

Krypton Calibration

Run 7542

Krypton Calibration Group

Table: Conditions and data for run 7542

| Conditions | Data |
|------------------------|------------|
| run number | 7542 |
| file range | (0,2784) |
| date | 2019-09-20 |
| lab temperature: | 20.0 deg |
| Total number of S2s | 1757997 |
| Total number of events | 1507872 |

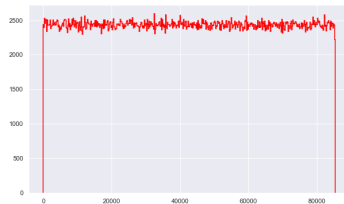
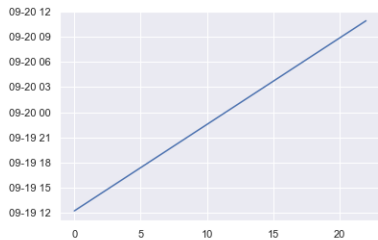


Figure: Run data.

Table: S1 & S2 for run 7542

| Conditions | Data |
|------------------------|------|
| fraction of S1s | 0.78 |
| fraction of S2s (1 S1) | 0.97 |
| fraction 1 S2 & 1 S1 | 0.75 |

Table: S1 & S2 selection for run 7542

| Variables | Data |
|----------------------|---------------------------|
| s_1 energy | 3 pes to 25 pes |
| s_2 energy (PMTs) | 3000 pes to 13000 pes |
| s_2 charge (SiPMs) | 200 pes to 800 pes |
| s_2 width | $5\ \mu s$ to $15\ \mu s$ |
| n_{sipm} min | 15 |

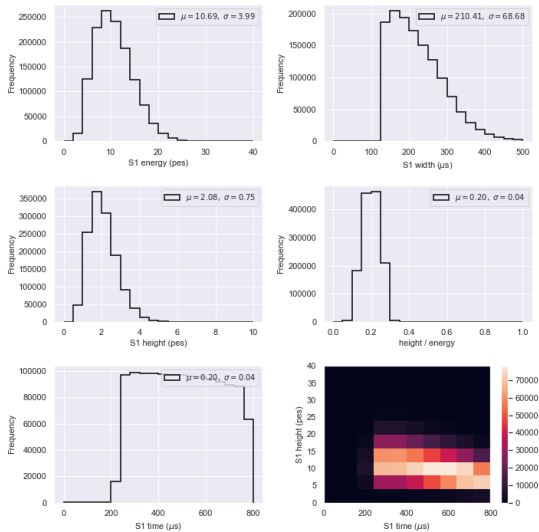


Figure: S1 distributions.

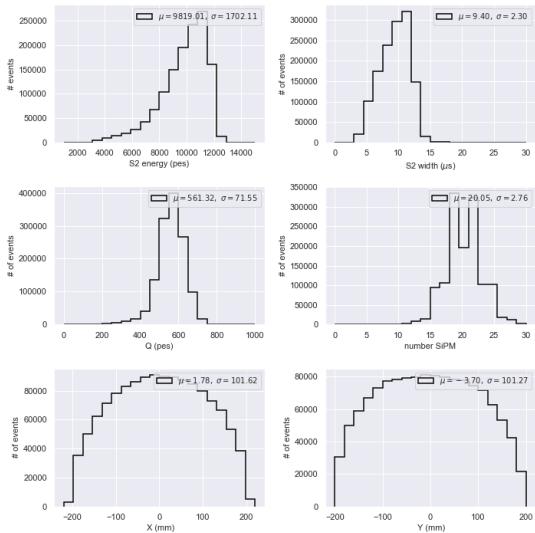


Figure: S2 distributions.

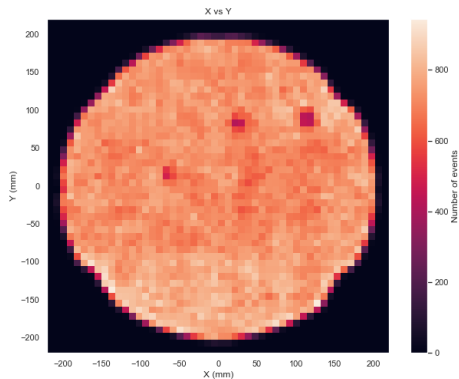


Figure: XY distribution.

