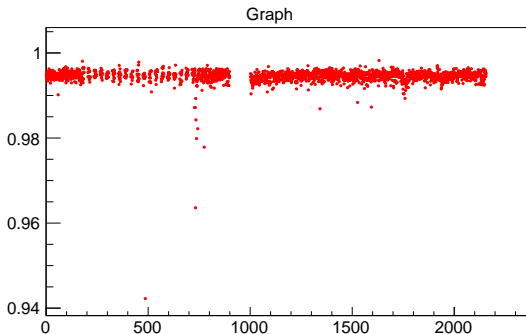


Trigger Efficiency in Simulation

Maxime Levillain

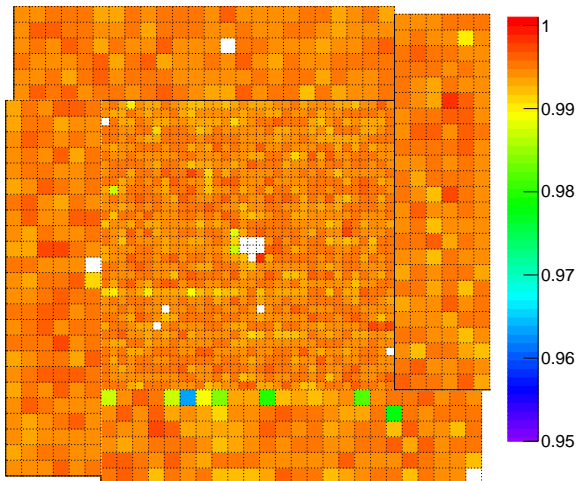
September 7, 2017



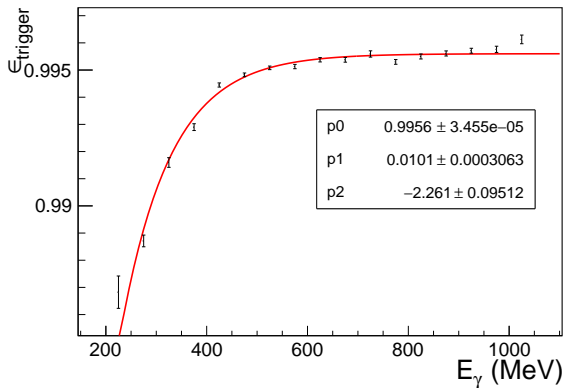


- ▶ Uniform trigger efficiency
- ▶ Only few modules with lower efficiency → might be important in simulation

Module Trigger Efficiency

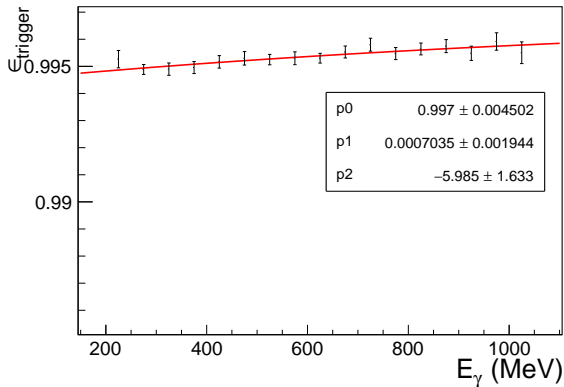


Trigger Efficiency vs E (PWO)



$$\epsilon_{trigger}(E) \approx 0.996 \cdot (1 - e^{0.01 \cdot E - 2.3})$$

Trigger Efficiency vs E (LG)



$$\epsilon_{trigger}(E) \approx 0.997 \cdot (1 - e^{0.001 \cdot E - 6})$$

- ▶ Easy for one cluster event
- ▶ Proposition for several cluster events:

$$\epsilon_{trigger} = \left(\sum_{cluster} \epsilon_{cluster\ id} * \frac{E_{cluster}}{E_{tot}} \right) \cdot (\text{energy dependent part})$$

- ▶ Energy dependent part according to the cluster of maximum energy (PWO or transition or LG) and using E_{tot}