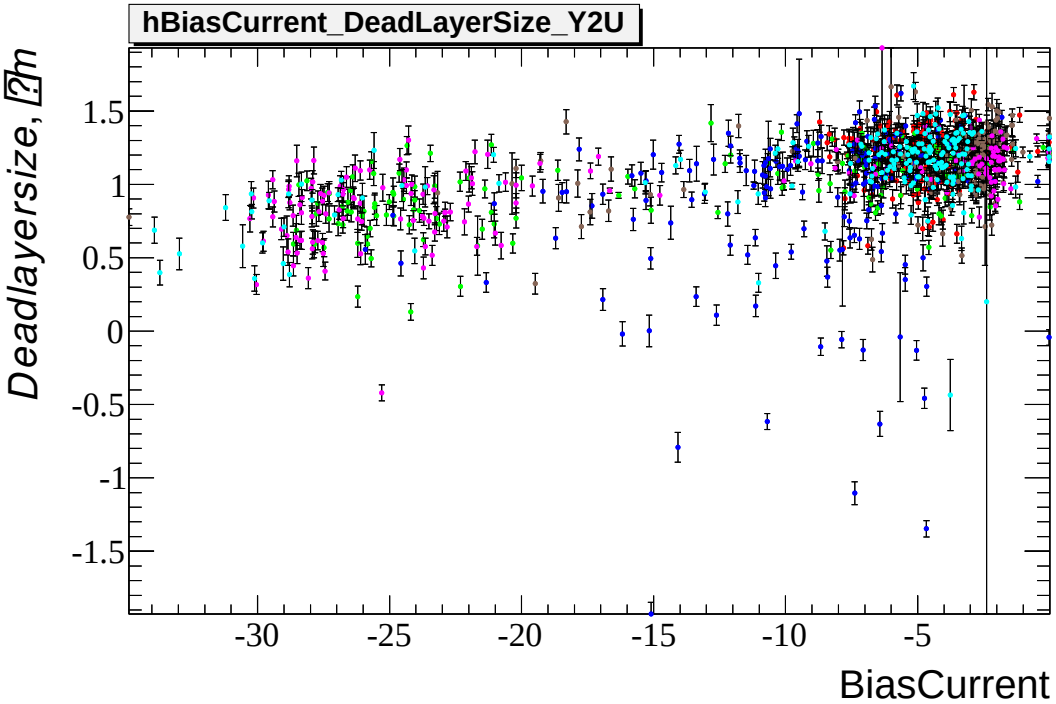
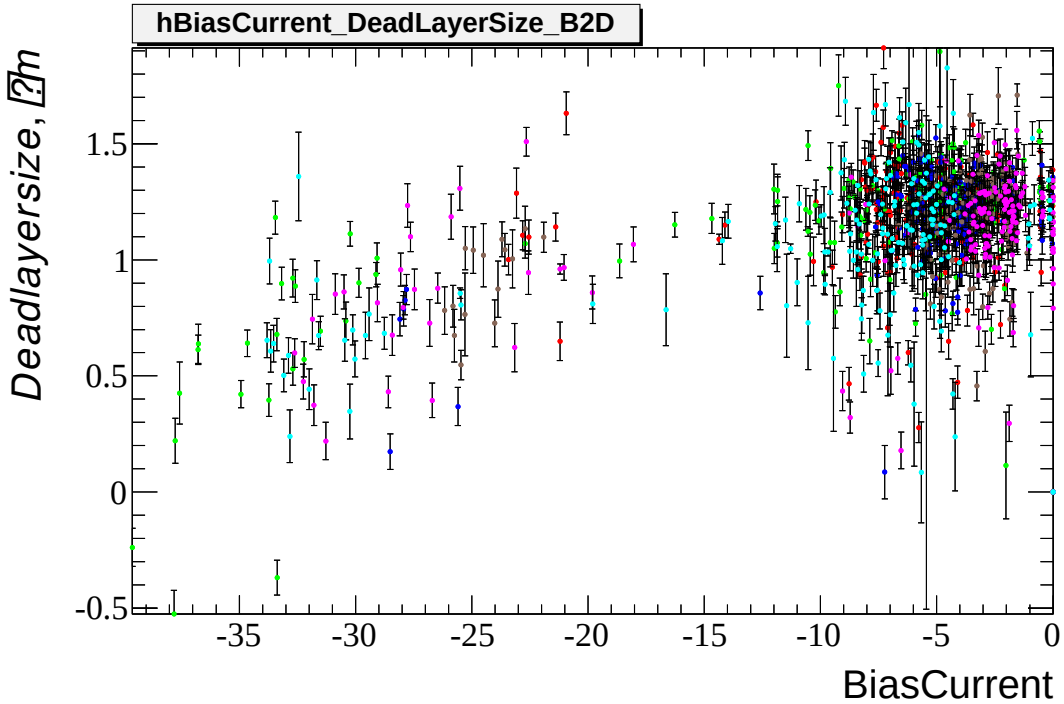
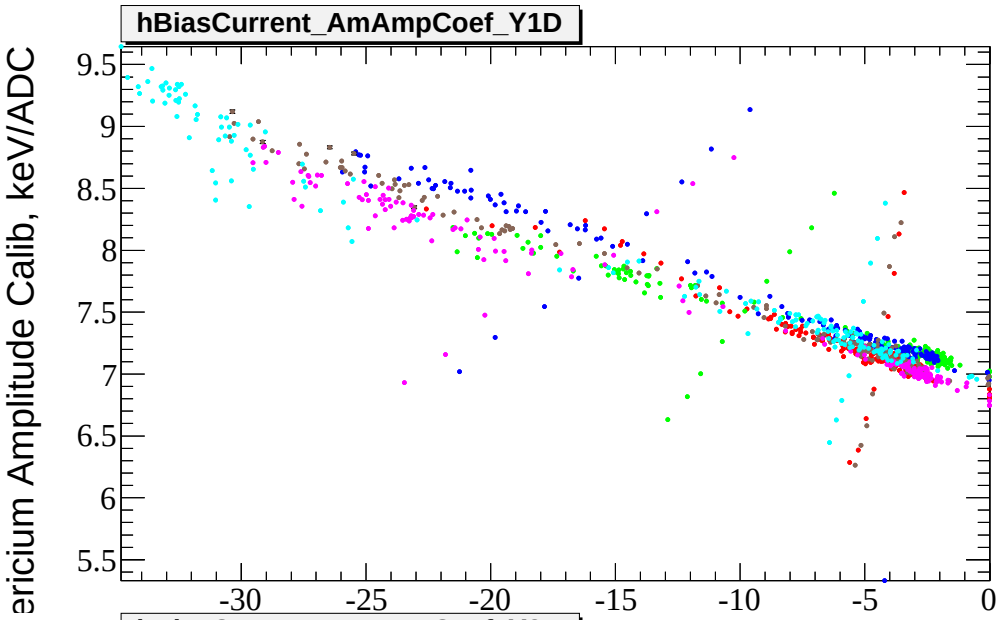
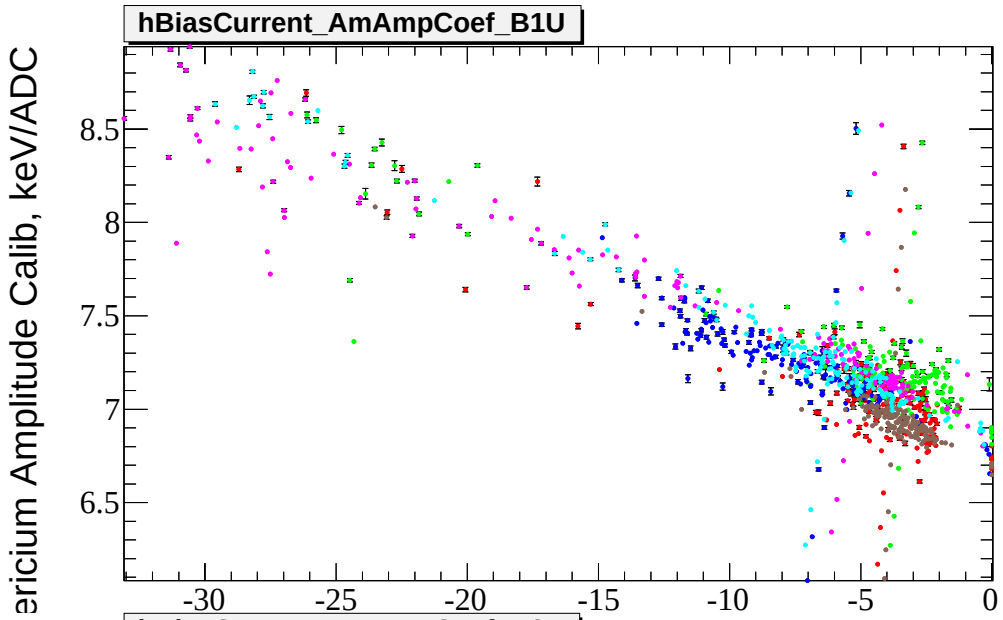
Corellations overview

