

HiDRa Analysis Updates

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Recap

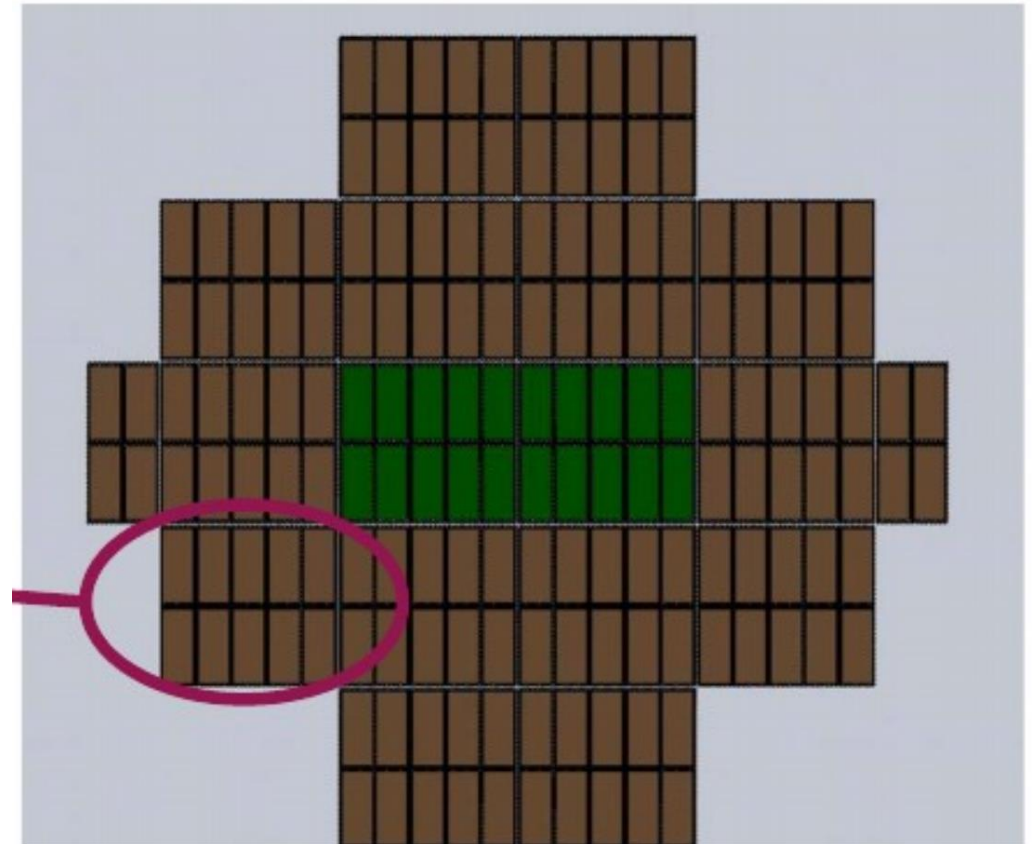
Rotation of 2.5° in both X and Y directions

1mm fiber diameter

Steel Absorber Material

Geometry Names:

- Std: 84 mini-modules
- NewGeo: 104 Mini-Modules
- FullContainment: 480 MM
- 80m: 80 Mini-Modules ← We focus on this



Pion Resolution

Chi value extracted from FullContainmentGeo by forcing perfect linearity at 40 GeV