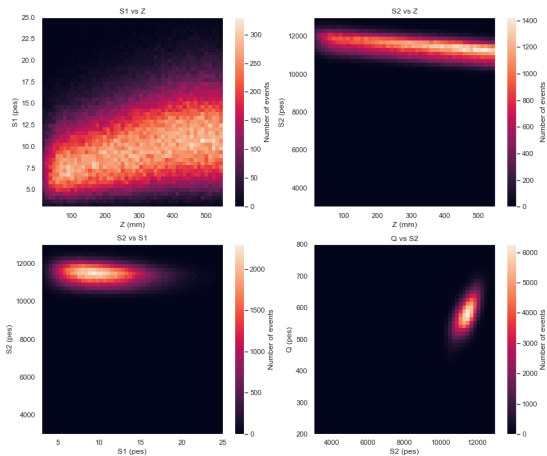


Figure: S1, S2 & Q distributions.

Lifetime distributions

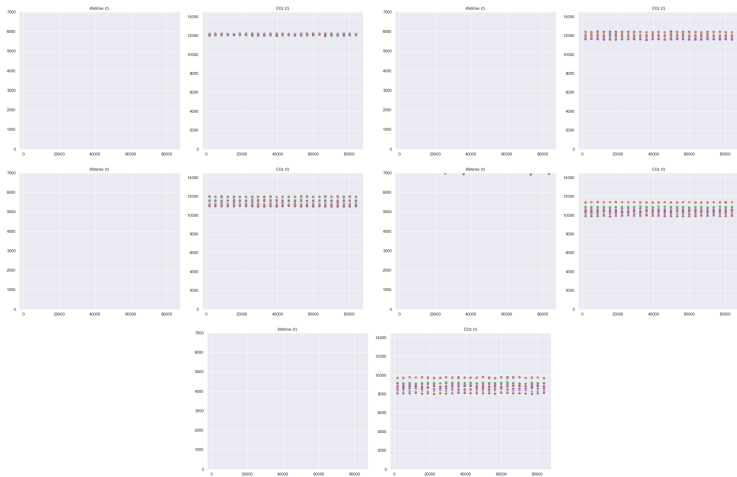


Figure: Distributions of lifetime and E_0 for 5 radial sectors (40, 80, 120, 160, 200).

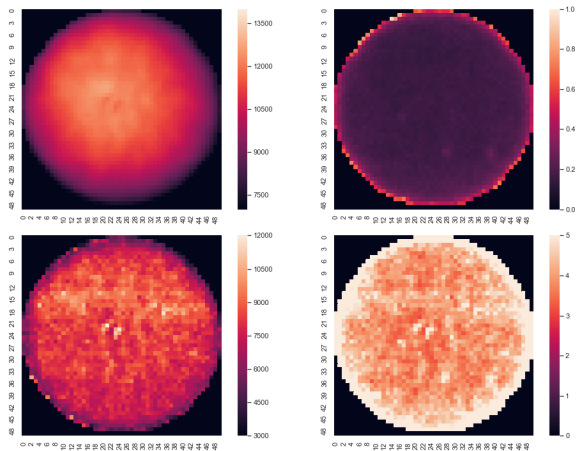


Figure: Lifetime and geometrical map.

Lifetime maps

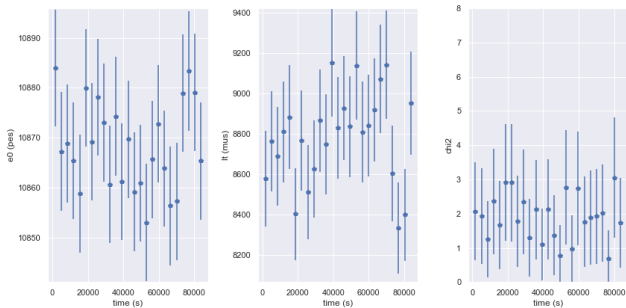


Figure: Average lifetime.

