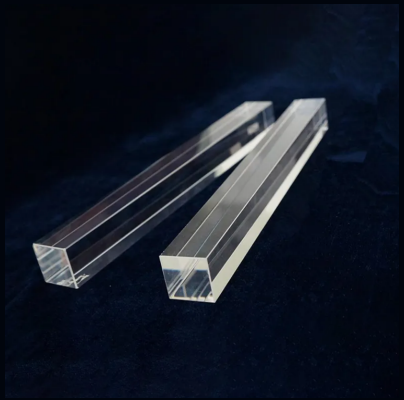
CsI crystal characterization

update for DAMSA

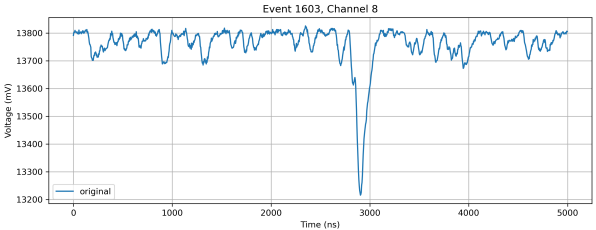


Nika Shalamova
Anthony Gomez
Shawn Westerdale

UC Riverside

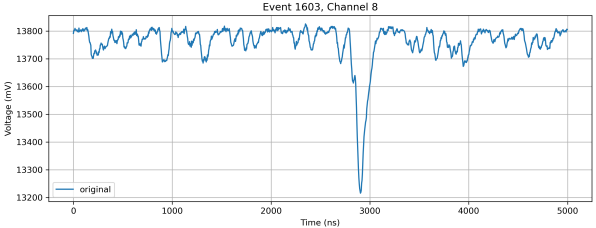
December 2, 2025

Data

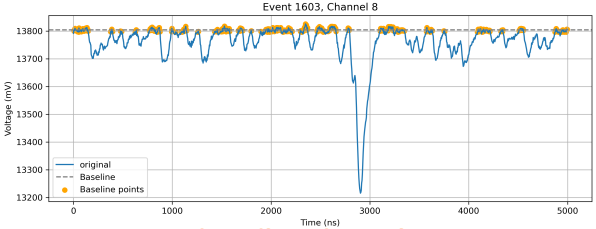


raw waveform

Data

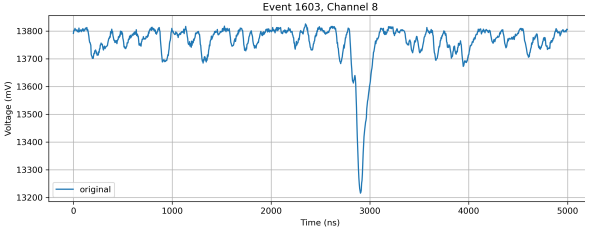


raw waveform

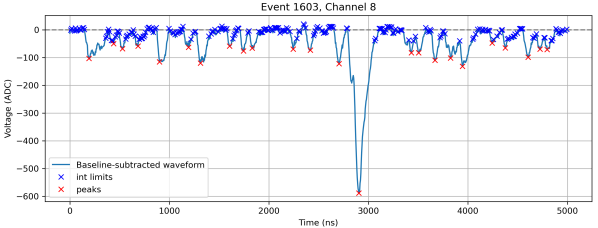


baseline detection

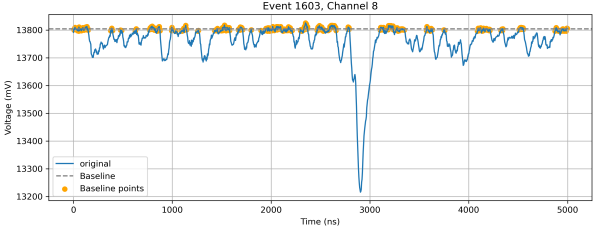
Data



raw waveform

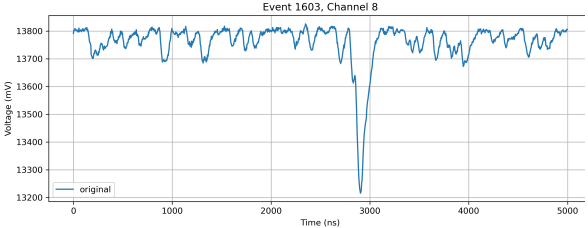


baseline subtracted + peak finder



baseline detection

Data



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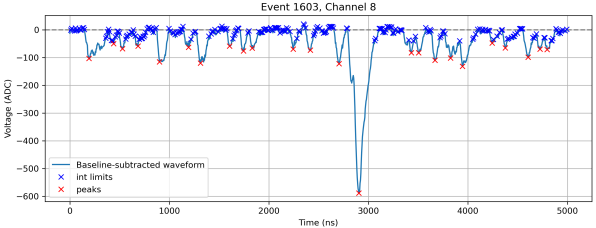
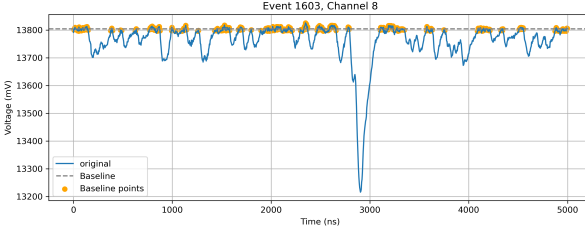
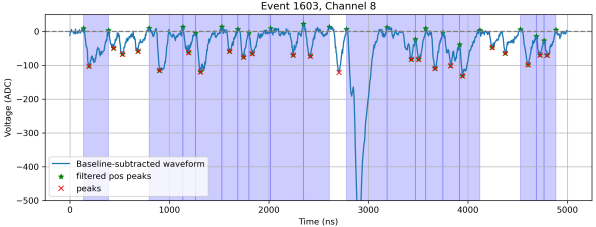


