Status Report

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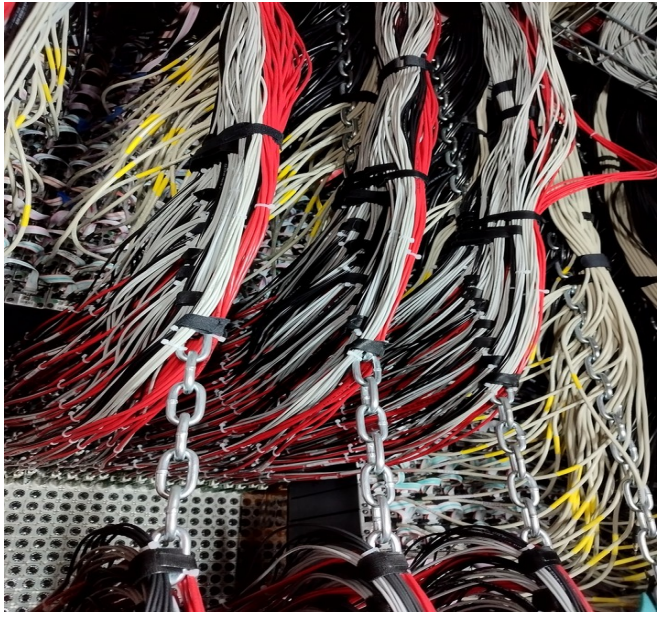
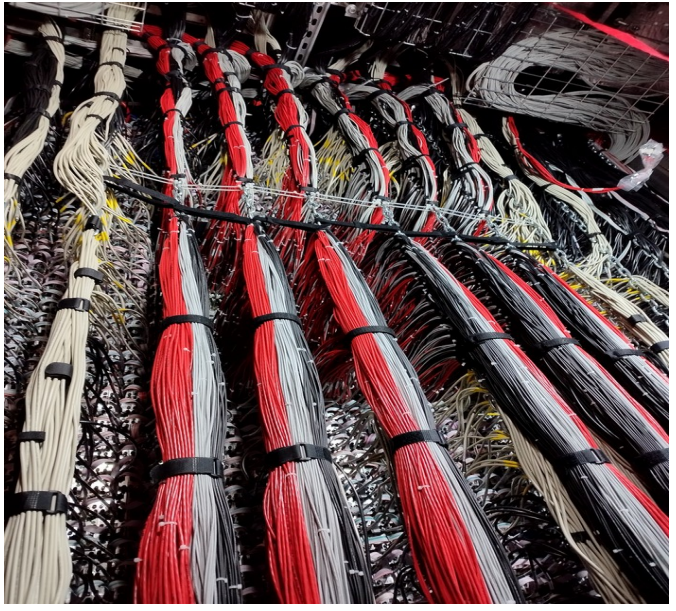
Hardware