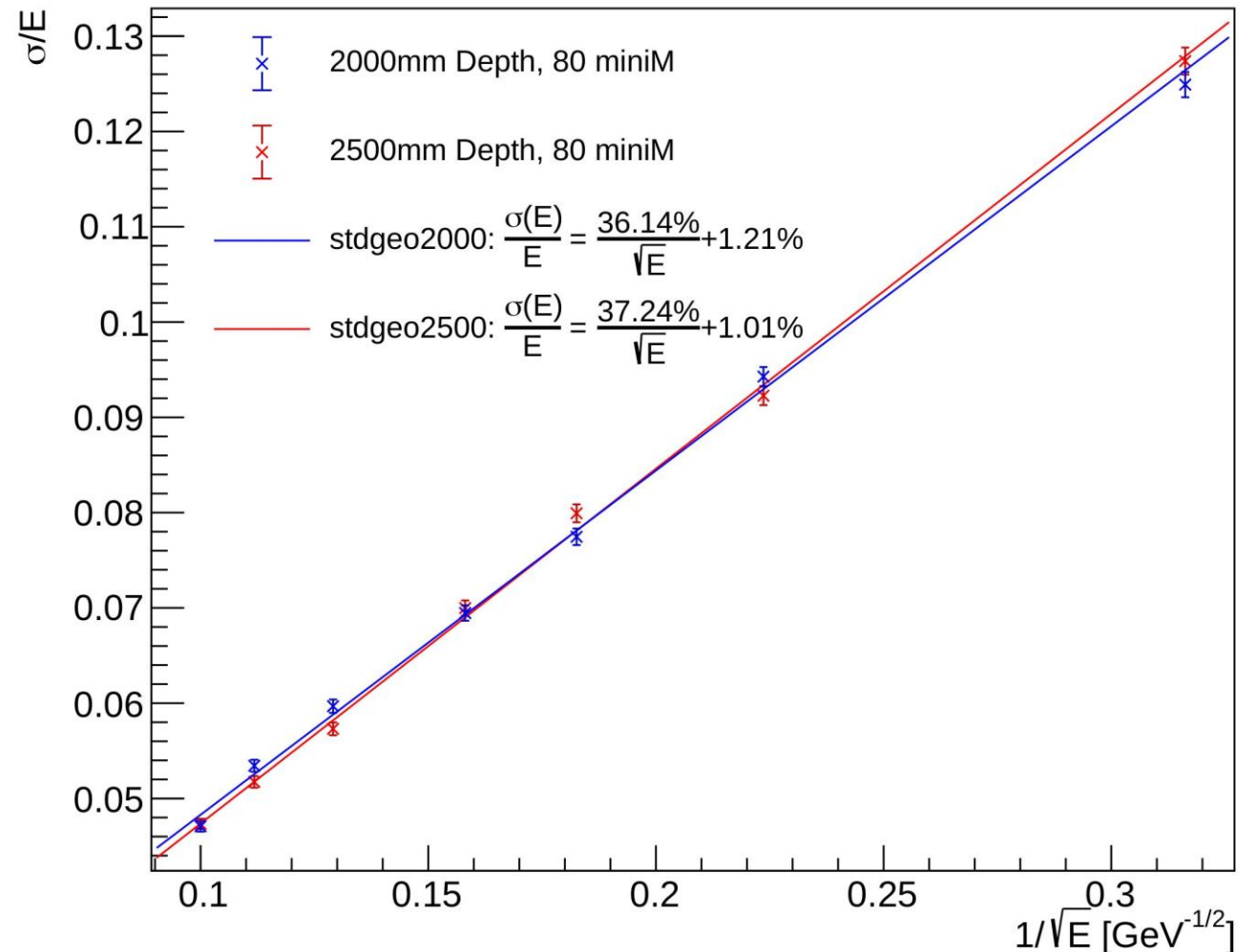
Resolution obtained from gaussian fit of reconstructed energy

Previously: fit from $E^{-1.5} \cdot \sigma$ to avoid contribution from low-reconstructed energy events

2000mm deep calo looks better

...what's going on?