Lifetime and geometry correction

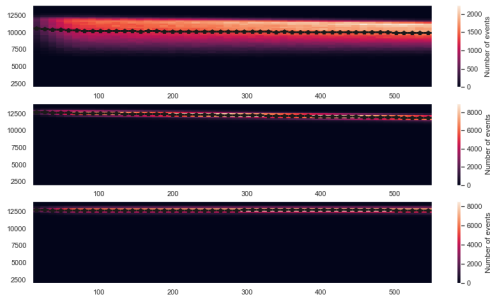


Figure: Lifetime and geometry correction.

R Profile showing R dropout

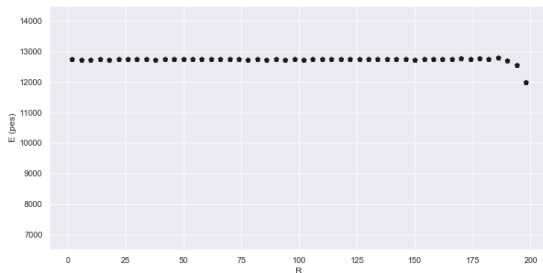


Figure: R profile shows that fiducial volume must be $R < 180\text{mm}$.

Profiles after $R < 180\text{mm}$

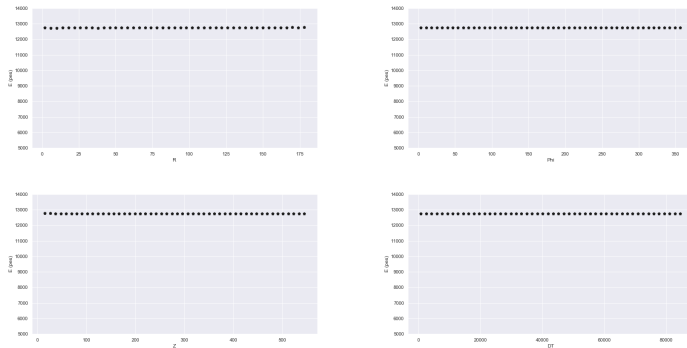


Figure: Profiles showing correction is robust.

Resolution fits as a function of R and Z

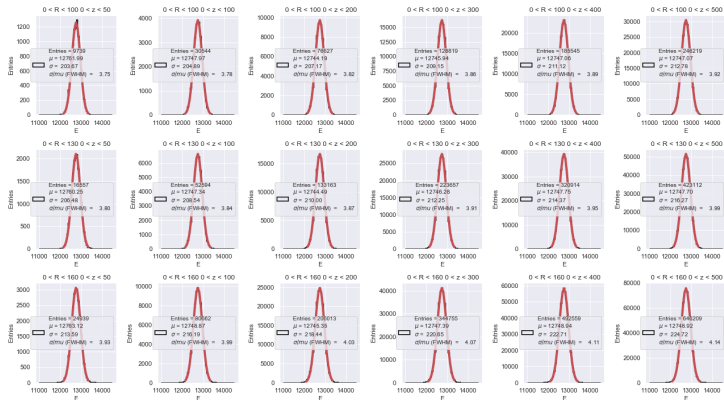


Figure: Resolution fits.

Resolution as a function of R and Z

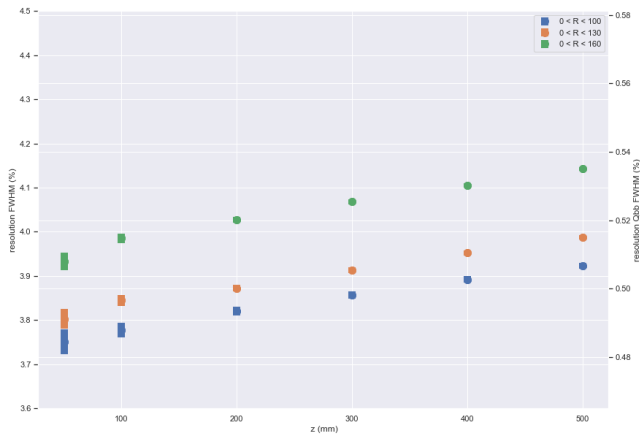


Figure: Resolution fits.