- Testing of PMT dividers
- Stretching of cables

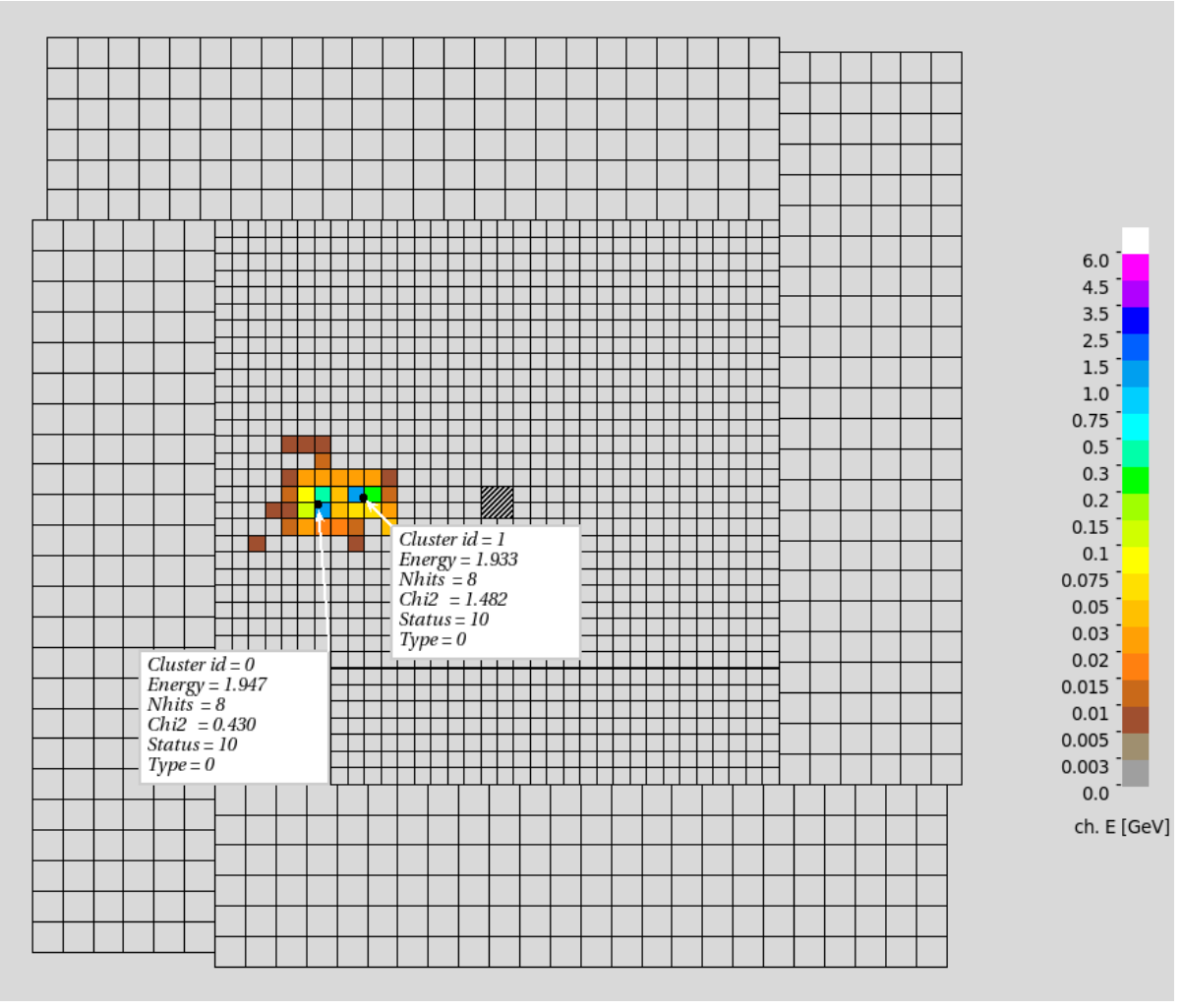




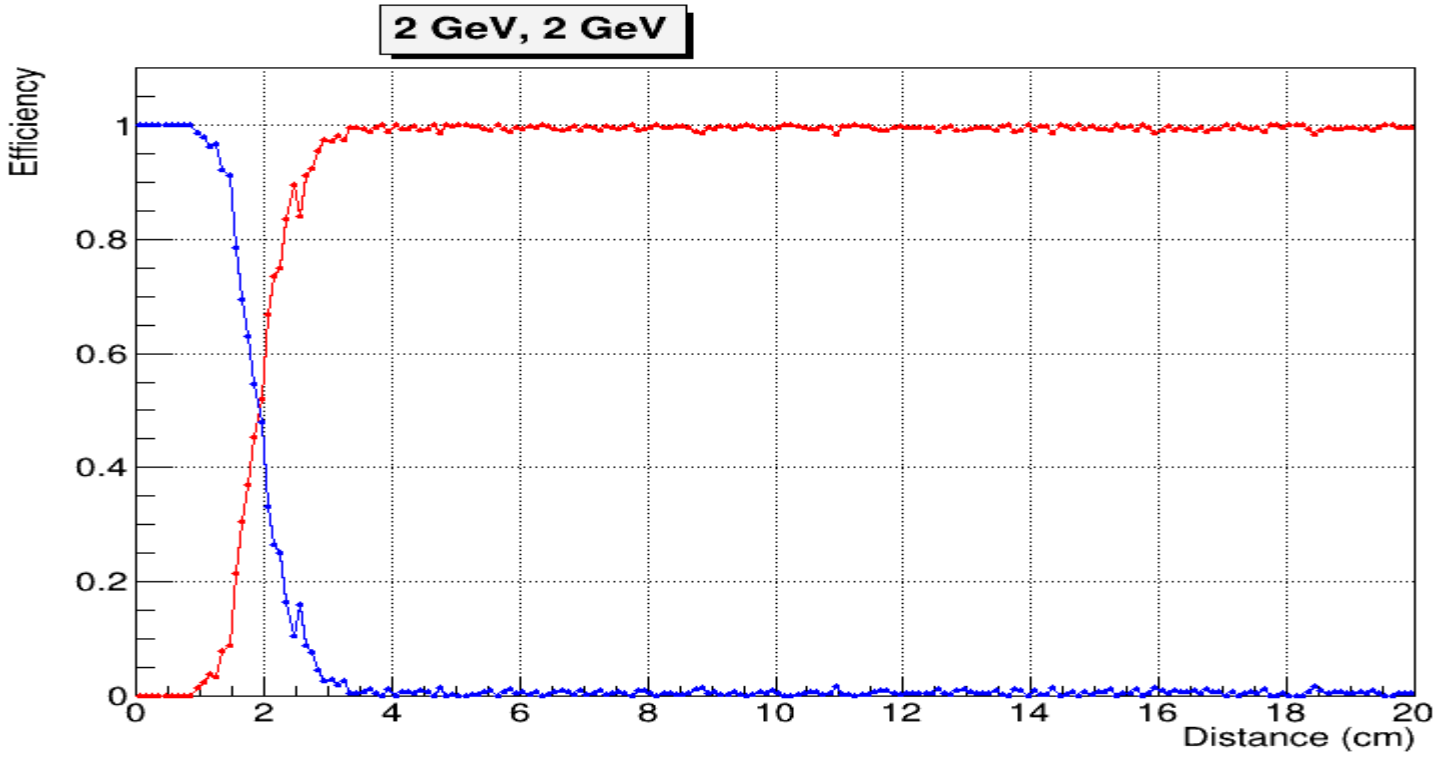
Software

Island Algorithm

Island Algorithm



Two 2GeV gammas



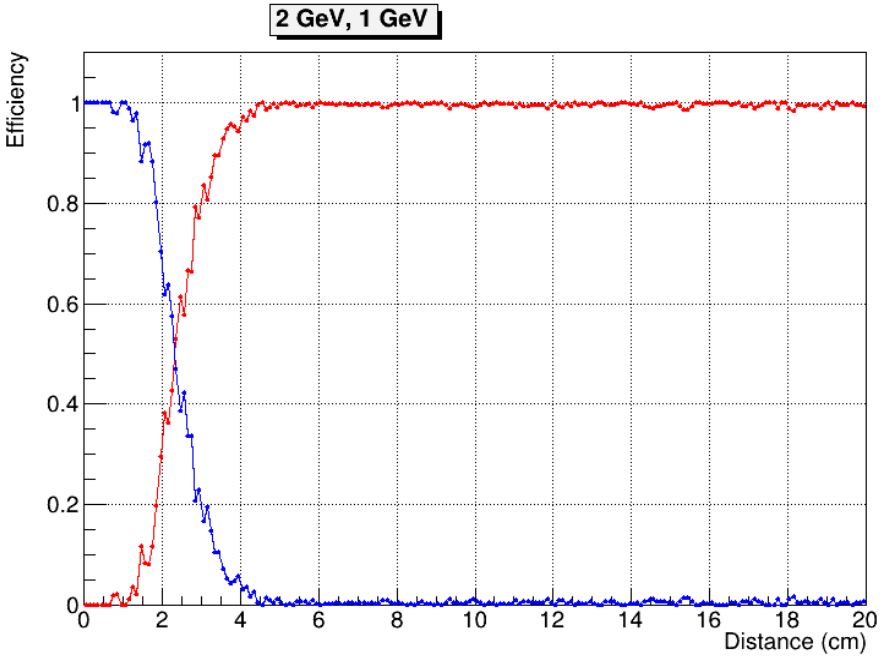
- Events processed 100000

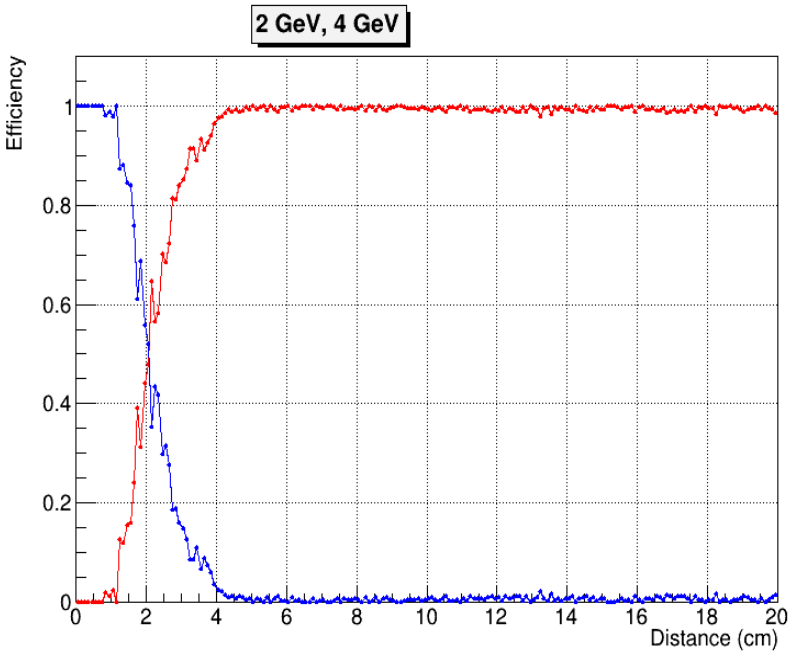