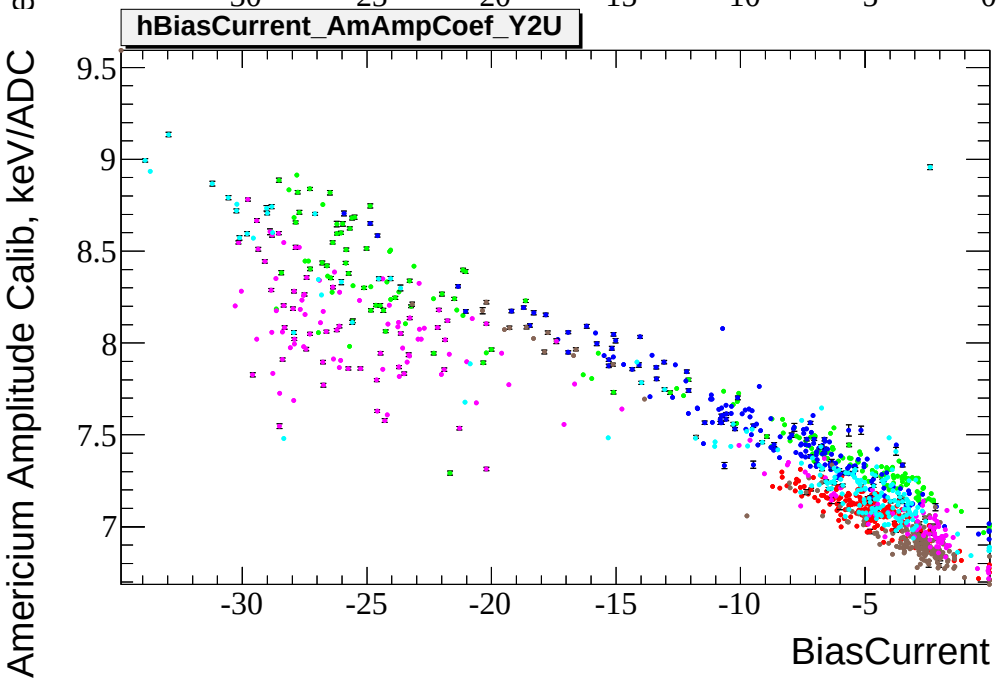


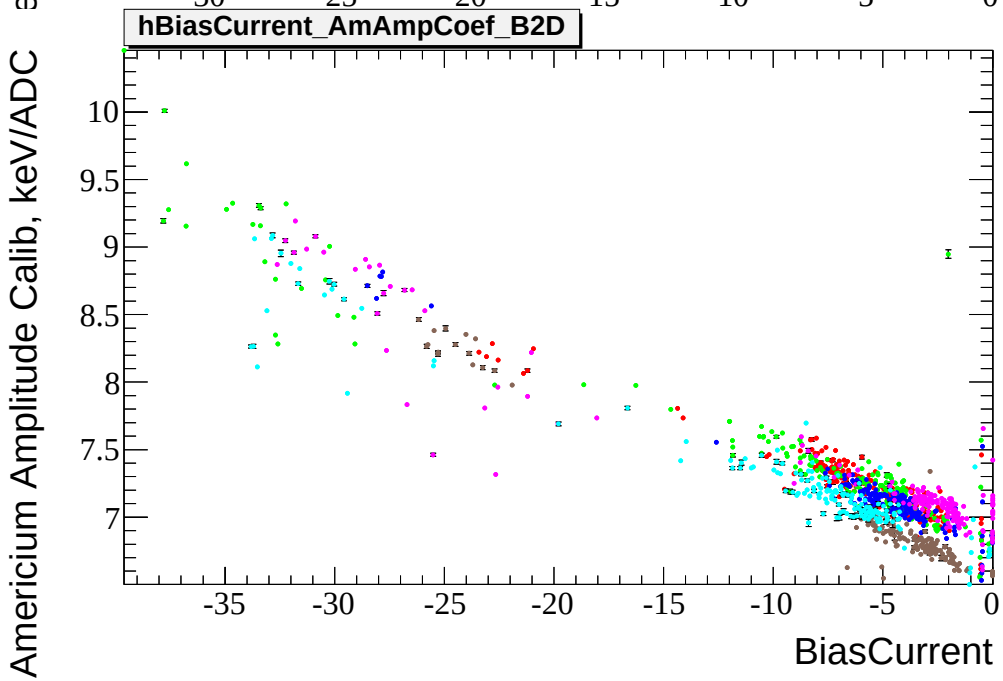


Corellations Blue2

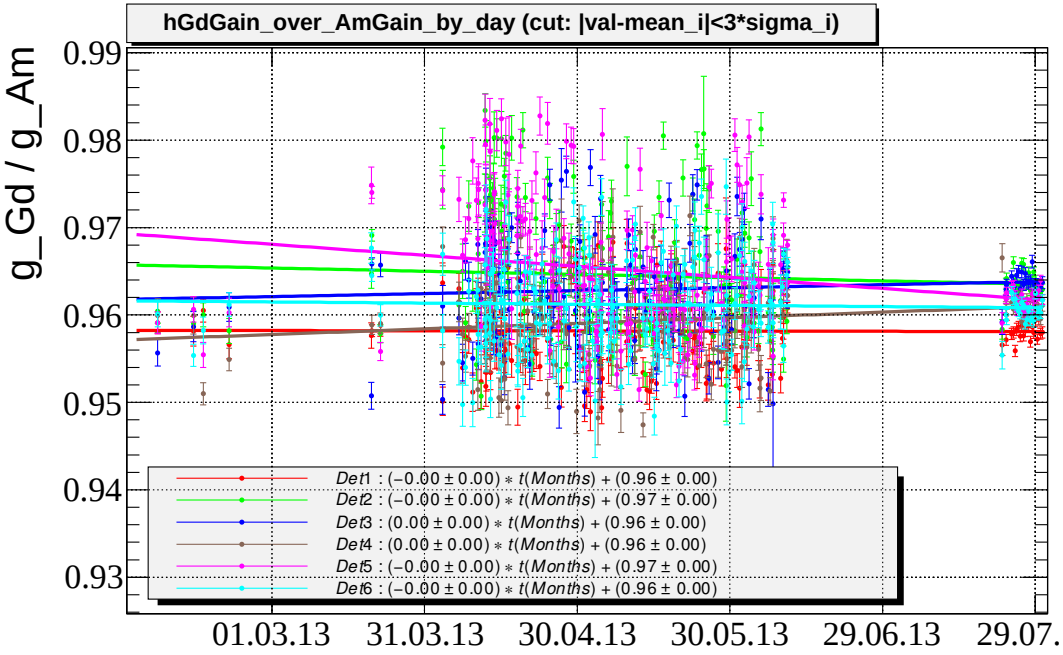