baseline subtracted + peak finder

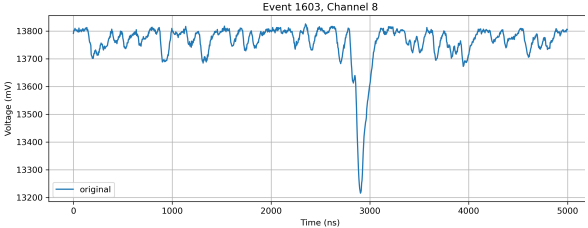


baseline detection

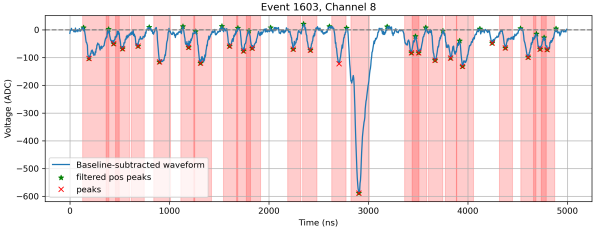


integration limits

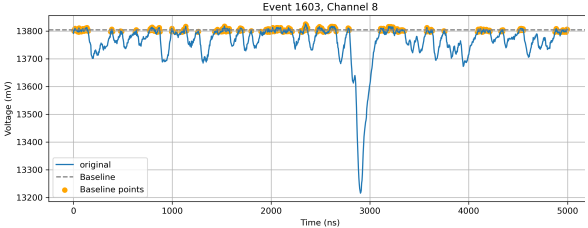
Data



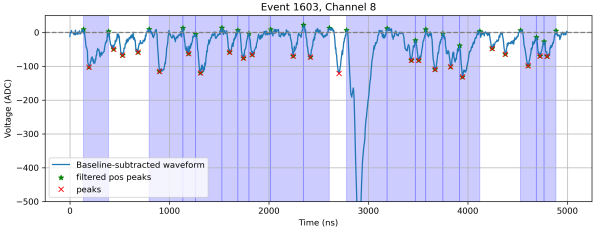
raw waveform



peak finder integration limits

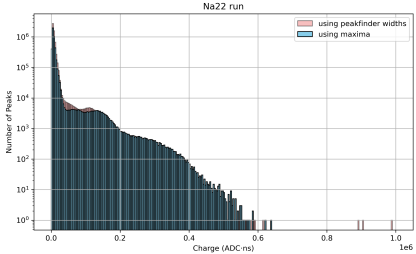


baseline detection

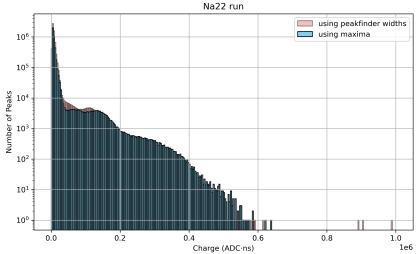


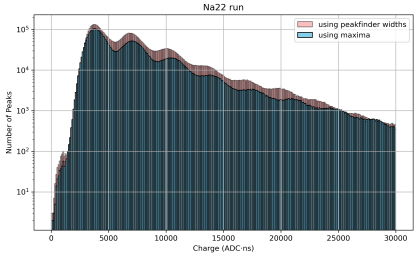
integration limits

Na22 spectrum and SPE calibration



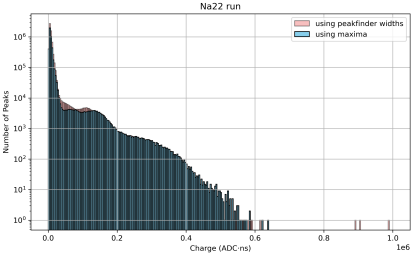
Na22 spectrum and SPE calibration

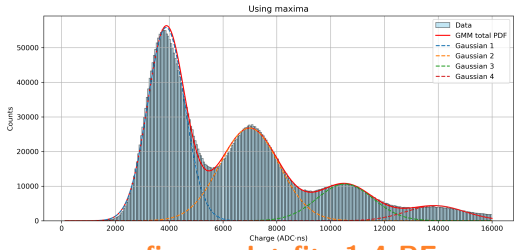




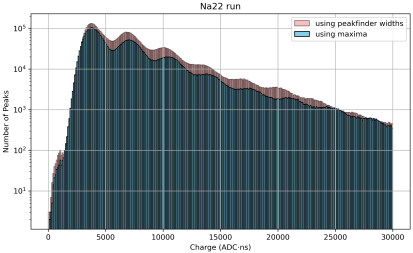
zoomed in