3 combinations

- (2 GeV, 1GeV)
- (2 GeV, 2GeV)
- (2 GeV, 4GeV)

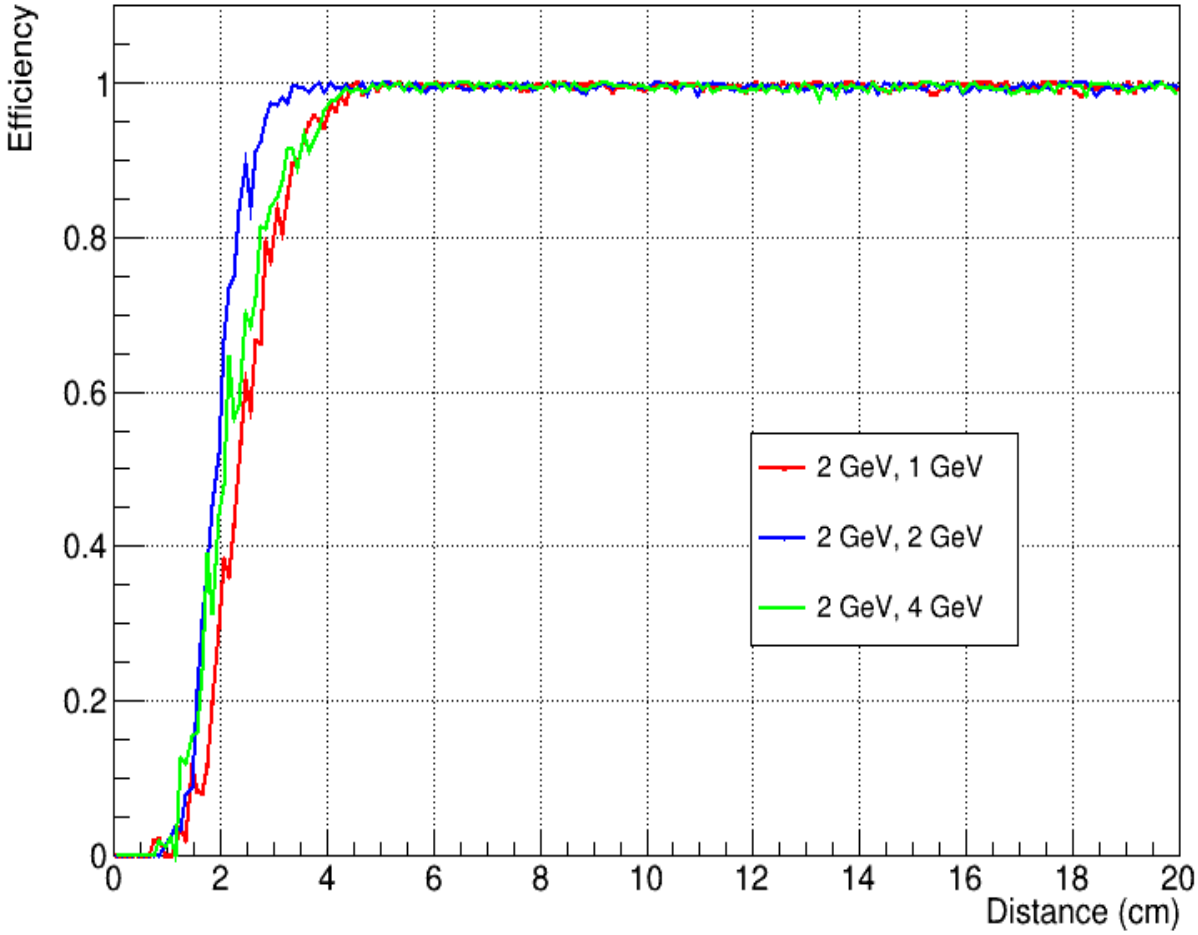
- Red → The efficiency of two nearby gamma separation
- Blue →The probability to find only one gamma

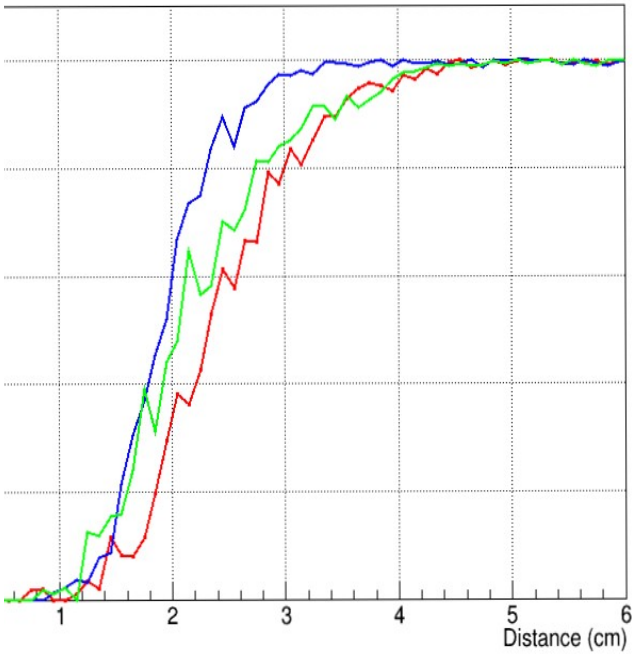
Different gamma energies.





