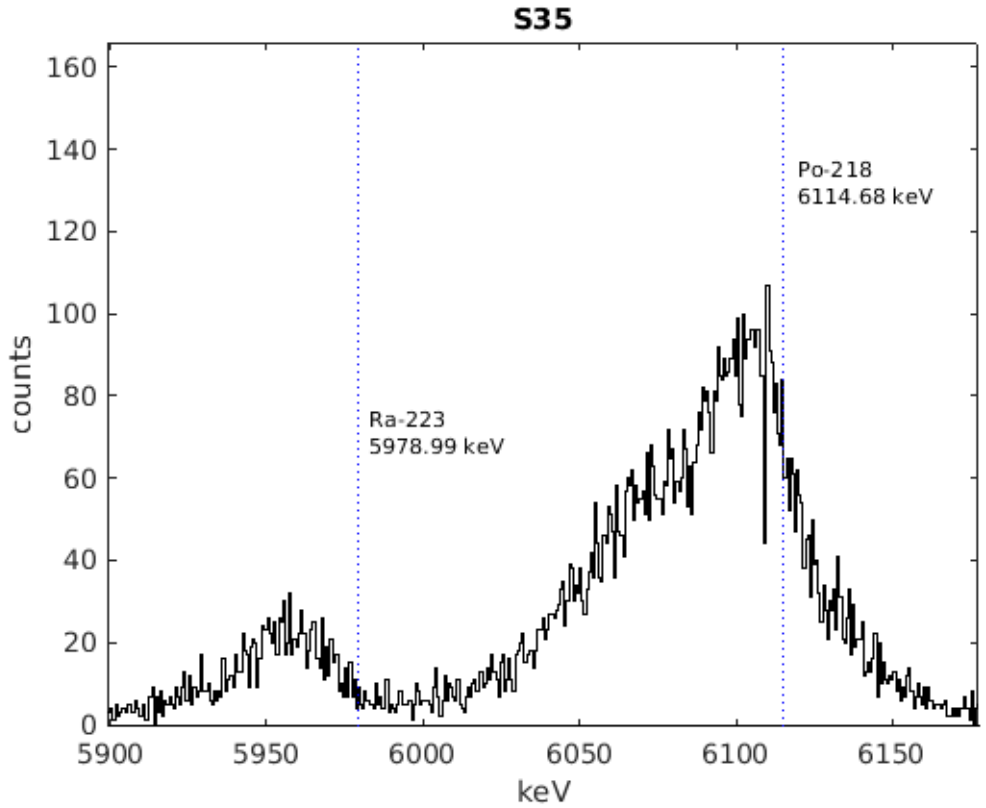
Po-218 vs. Rn-222 (S35)