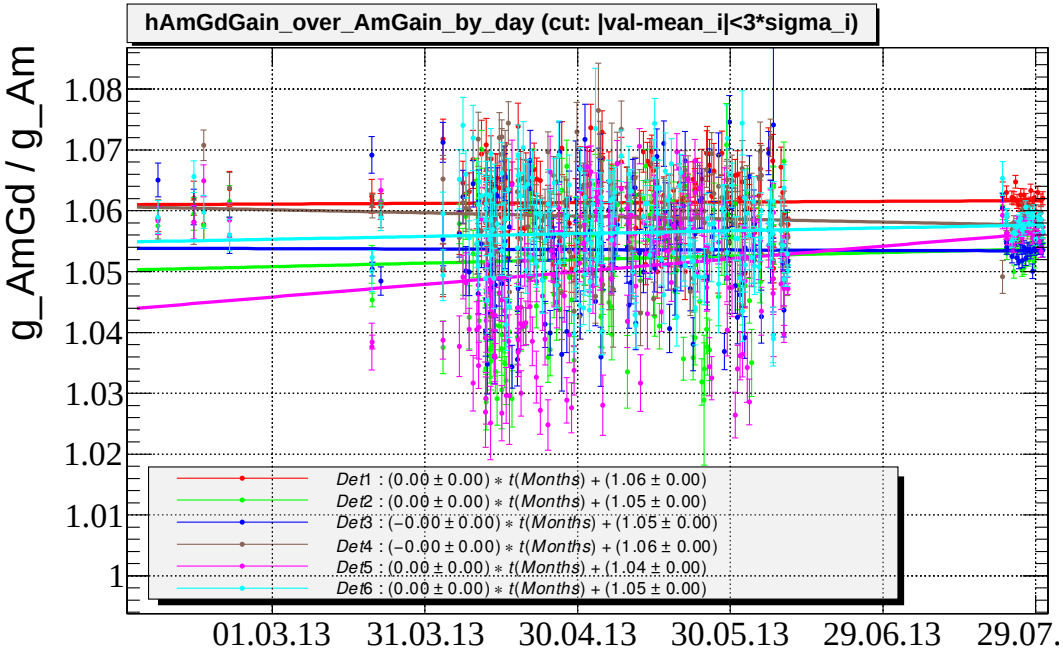




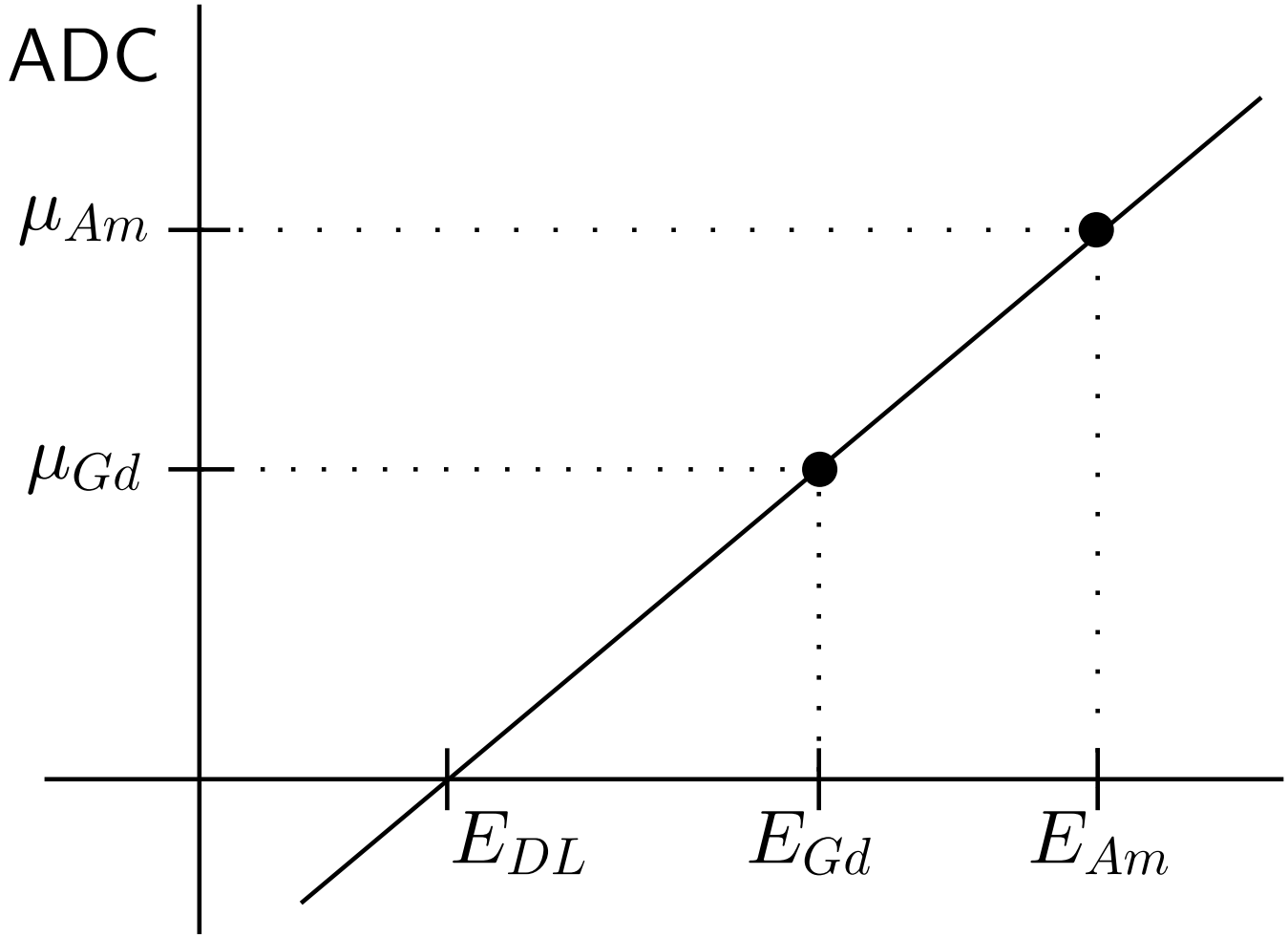


Gain relations (new alpha's)