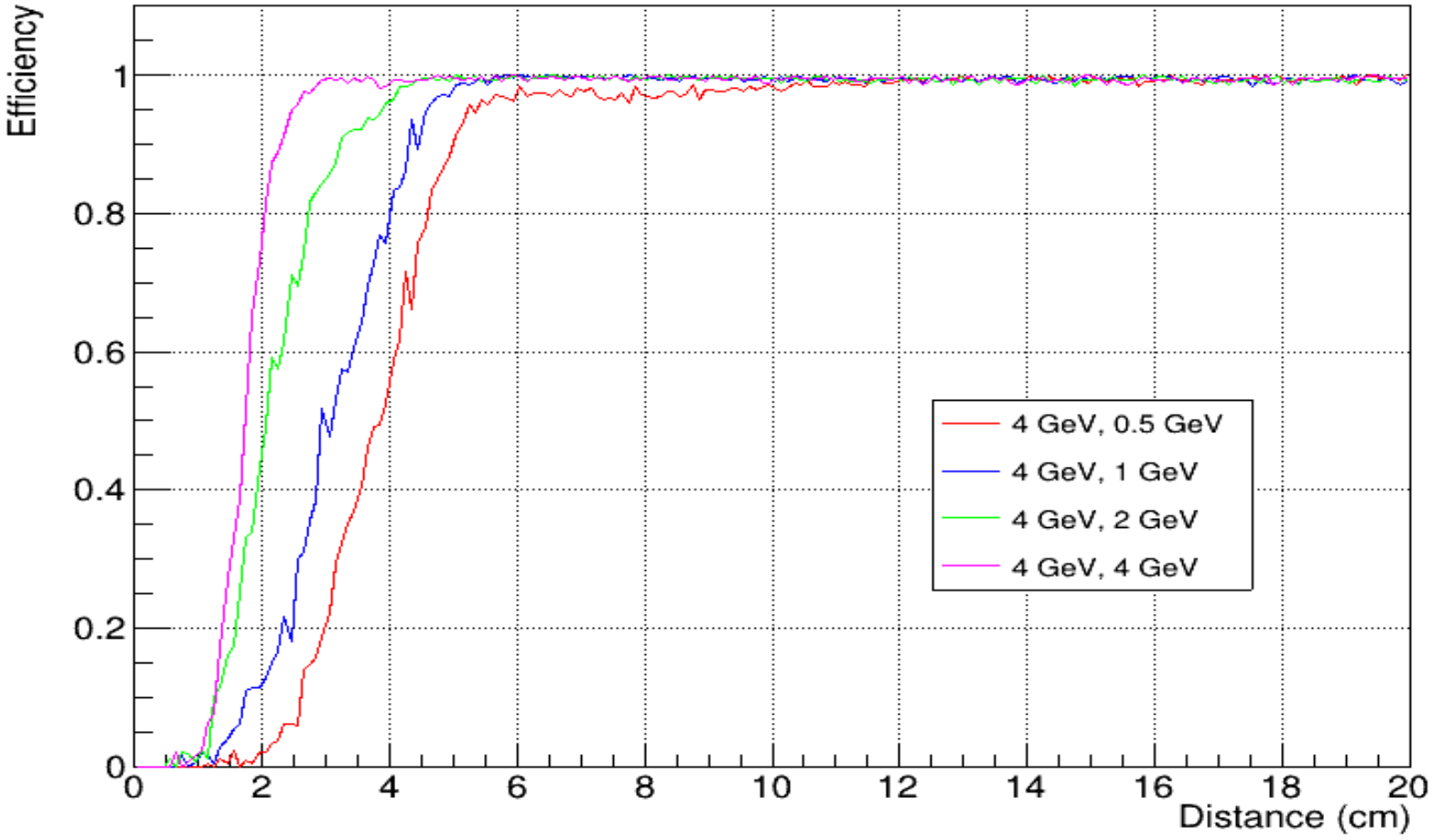
- Red → The efficiency of two nearby gamma separation
- Blue → The probability to find only one gamma





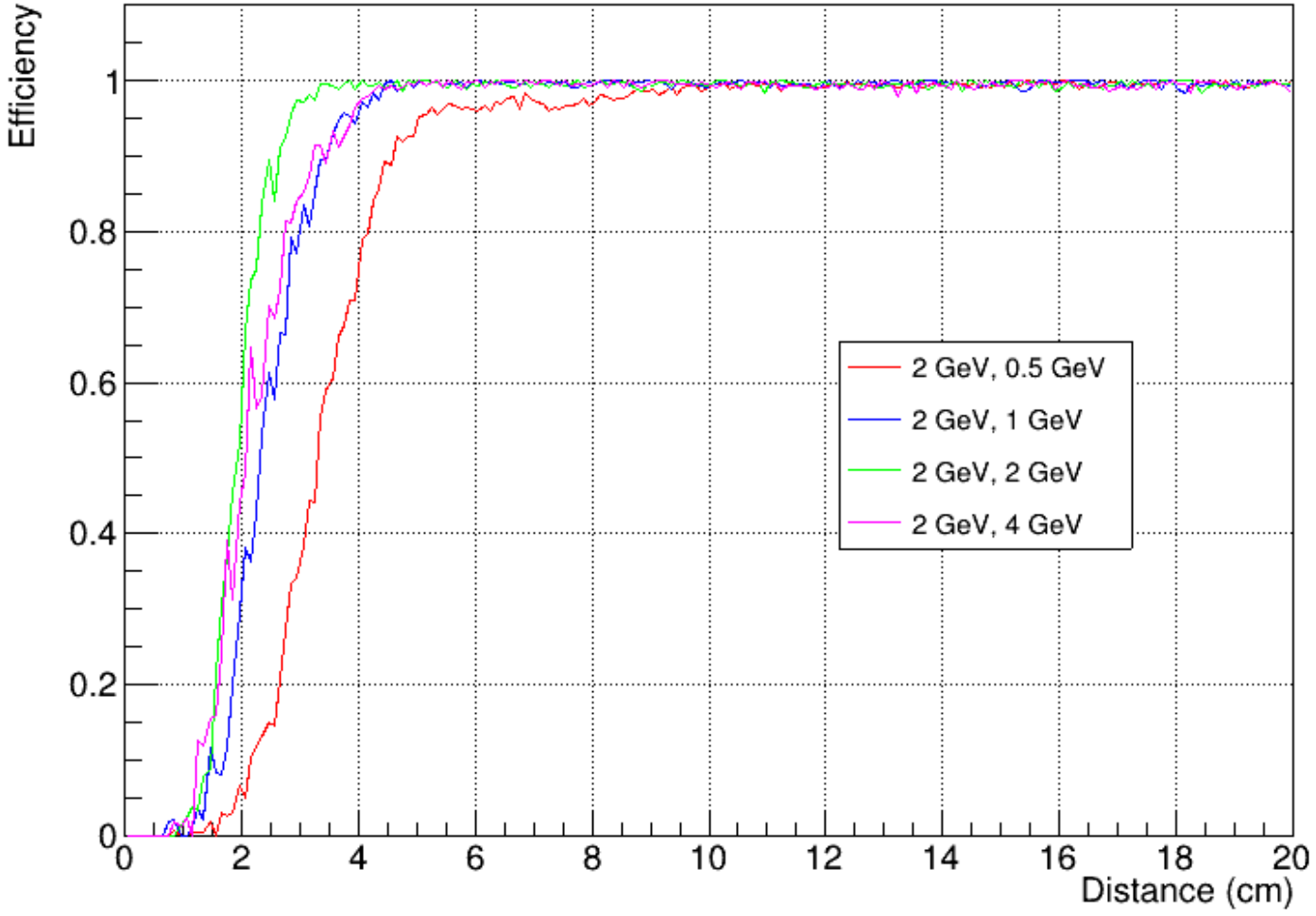
- Separation efficiency depends on the energy of each gamma