Na22 spectrum and SPE calibration

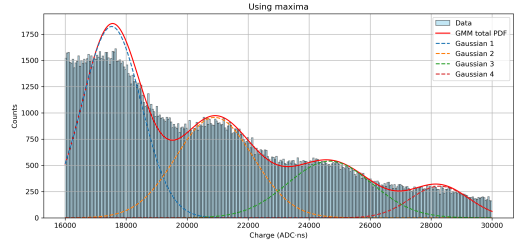




finger plot fit: 1-4 PE

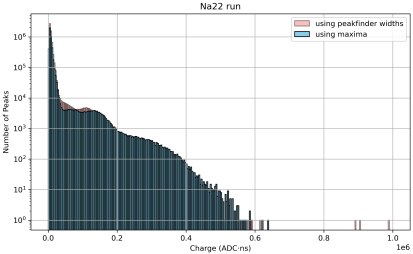


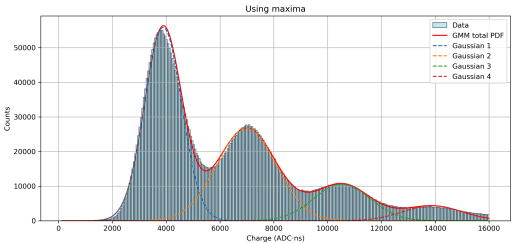
zoomed in



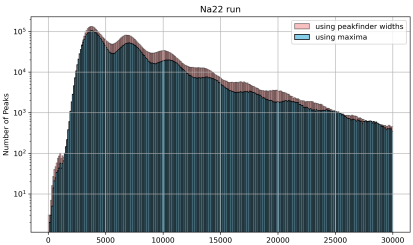
finger plot fit: 5-8 PE

Na22 spectrum and SPE calibration

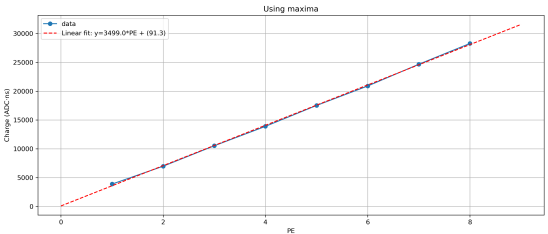




finger plot fit: 1-4 PE

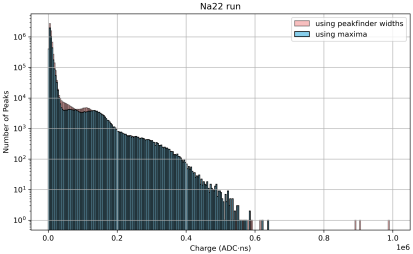


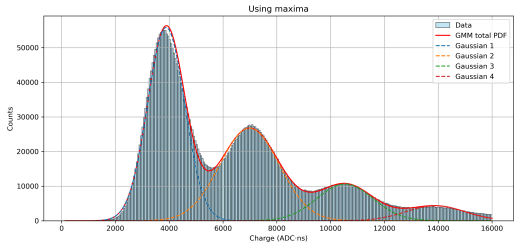
zoomed in



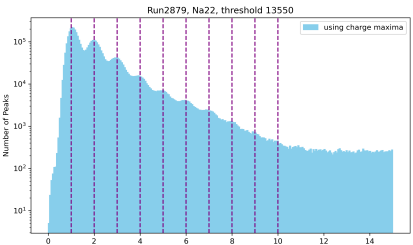
SPE calibration

Na22 spectrum and SPE calibration

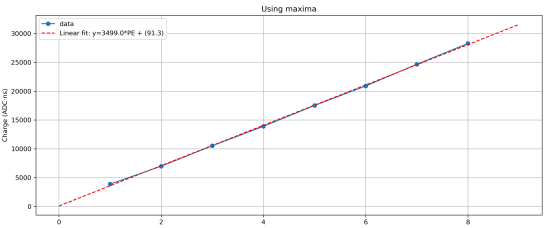




finger plot fit: 1-4 PE

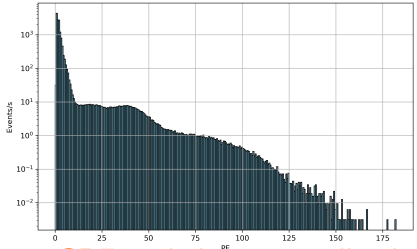