Calibration curve scheme



Dead layer energy, different alpha's stopping power

Gain equality (μ - ADC, E - measured energy):

$$\frac{\mu_{Am}}{E_{Am} - E_{DLAm}} = \frac{\mu_{Gd}}{E_{Gd} - E_{DLGd}} \tag{1}$$

and constant stopping power approximation:

$$E_{DLAm} \simeq x_{DL}\lambda_{Am} \qquad E_{DLGd} \simeq x_{DL}\lambda_{Gd} \tag{2}$$

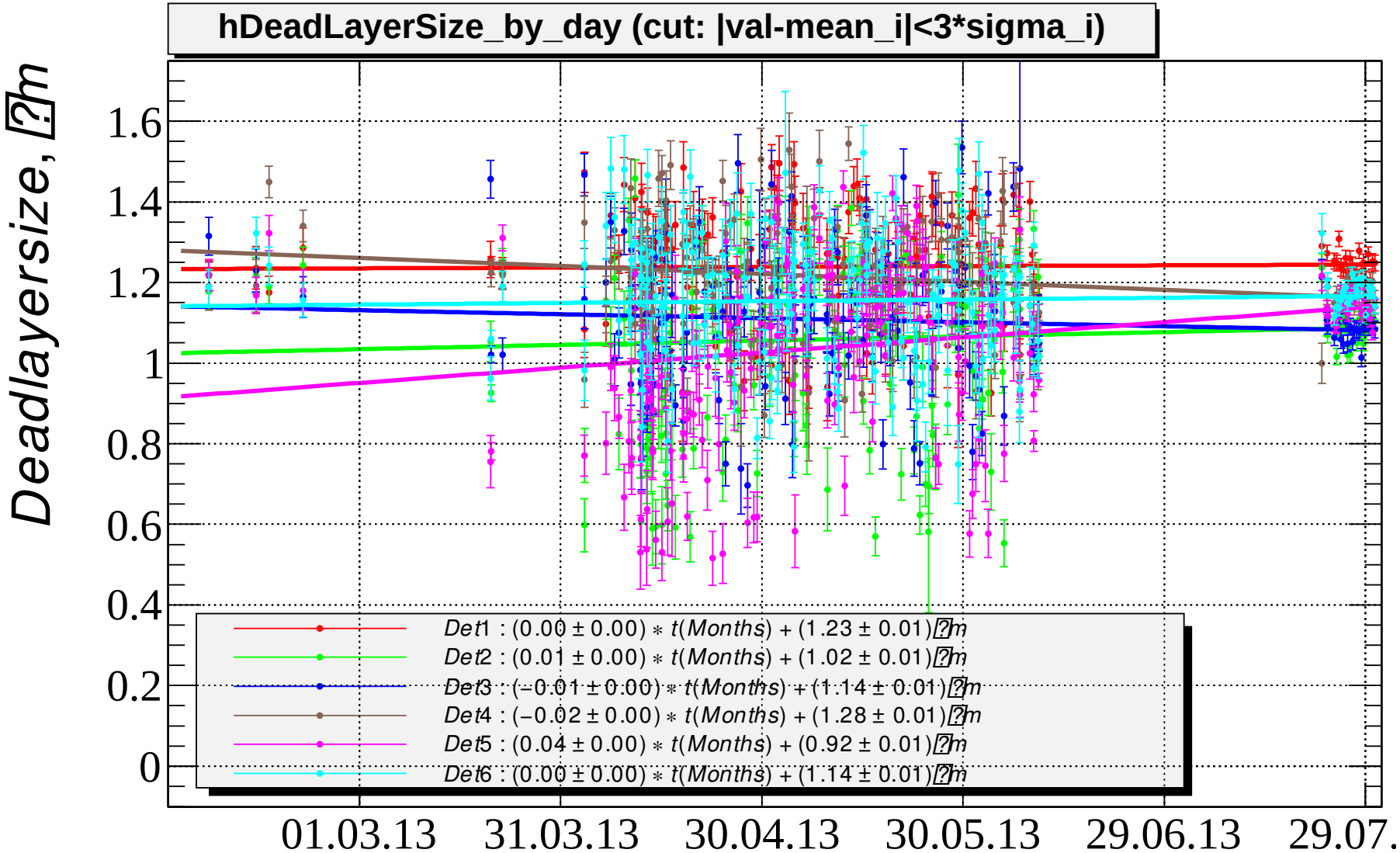
yield:

$$x_{DL} = \frac{\mu_{Gd}E_{Am} - \mu_{Am}E_{Gd}}{\mu_{Gd}\lambda_{Am} - \mu_{Am}\lambda_{Gd}} \tag{3}$$

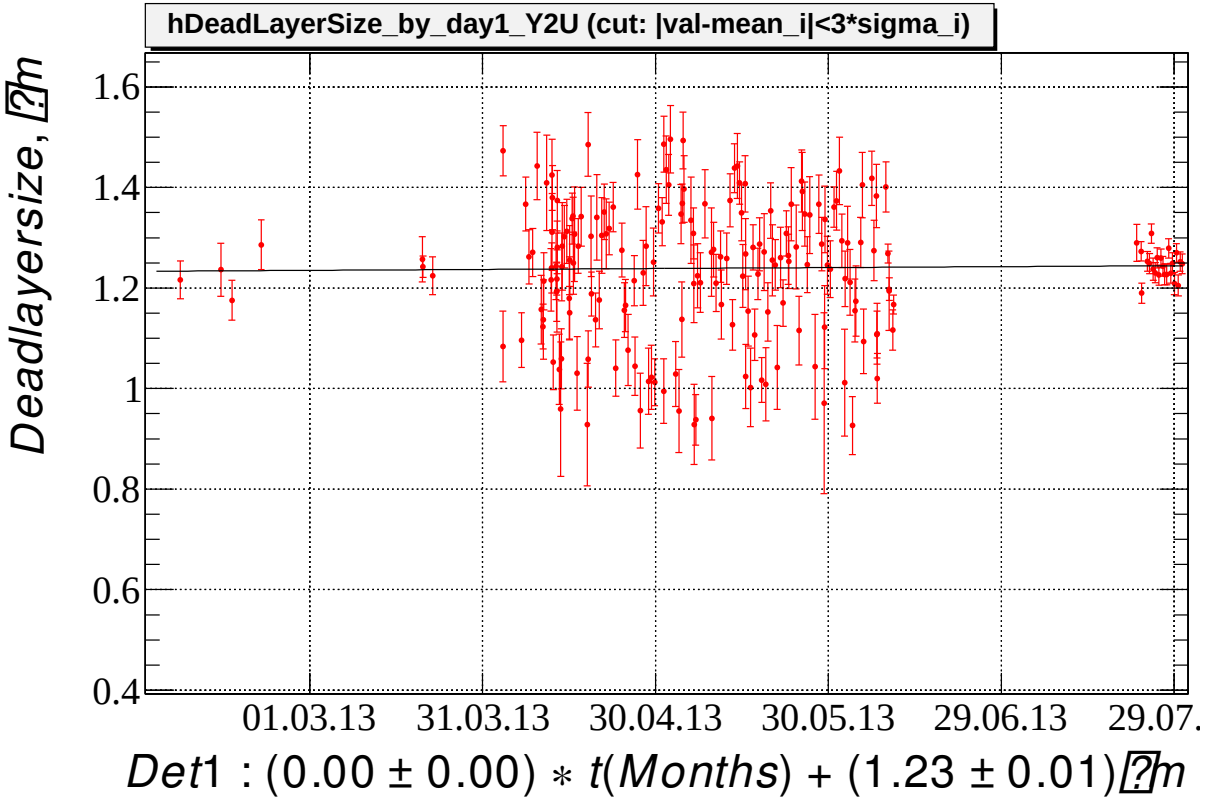
In the case of $\lambda_{Am} = \lambda_{Gd}$ this degenerates into a simple line fit