- **4 GeV Gamma & 0.5, 1, 2, 4 GeV Gamma**



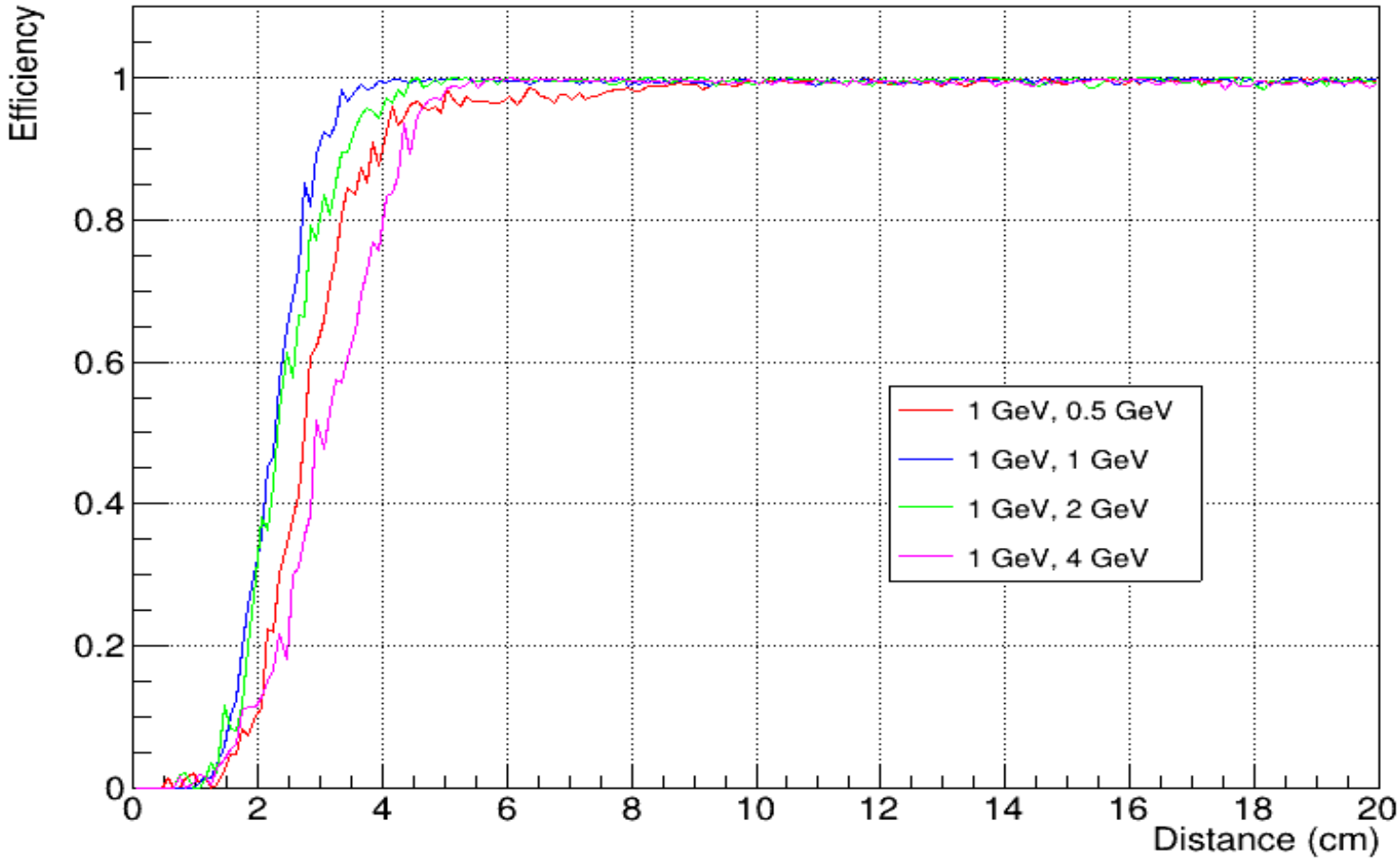
- **Separation efficiency is high for 4 GeV, 4 GeV clusters**