Pion resolution in [10, 100] GeV Range



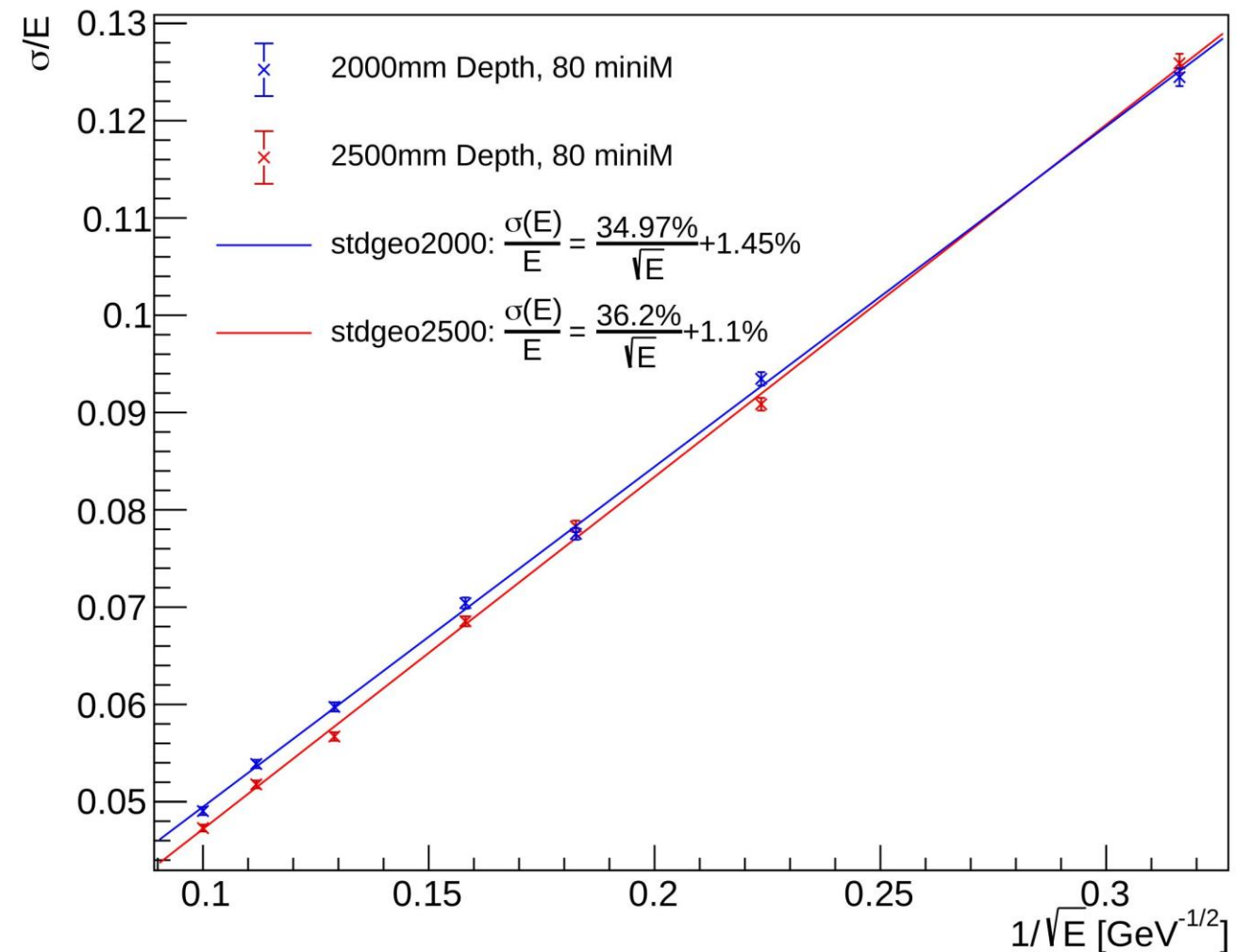
Pion Resolution

Extend fitted region from 0 to $10 \cdot E$
(e.g. infinity)

Low energy tails are now included

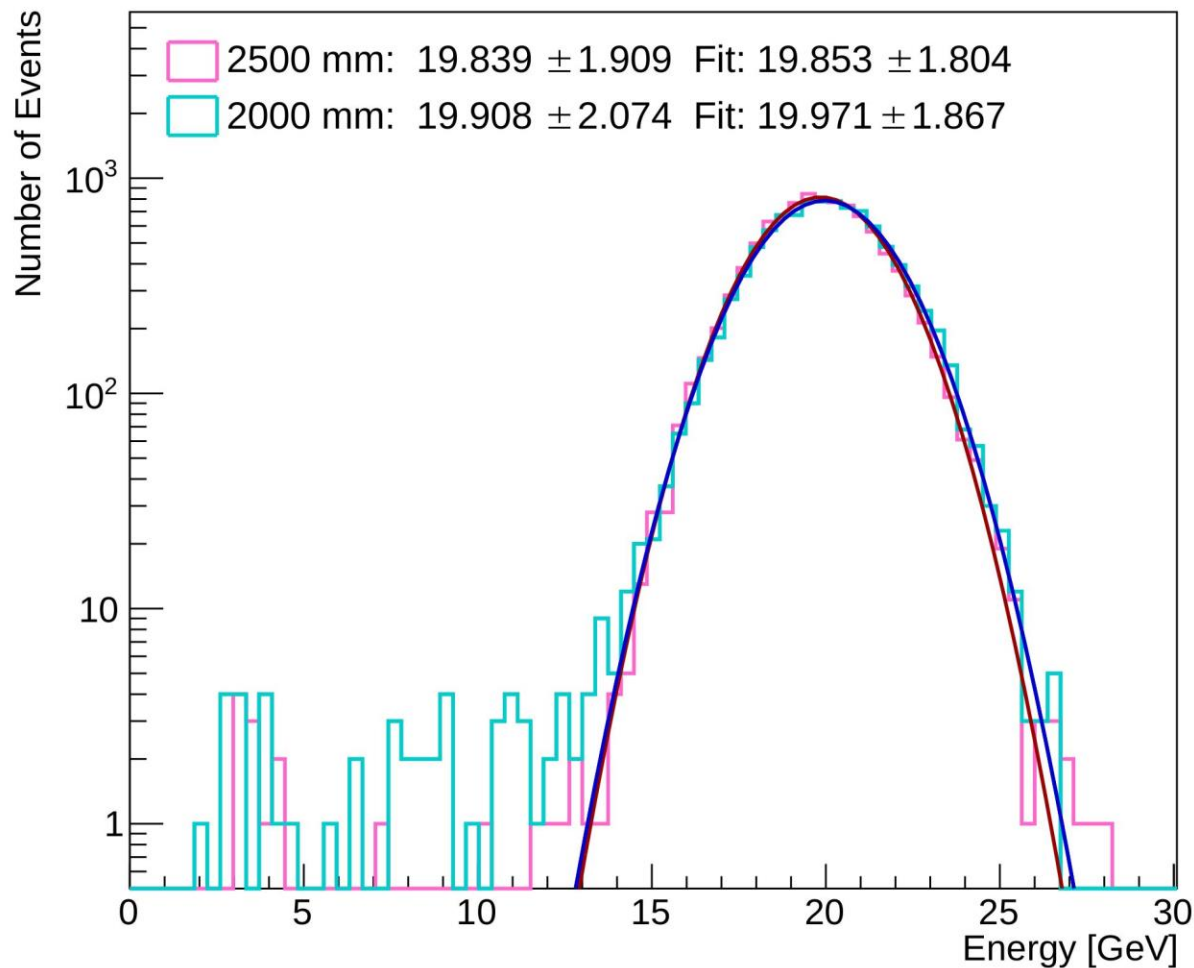
Let's check reconstructed energy
distribution