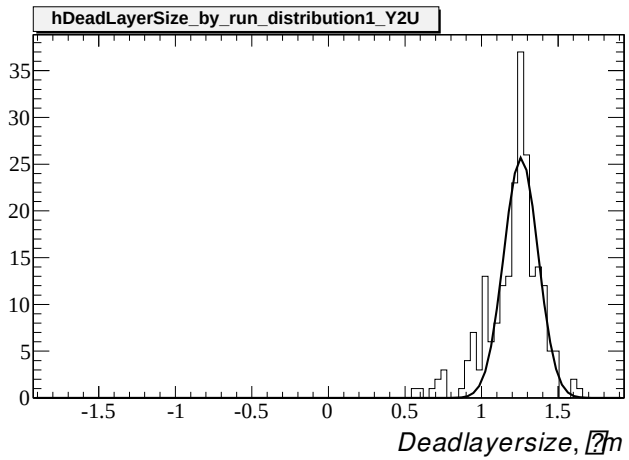
Dead layer size (x_{DL})

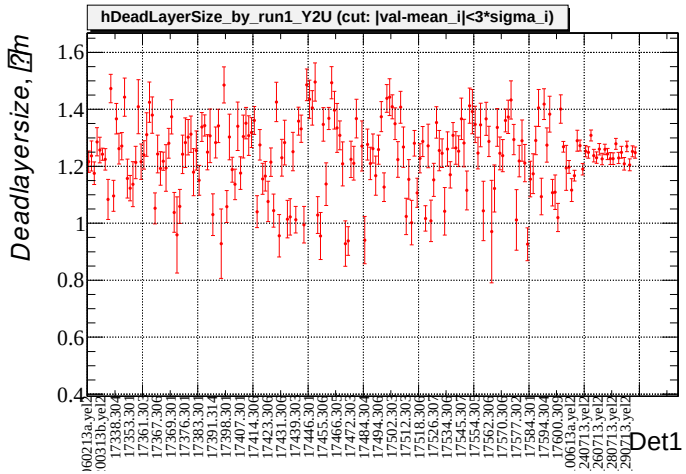
$$\lambda_{Gd} = 190 \text{ keV}/\mu\text{m} \qquad \lambda_{Am} = 140 \text{ keV}/\mu\text{m}. \tag{4}$$



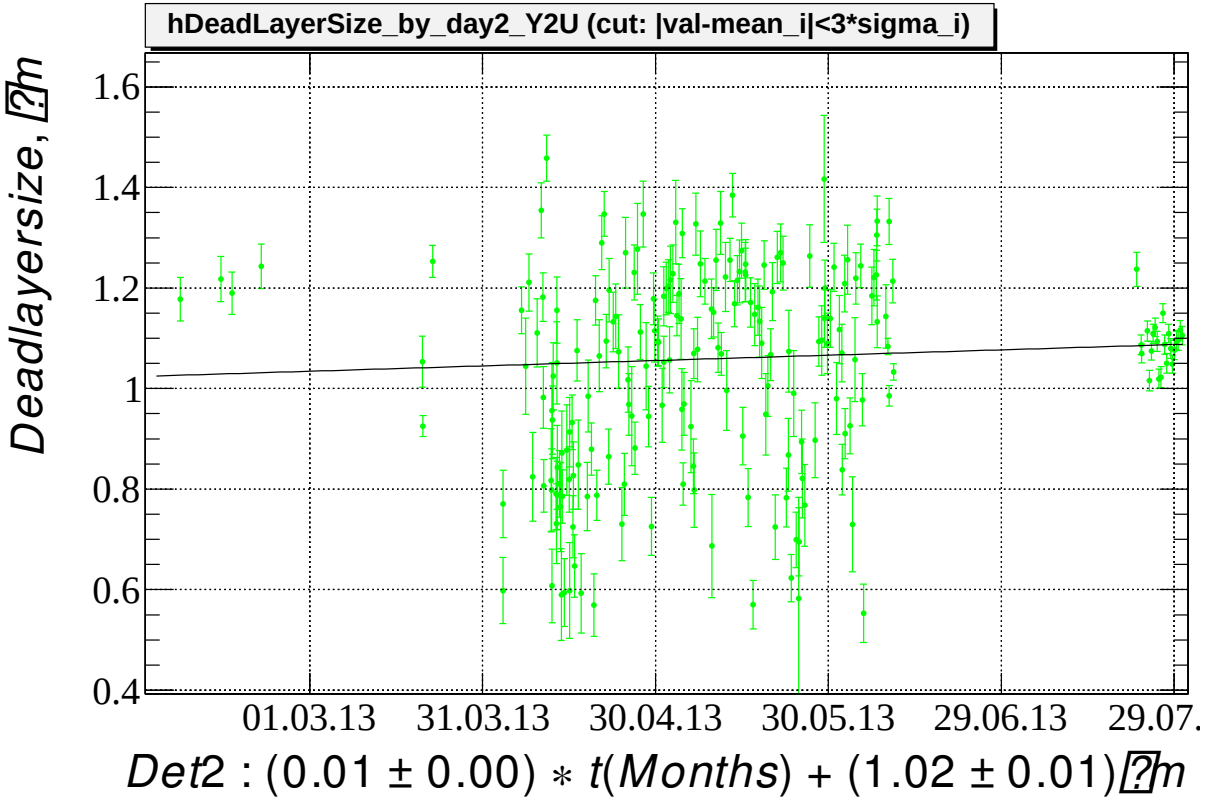
Dead layer size (new alpha's), Detector 1