- **2 GeV Gamma & 0.5, 1, 2, 4 GeV Gamma**



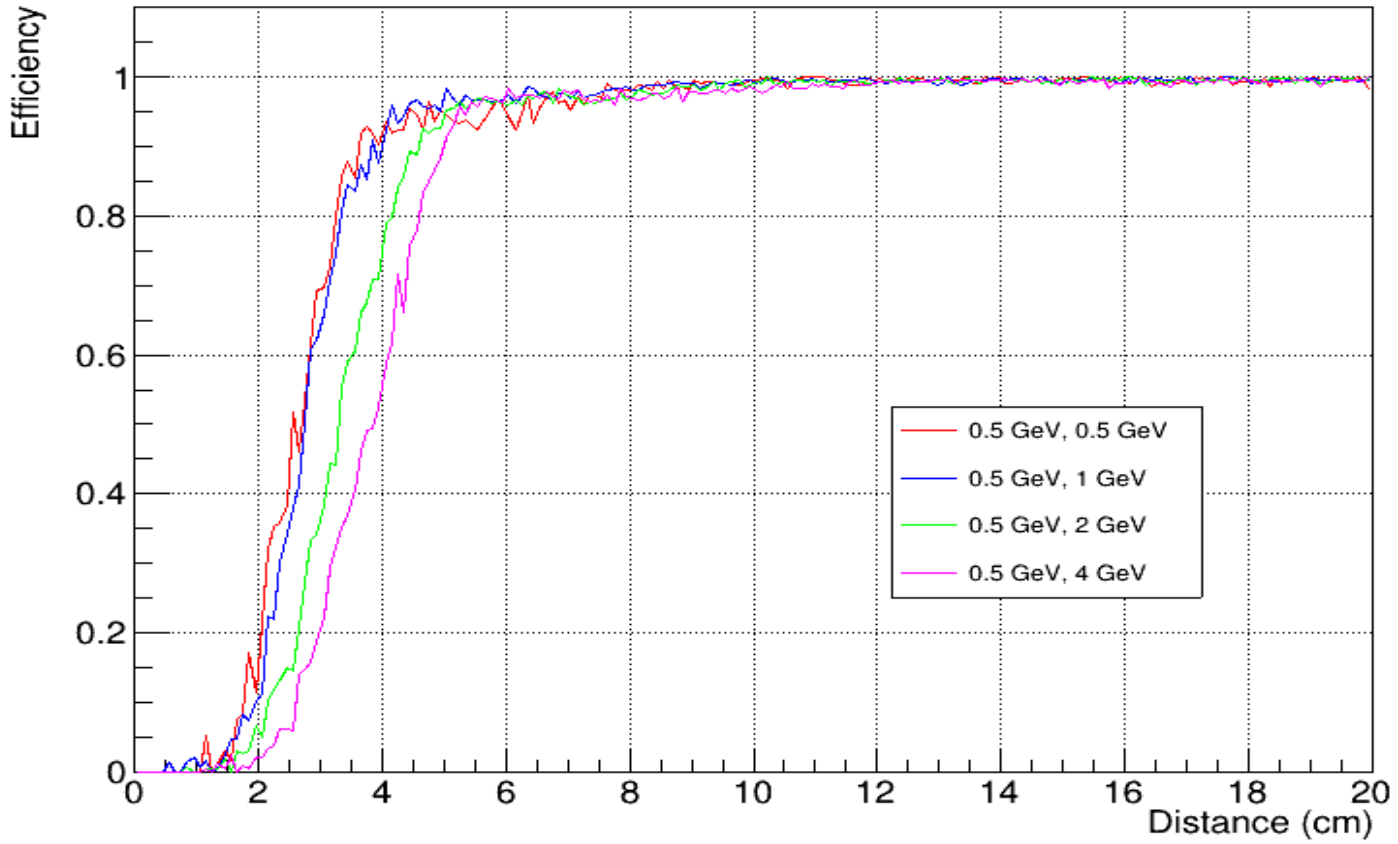
- **Separation efficiency is high for 2 GeV, 2 GeV clusters**

- **1 GeV Gamma & 0.5, 1, 2, 4 GeV Gamma**



- **Separation efficiency is high for 1 GeV, 1 GeV clusters**

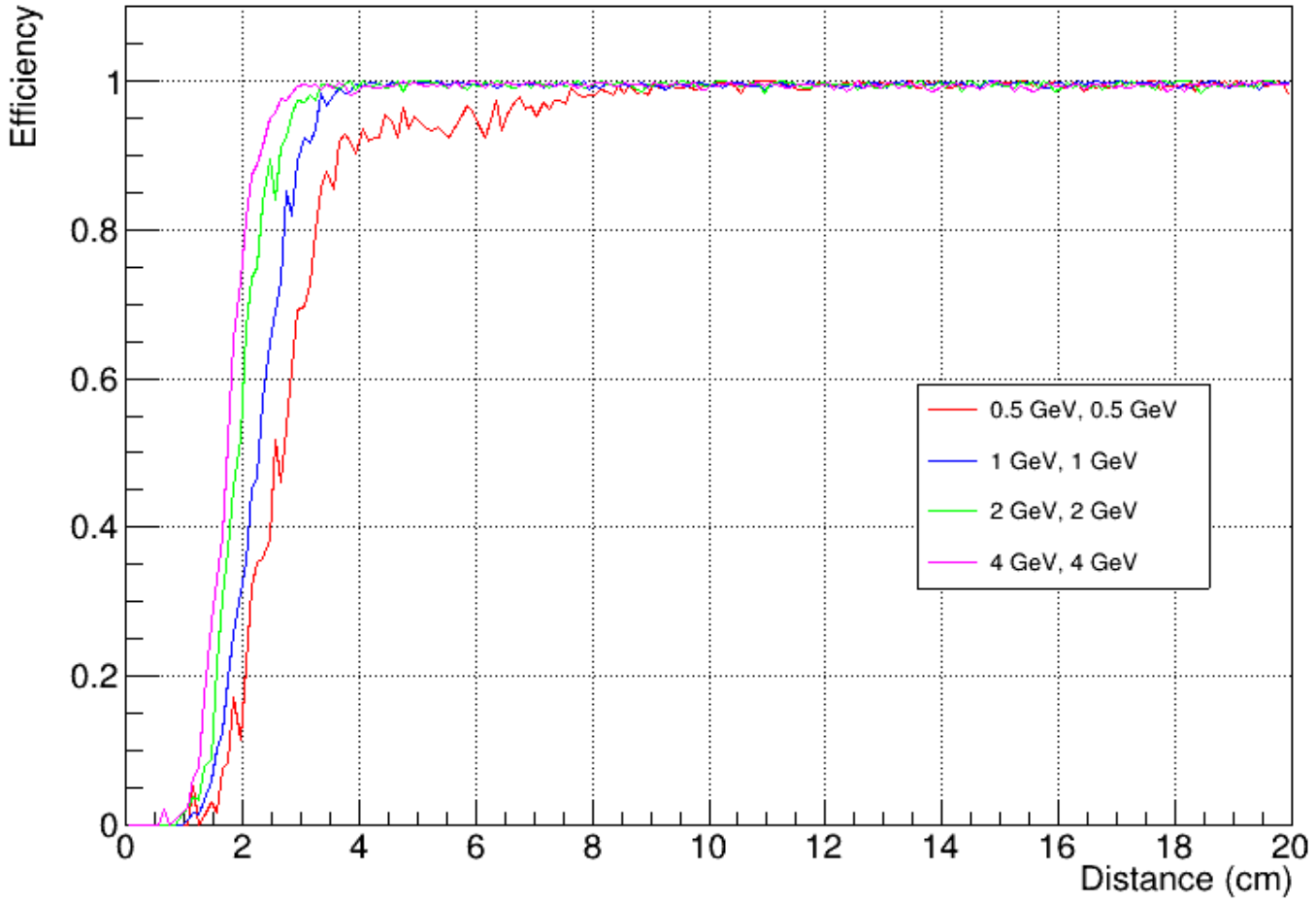
- **0.5 GeV Gamma & 0.5, 1, 2, 4 GeV Gamma**