SPE normalized

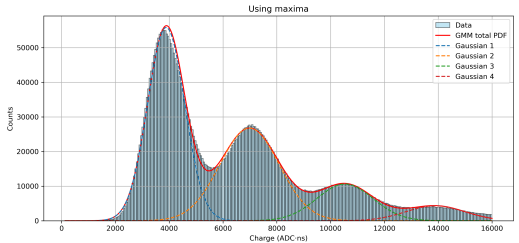


SPE calibration

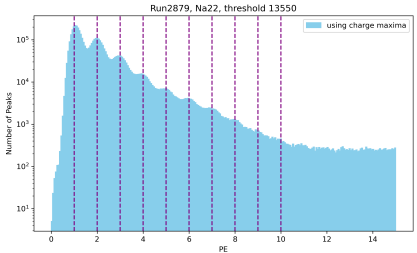
Na22 spectrum and SPE calibration



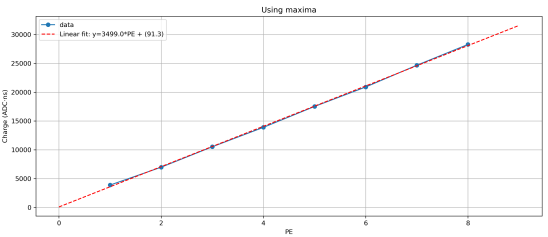
SPE and time normalized



finger plot fit: 1-4 PE

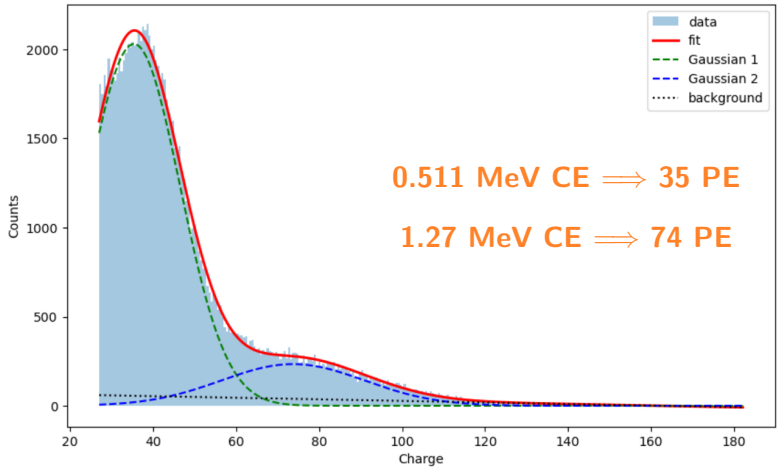


SPE normalized



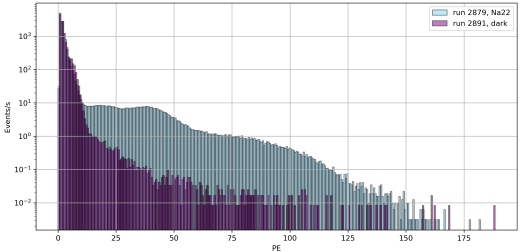
SPE calibration

Compton edge

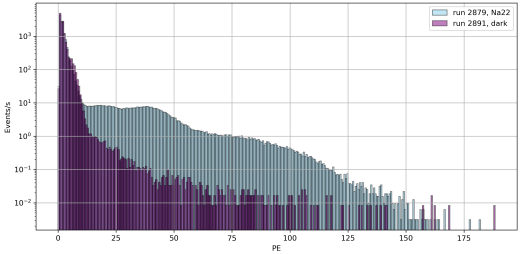


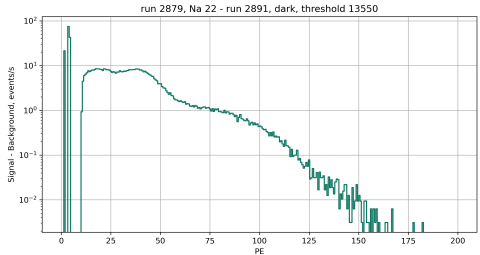
amplitude1: 2029.9007581929466 mean1: 35.37158795688413 sigma1: 11.143394460764
amplitude2: 233.83962045289502 mean2: 73.70363697620921 sigma2: 17.291552982285488
b: 71.60344740355269 k: -0.44154656326790354