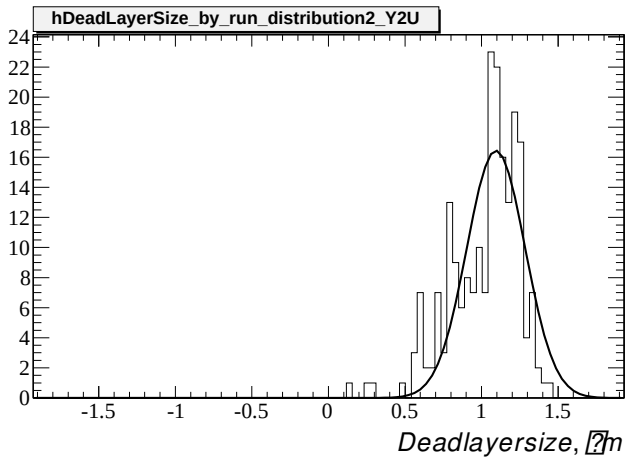


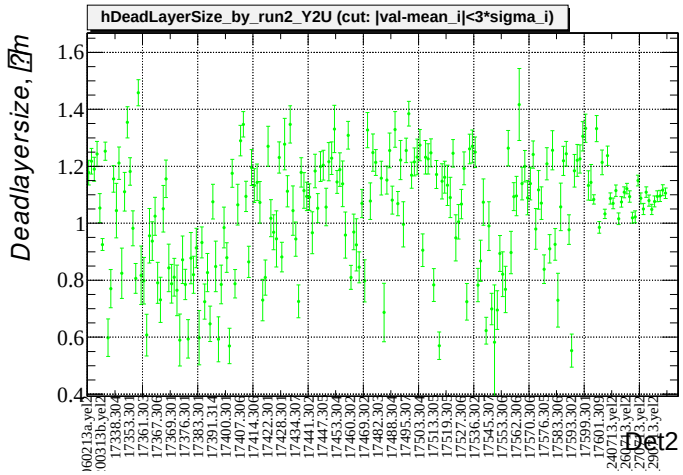




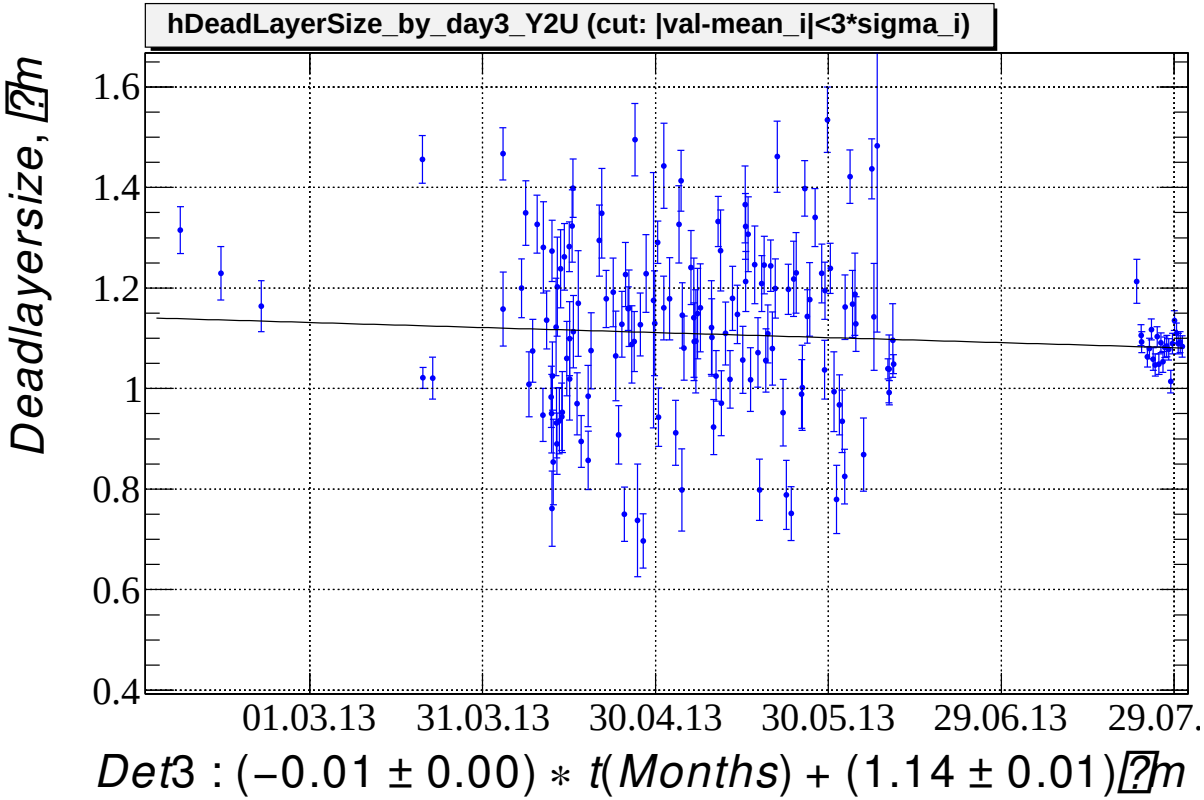
Dead layer size (new alpha's), Detector 2