- **Data shows negligible difference between (0.5, 0.5) GeV and (0.5, 1) GeV clusters.**

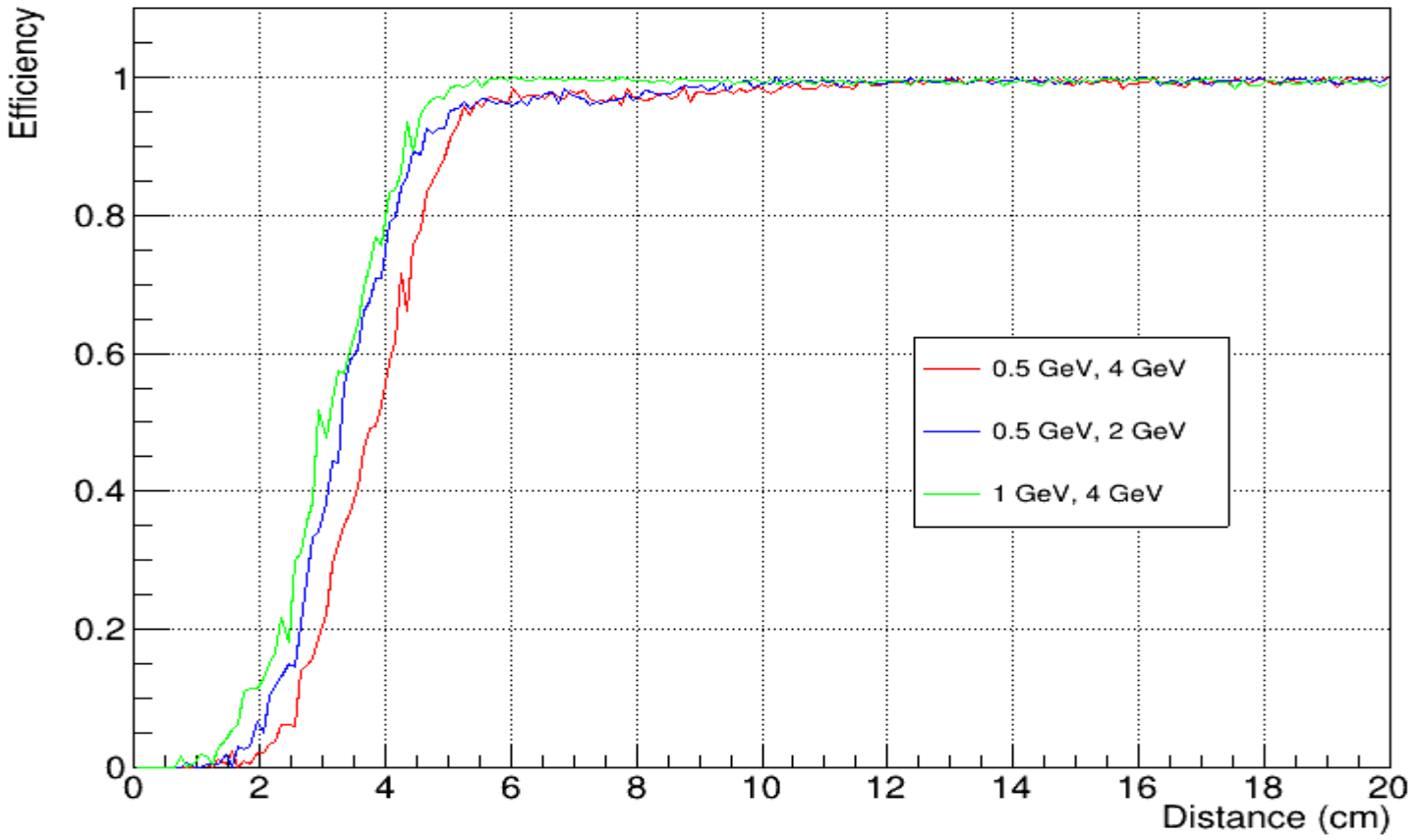
Symmetric

$E_1 = E_2$



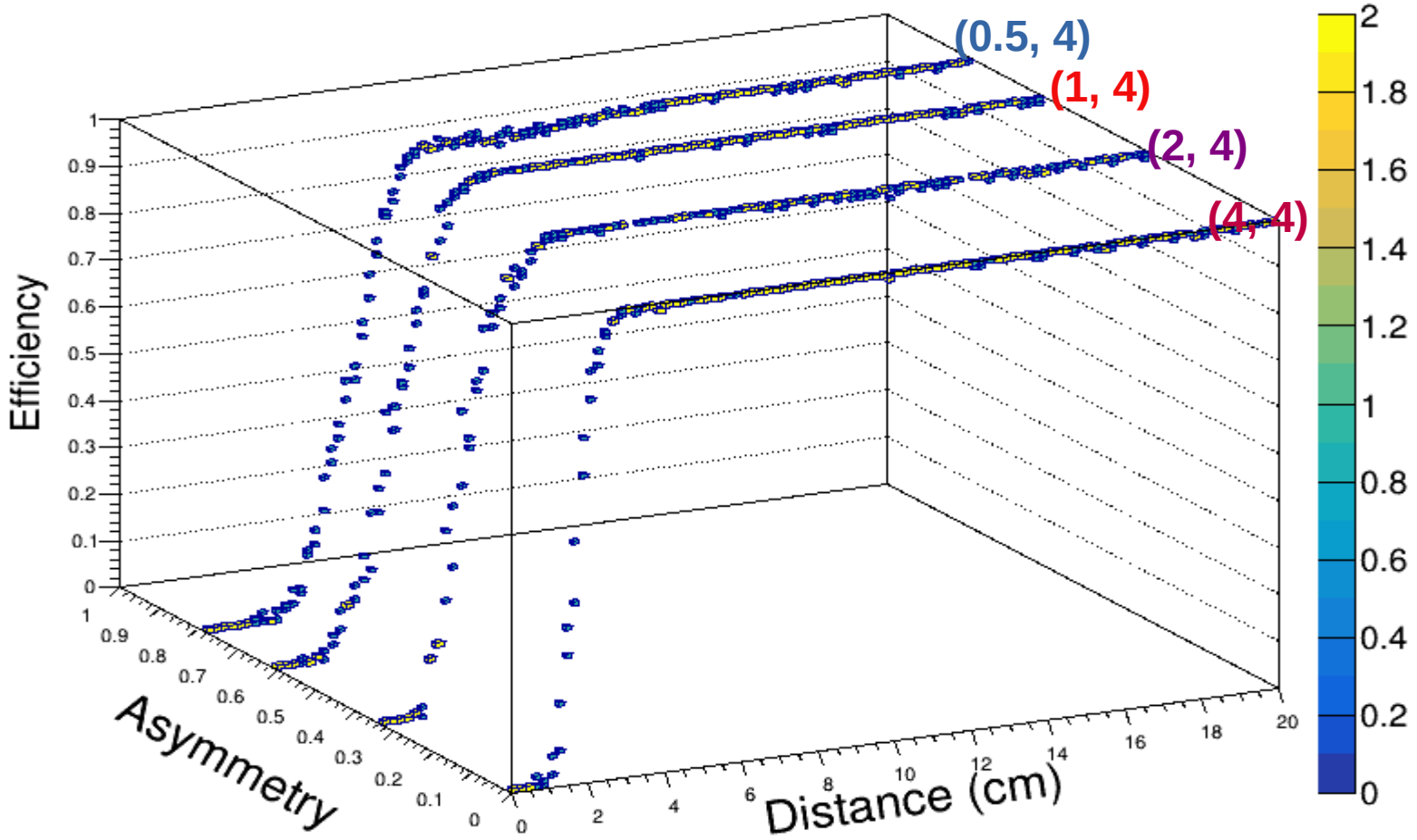
- **Separation efficiency is highest for 4 GeV, 4 GeV clusters and lowest for 0.5 GeV, 0.5 GeV clusters.**

Asymmetric



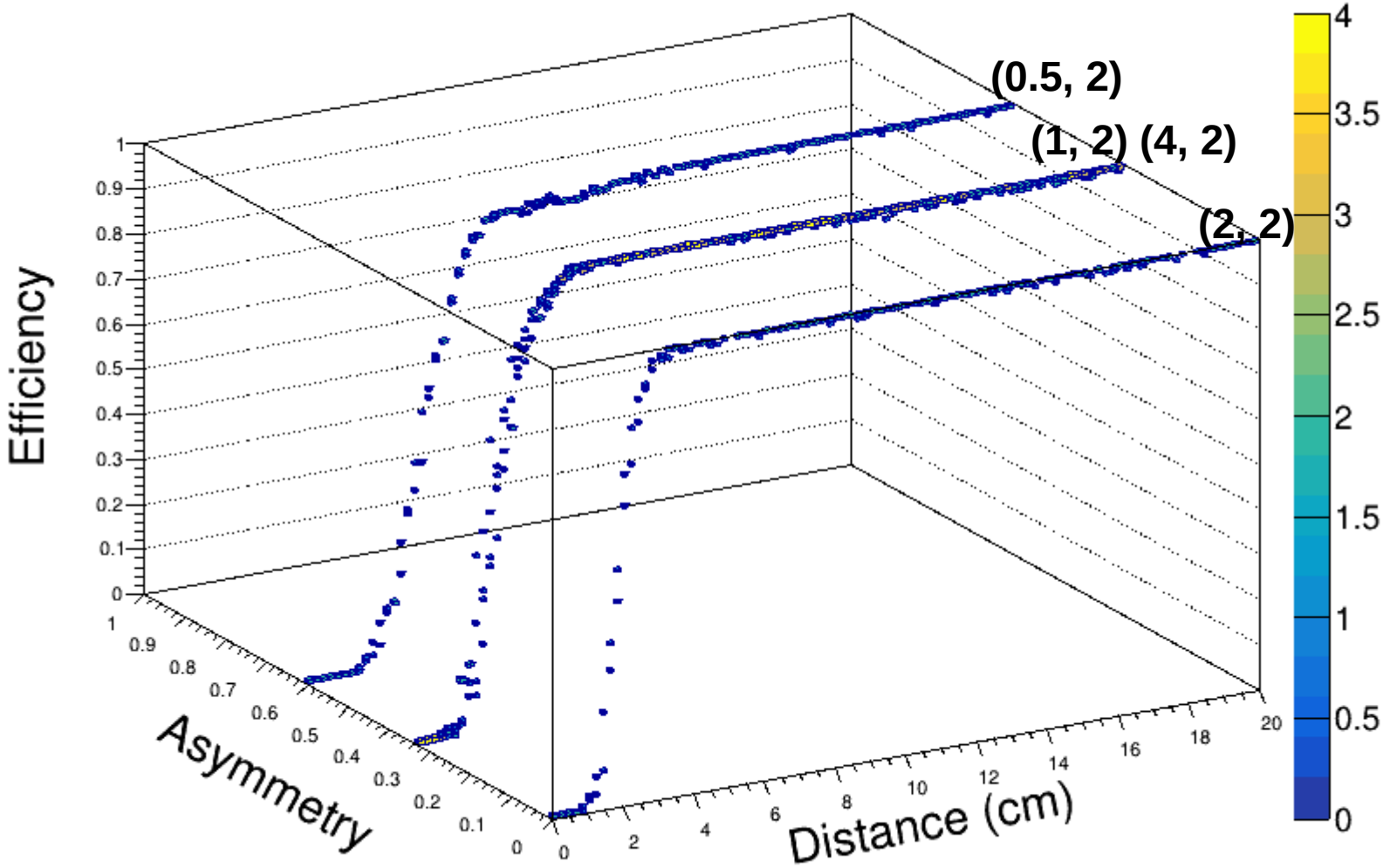
- **The efficiency of two gamma separation depends on the decay asymmetry**

Asymmetry = ($|E_1 - E_2|$) / (E_1+E_2)



What will be the nature separation efficiency for clusters with same asymmetry but with different gamma energies?

Different gamma energy with same asymmetry



- **Minimal difference in efficiency observed for clusters with same asymmetry**