Signal - noise



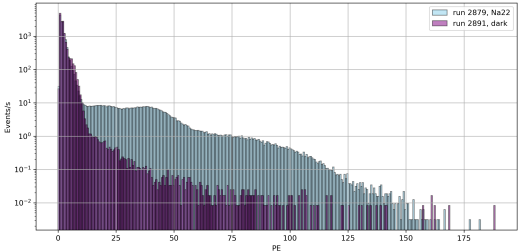
Signal - noise

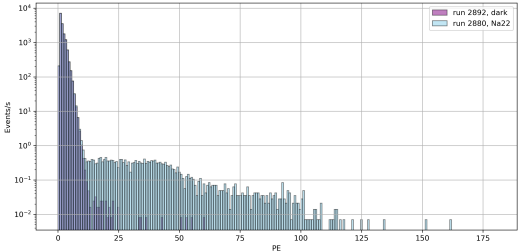


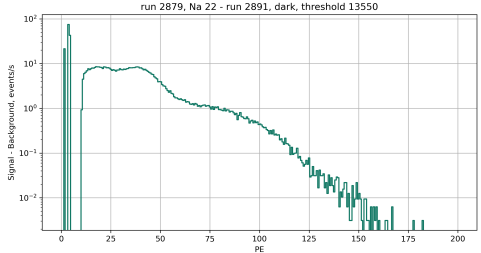


threshold 13550

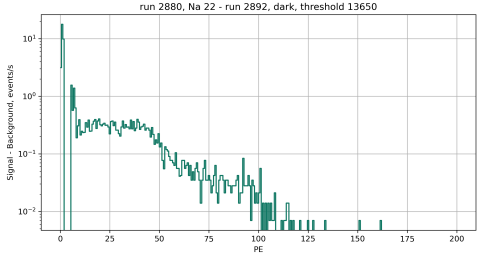
Signal - noise





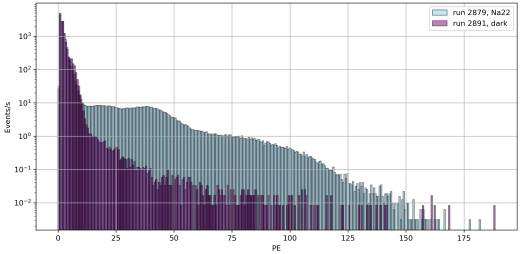


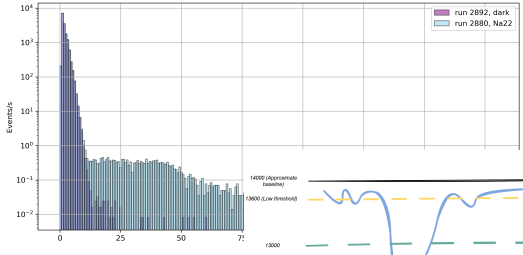
threshold 13550

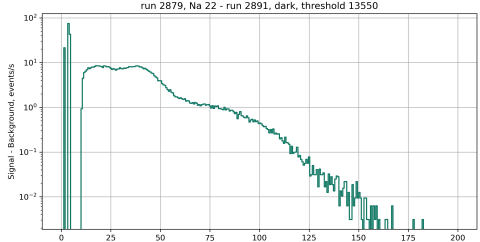


threshold 13650

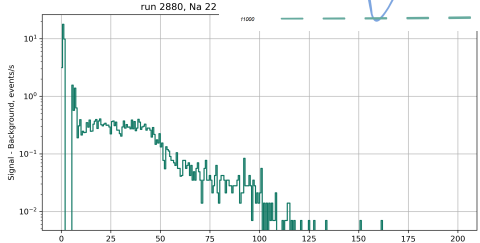
Signal - noise





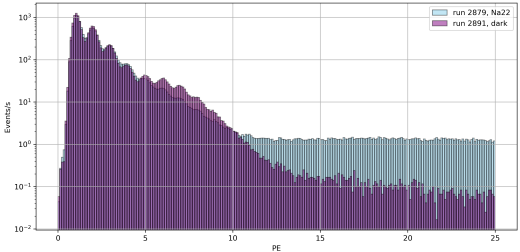


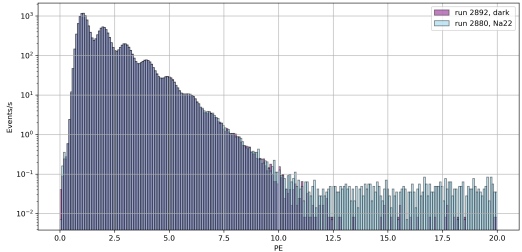
threshold 13550