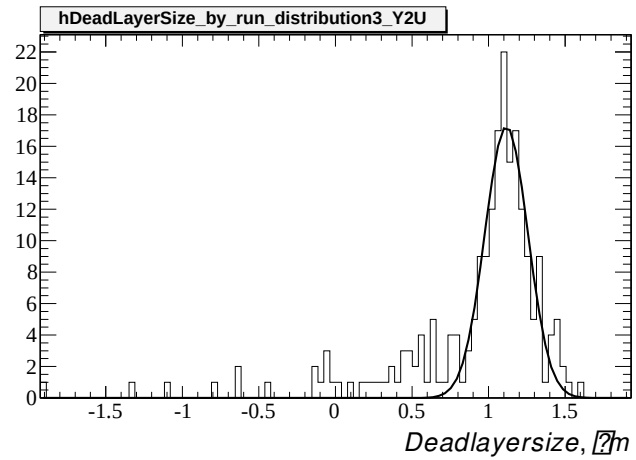


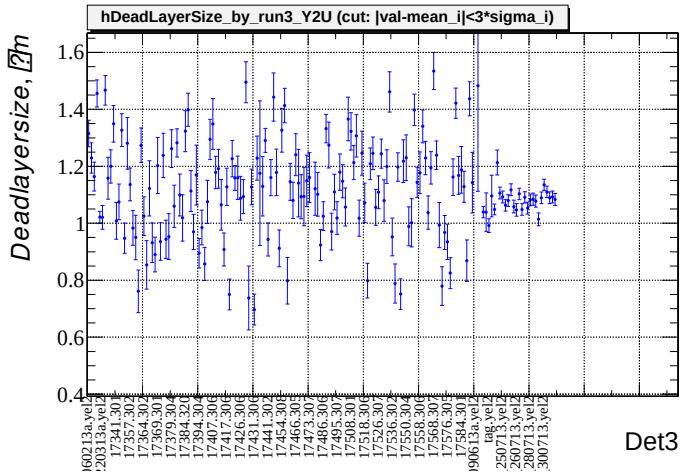




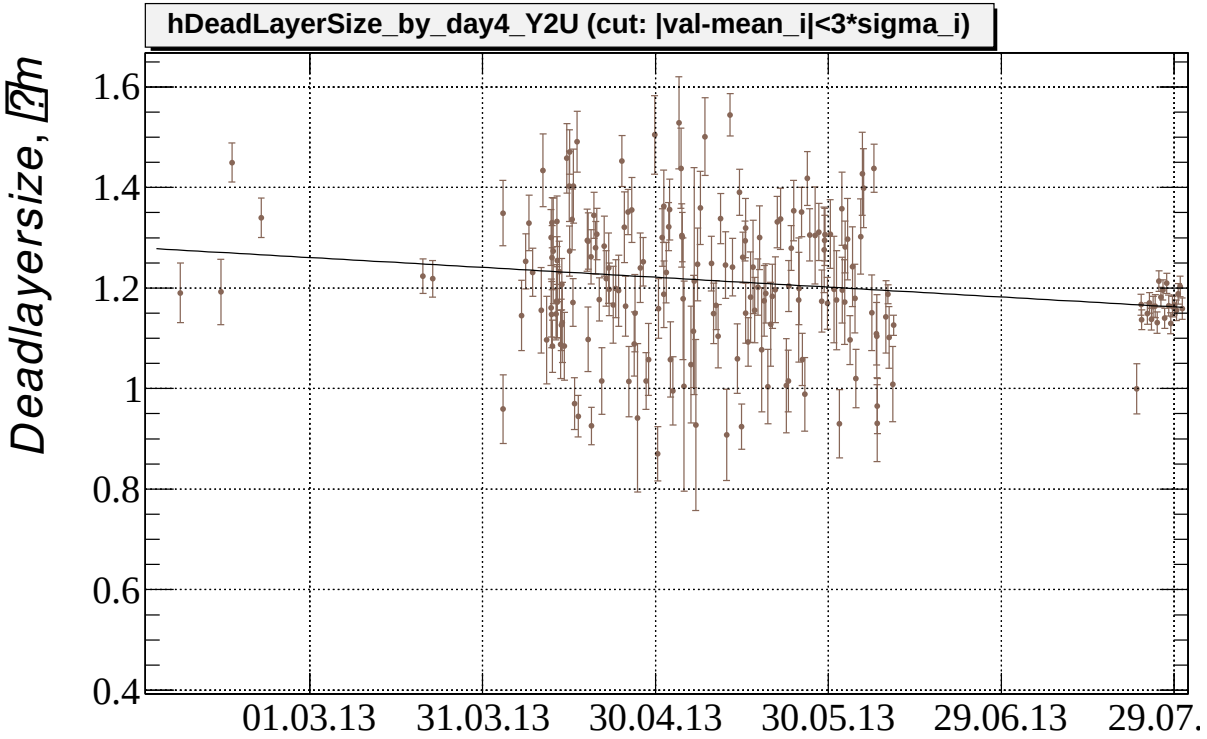
Dead layer size (new alpha's), Detector 3



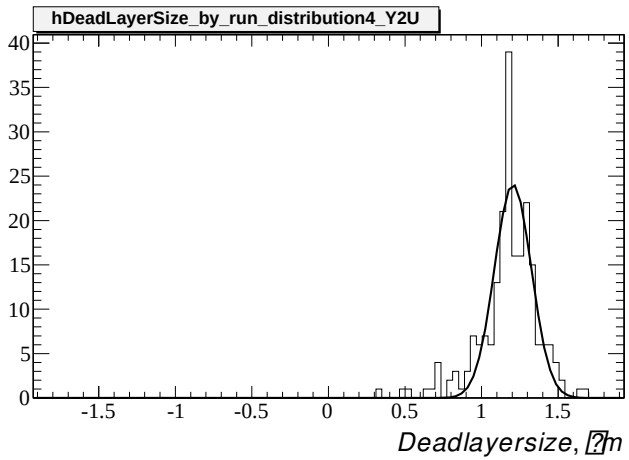


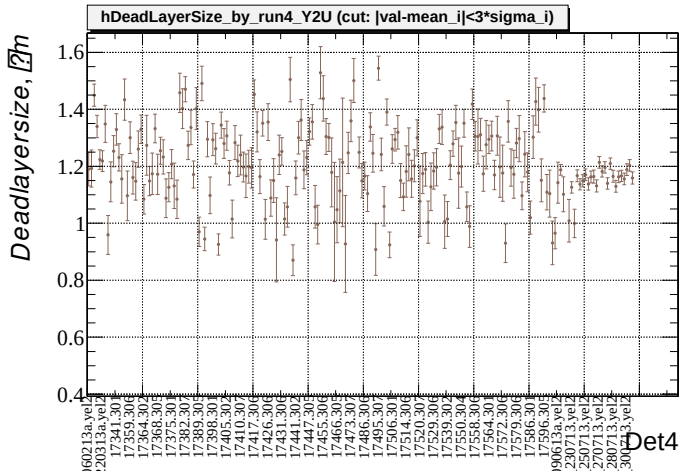


Dead layer size (new alpha's), Detector 4

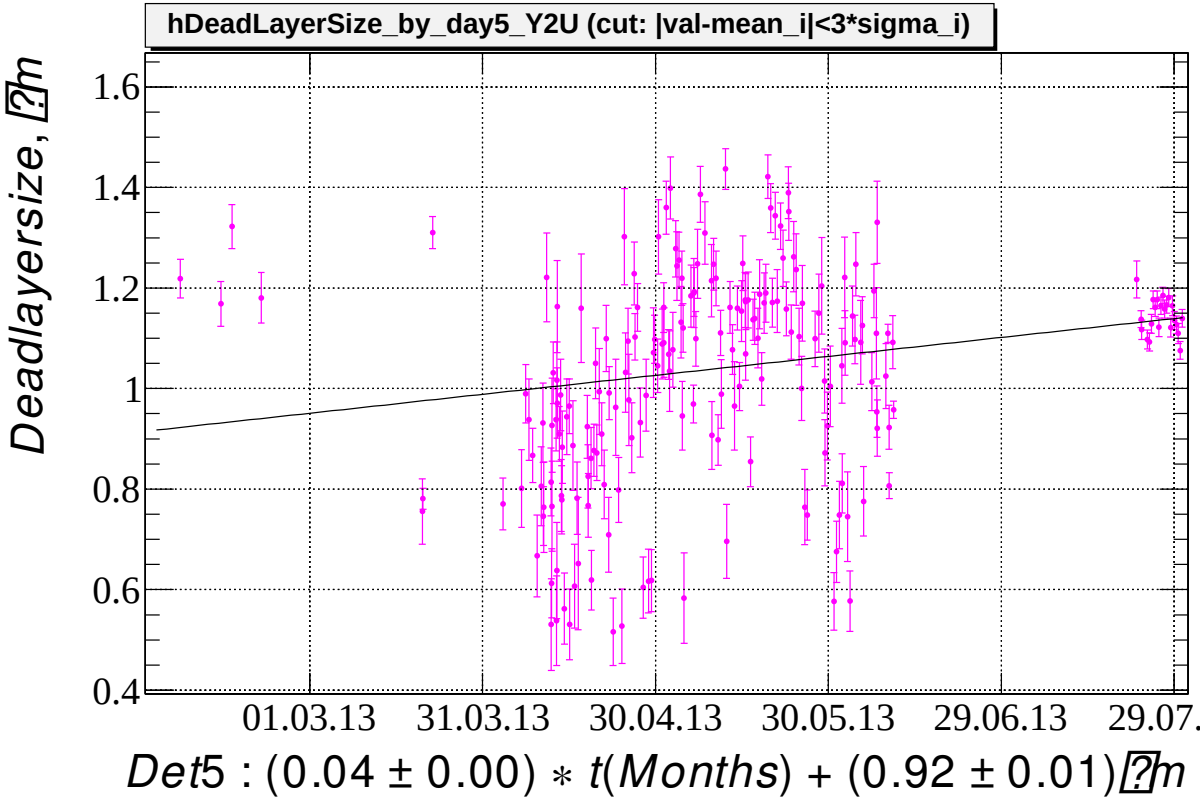


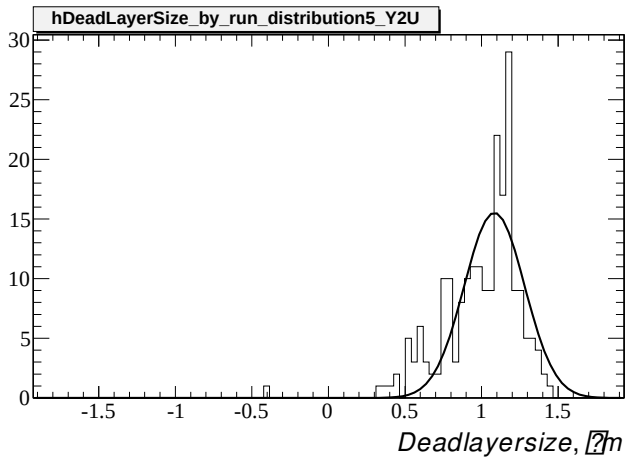
$Det4 : (-0.02 \pm 0.00) * t(Months) + (1.28 \pm 0.01)$?m

