

A first wild look at Cs-137

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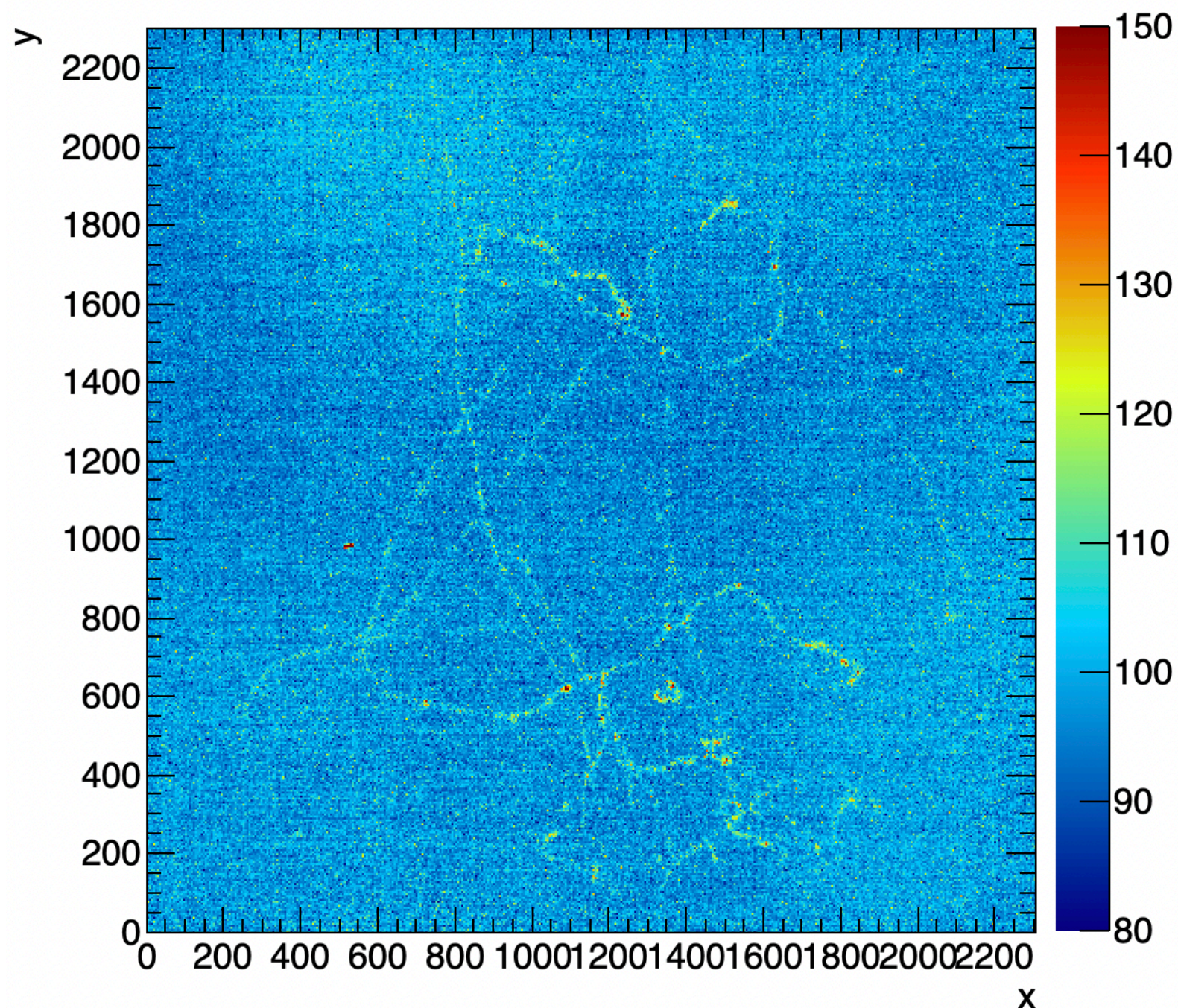
CYGN0 reco and analysis meeting,
18 February 2021

Four sets of data reconstructed and analyzed:

1. Data with ^{55}Fe , runs of 16 June 2020 [3685 - 3693]: z-scan with same HV of AmBe runs. $V_{\text{GEM}1,2,3} = 440 \text{ V}$, $V_{\text{drift}} = 930 \text{ V/cm}$
2. Cs-137 runs: July 2020 runs [3814 - 3820] (more available)
3. No source, just before the source [3809-3812]

Pedestal run 3808. Run the reconstruction out-of-the-box v4 (new noise filtering, vignetting correction applied)

tracks example

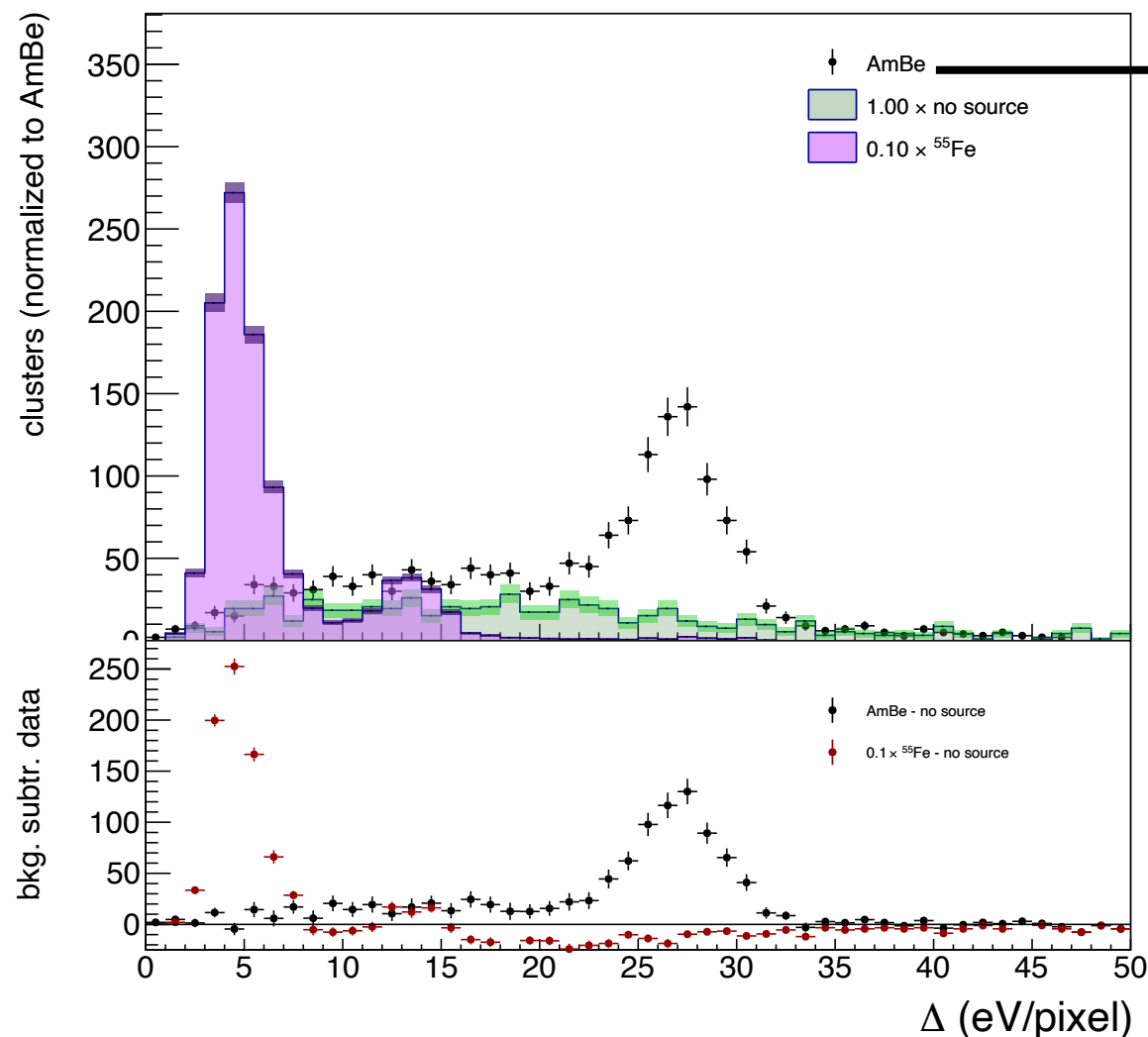


N.B.: these data are affected by some light inside the box

Conclusions & todo

The "cosmics control region" (long tracks, $L > 12$ cm) looks reasonable.