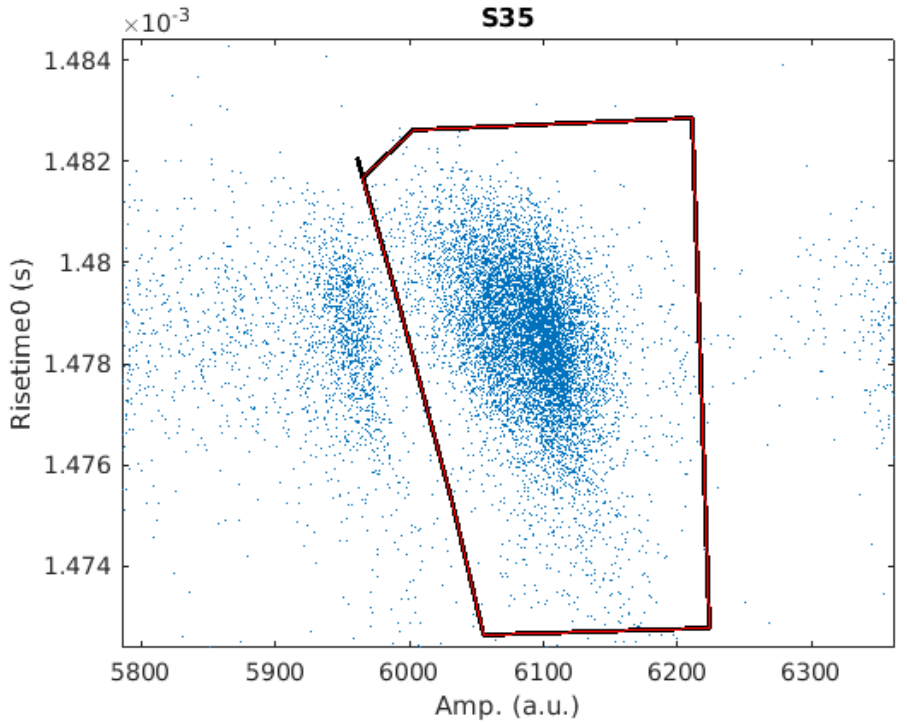


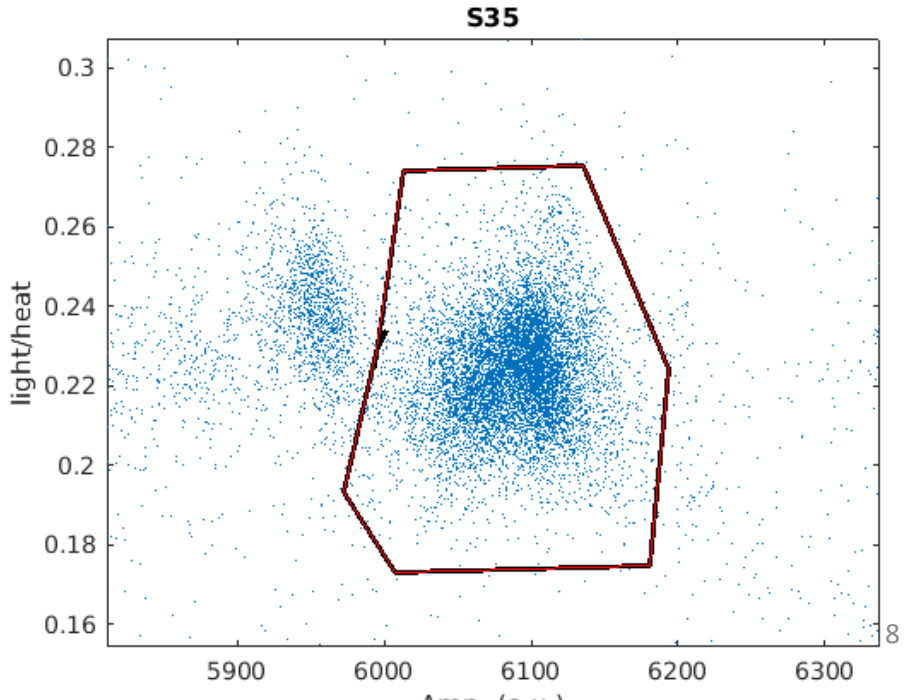




Po-218 vs. Rn-222 (S35)







Po-218 vs. Rn-222 (S35)

- # of events:
  - Rn-222: 8075
  - Po-218: 8974

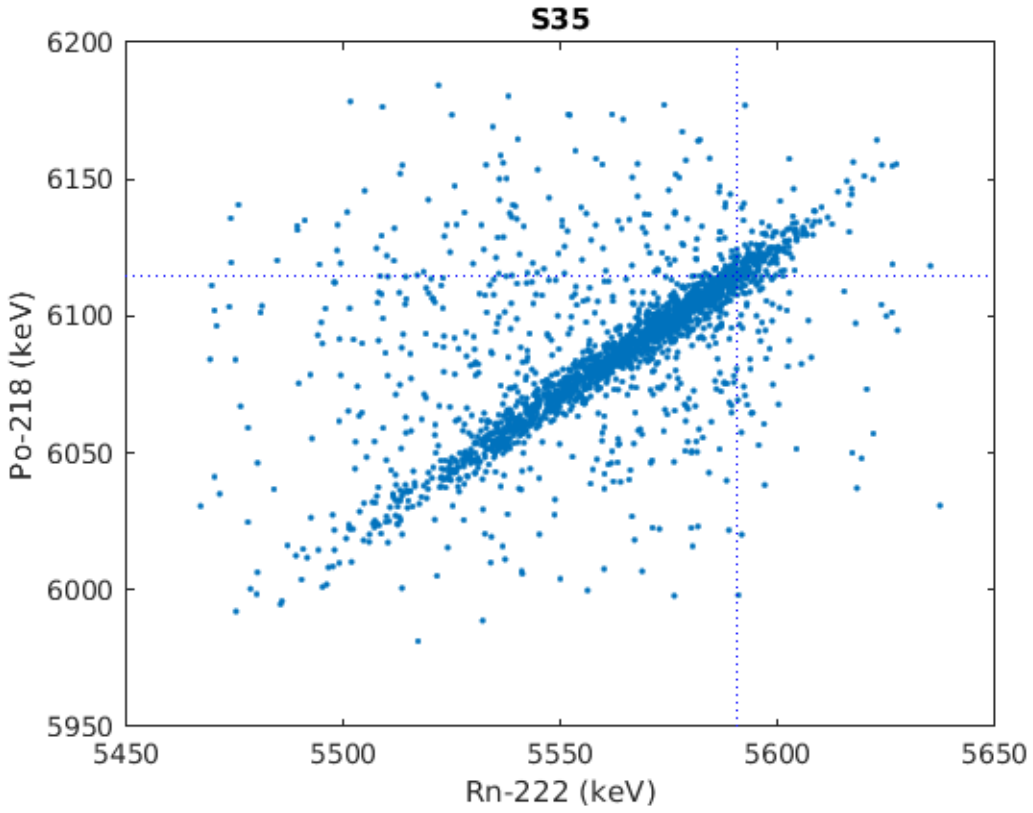
- 6669 of Rn events have Po signals within 10 min.

Po-218 vs. Rn-222 (S35)

- Problem I: some have more than 1 Po events within 10 min.
- Problem II: some Rn events share 1 Po events

➢2320 alpha pairs have been left (out of 6669).

Po-218 vs. Rn-222 (S35)



PTB SQUID test

- SQUIDs for AMoRE-I phonon sensor
  - (photon sensors: mainly JENA SQUIDs)
- 2 SQUIDs on each one chip
- Many!

PTB SQUID test

1. PCB board making
2. Chip washing & attaching
3. Wire-bonding
4. Room temperature test
5. 4K test