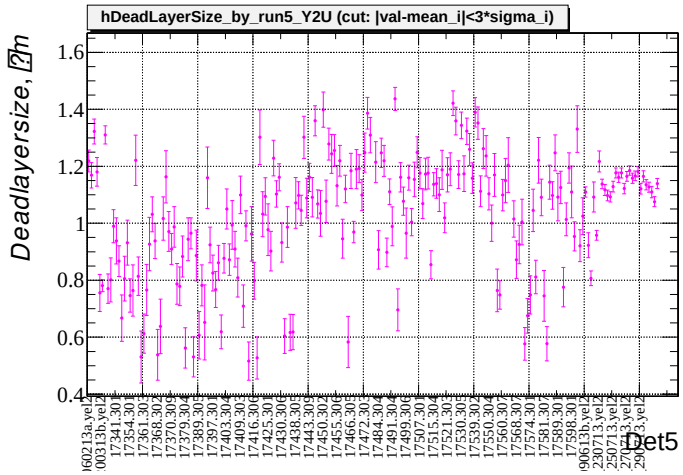
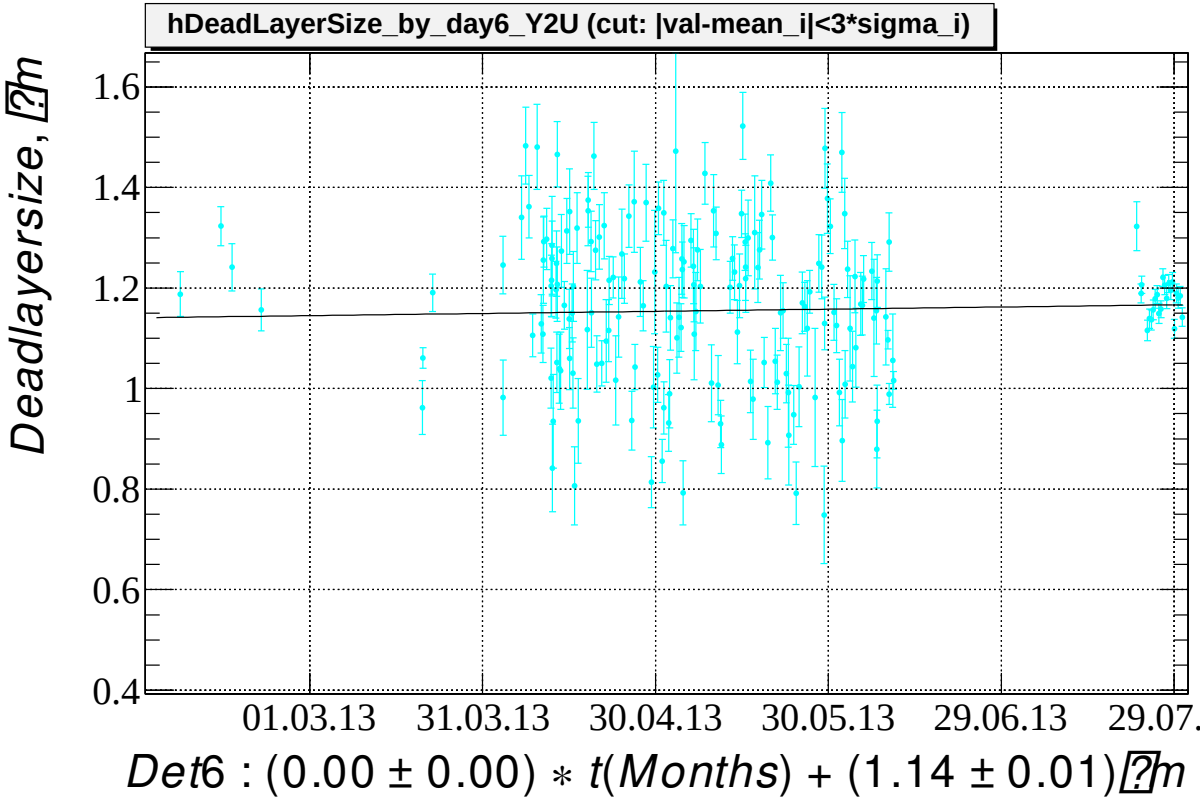
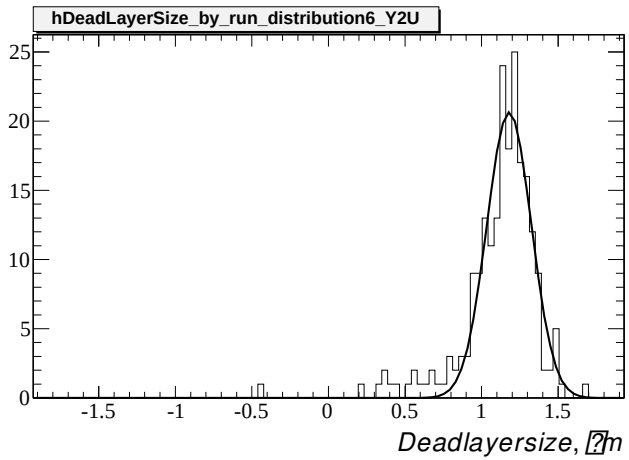
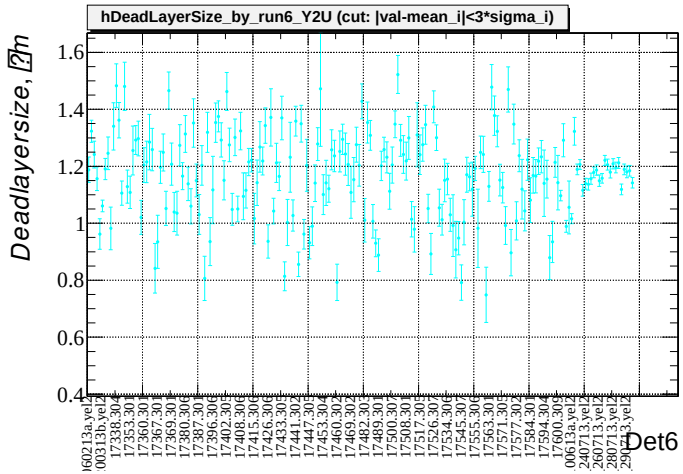




Dead layer size (new alpha's), Detector 5







Dead layer size (new alpha's), Detector 6