Efficiency over time

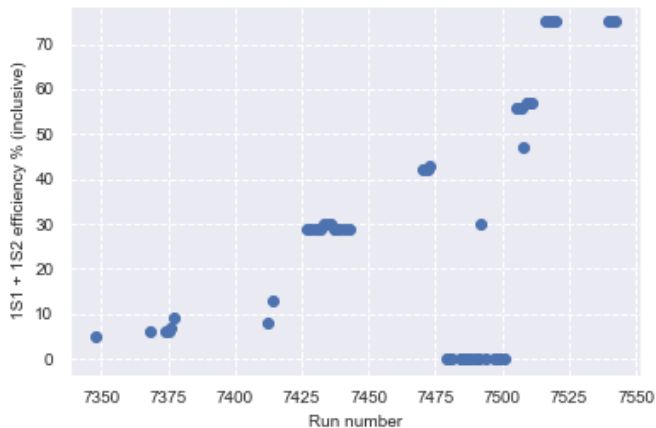


Figure: Efficiency tracking over time.

Response over time

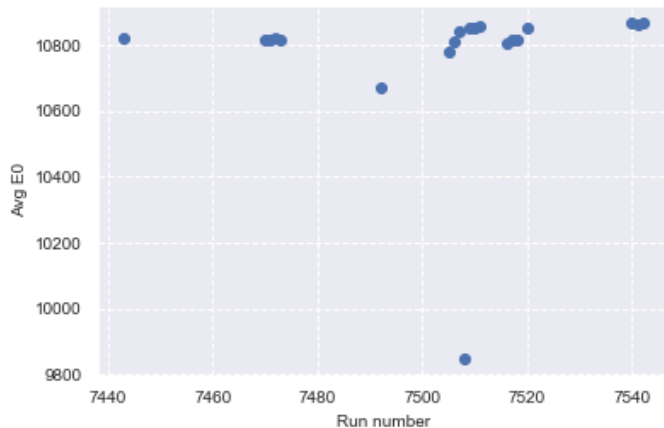


Figure: Response tracking over time.

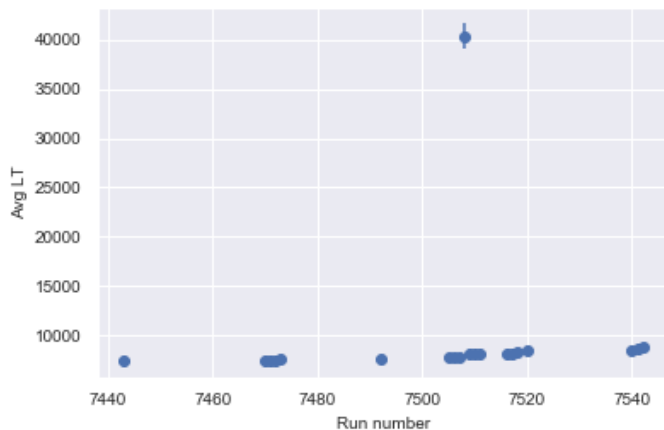


Figure: Lifetime tracking over time.

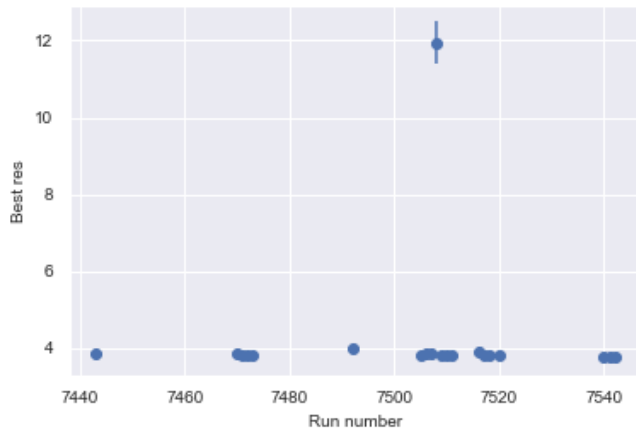


Figure: Resolution tracking over time.