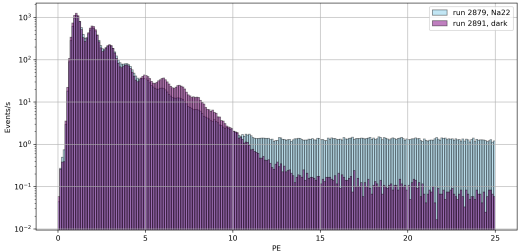
threshold 13650

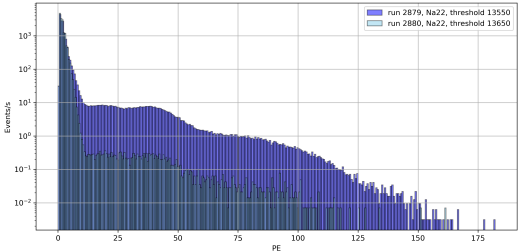
Work in progress



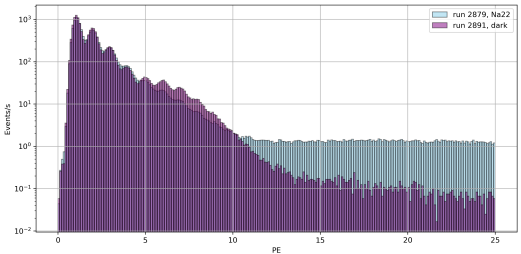


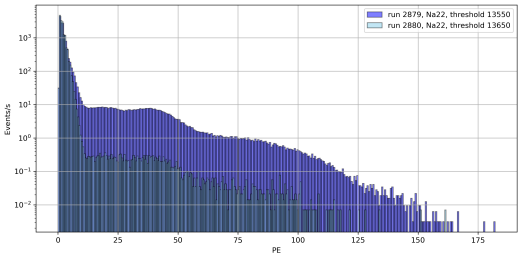
Work in progress





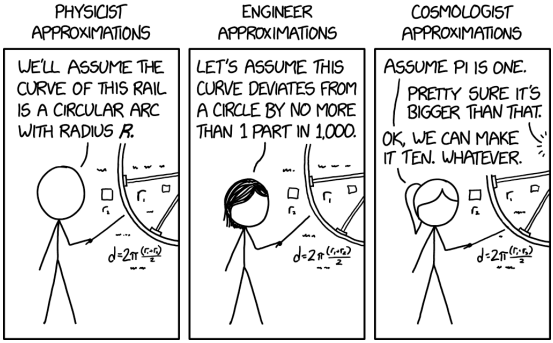
Work in progress





- Fix the trigger
- Compare Anthony's and Nika's analysis
- Design a stand
- We built a led house for scintillators $\Longrightarrow$ we can shield from ambient background now
- Source position, reflectors, Co-60

Thank you for attention :)



https://xkcd.com/

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