

HyCal Trigger Efficiency

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- ▶ Formula:

$$\epsilon = \frac{N_{LeadGlassSum} + N_{TotalSum}}{N_{LeadGlassSum} + N_{TotalSum} + N_{Tagger}}$$

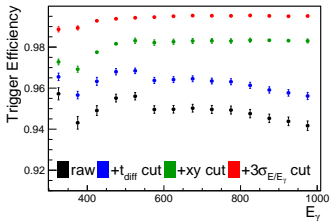
- ▶ Basic Cuts to remove accidentals:

- ▶ $|t_{trigger} - t_{tagger}| < 40ns$ (cf Tagger Spectra 10/28/16)
- ▶ $|x_{cluster} - x_{transp}| < \Delta x_{max}$ (loose cut depending on run)
- ▶ $|E_{cluster}/E_{\gamma} - 1| < n \cdot \sigma_{E_{cl}/E_{\gamma}}$

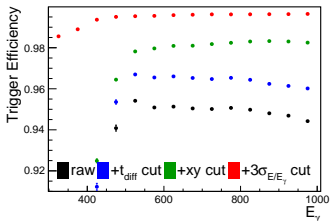
Effect of basic cuts on the efficiency

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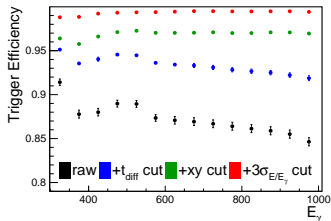


PbWO₄

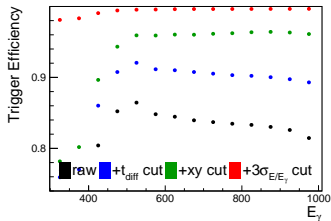


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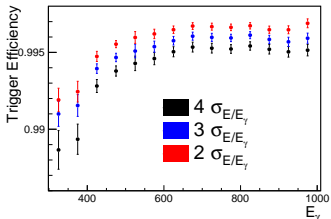


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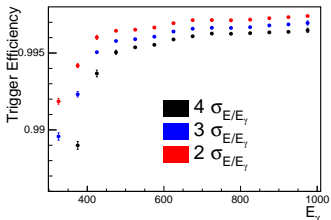


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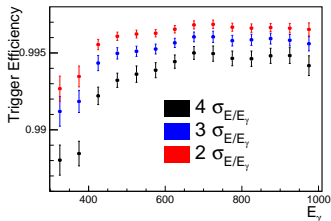


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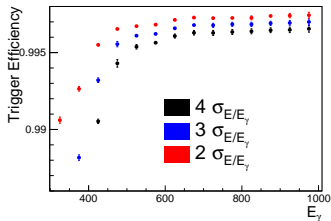


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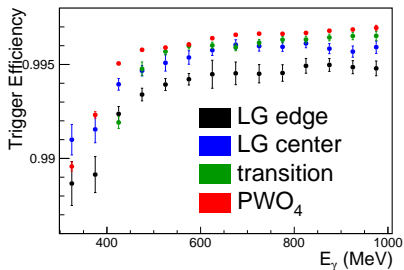
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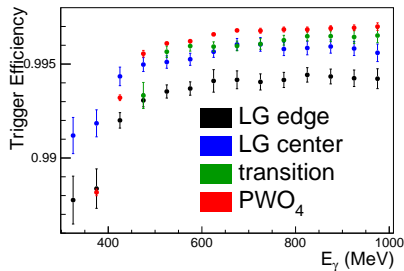
PbWO₄



primex



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- ▶ efficiency $> 99.5\%$ for $E_\gamma > 500\text{MeV}$
- ▶ Need a better study at low E_γ for Møller events (extrapolation)