Pion resolution in [10, 100] GeV Range

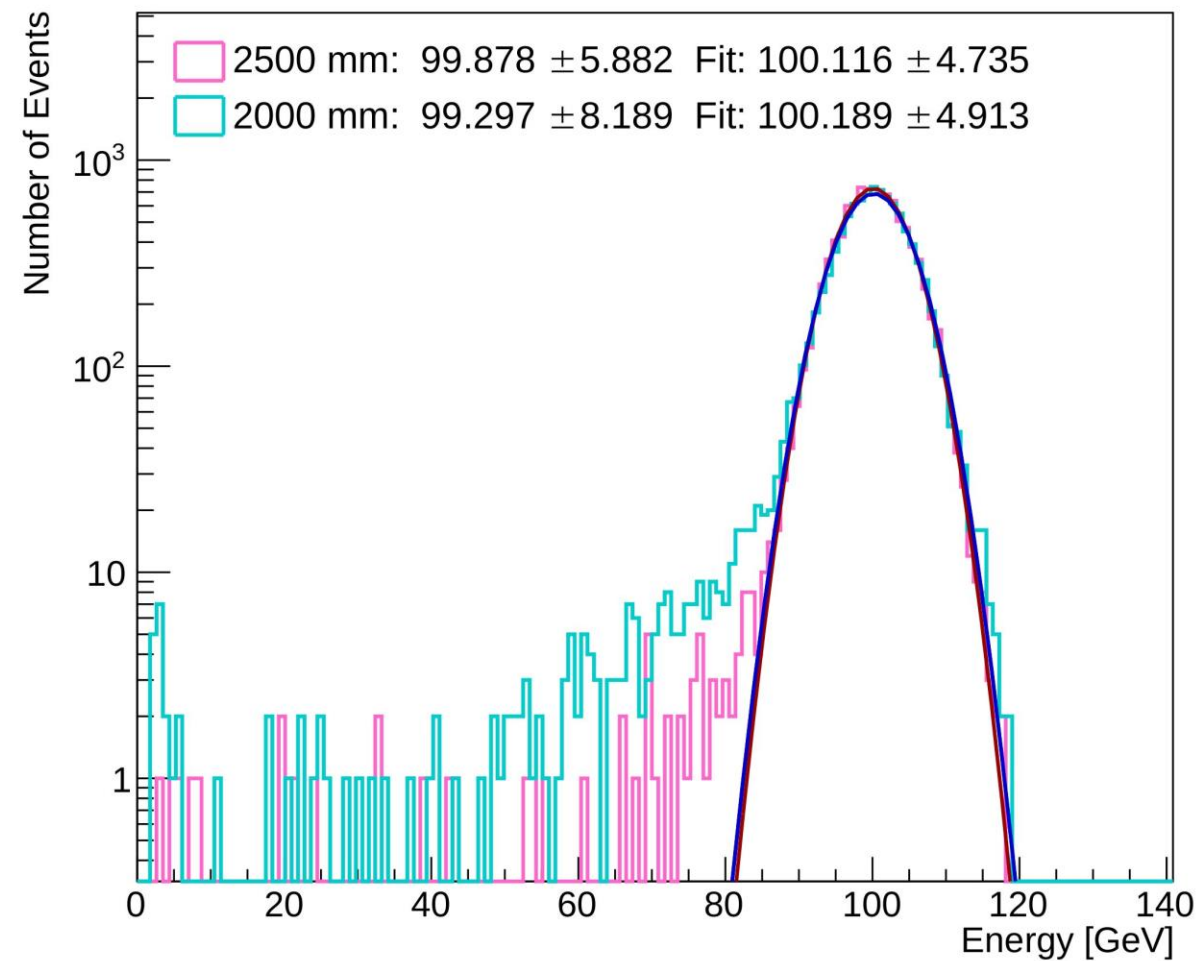


Reconstructed Energy

mesene



mesene



The fit is not heavily influenced by the low tail \longrightarrow is it a reliable parameter?

Goodness of Fit