Looking to short tracks with the "AmBe" selection. Longer clusters need a better background study

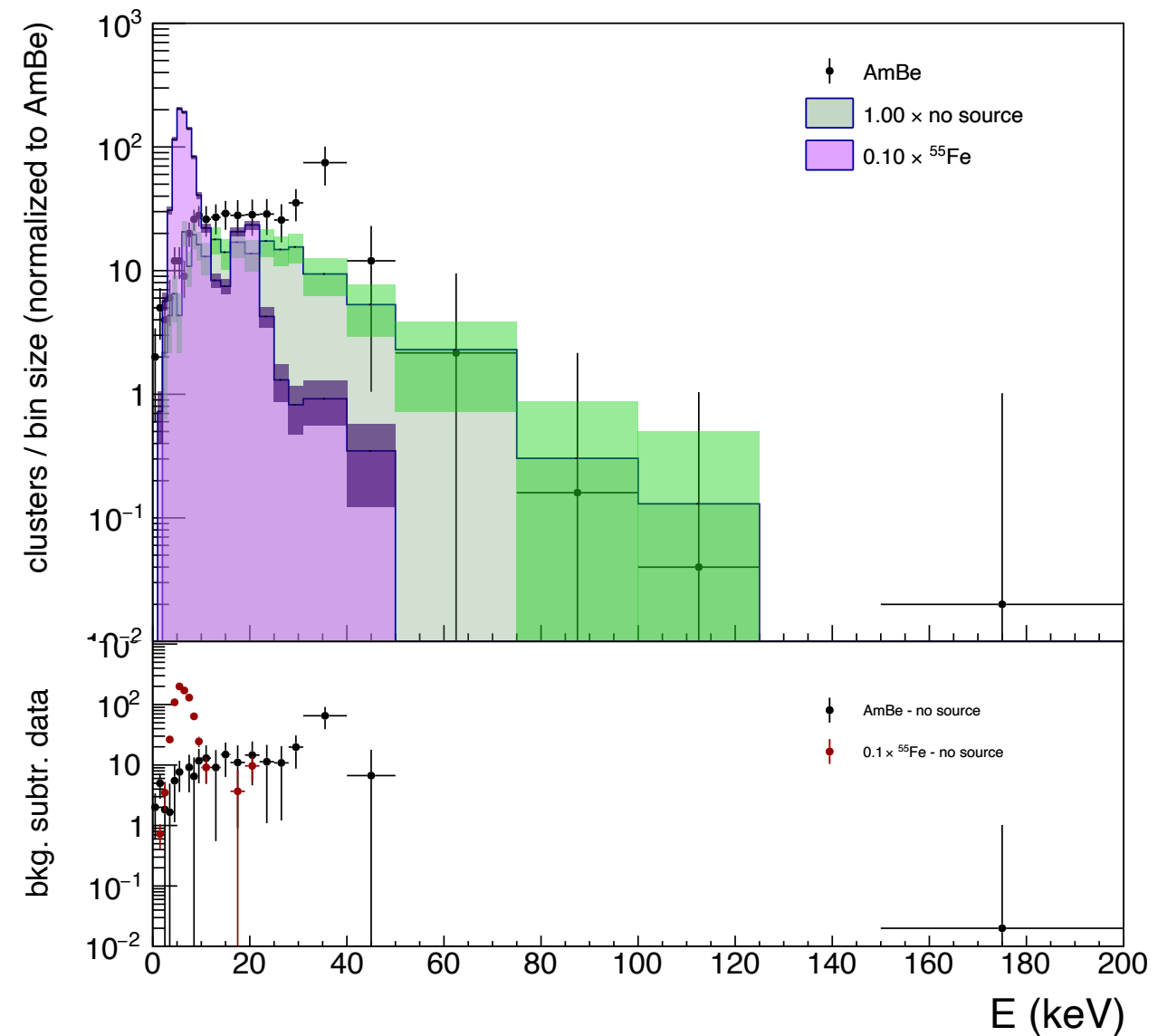
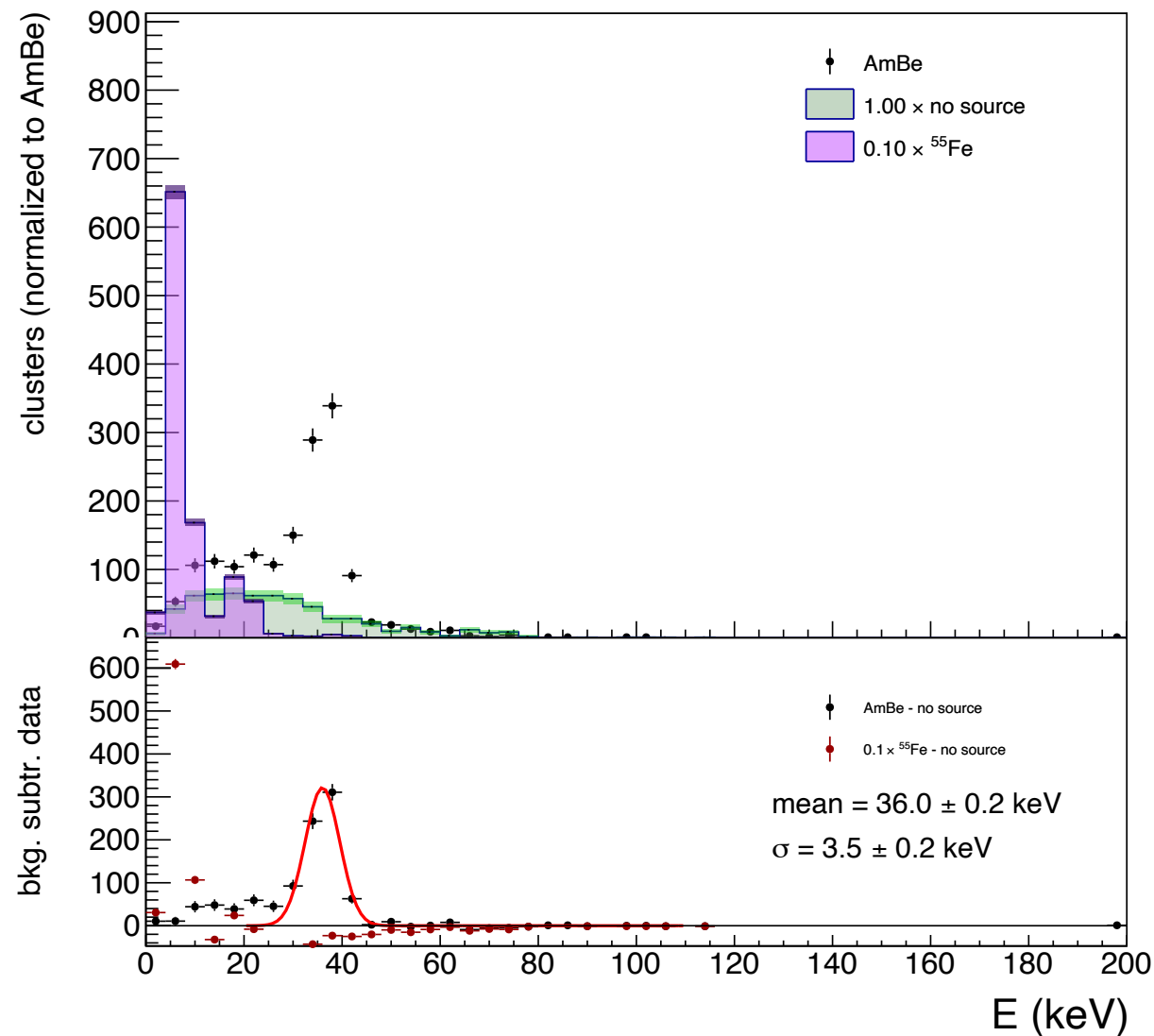


legend is wrong: AmBe = Cs

calibrated energy density

Energy spectrum

Expected 32 keV X-rays, Compton, plus the photoelectric peak at 661 keV



Cs-137 γ spectrum

