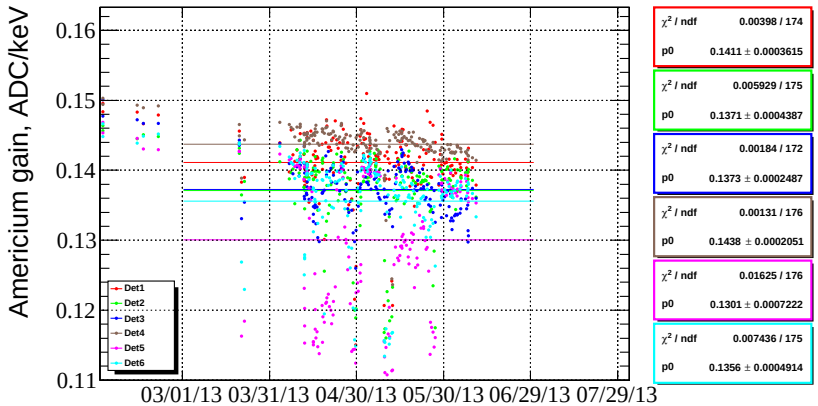
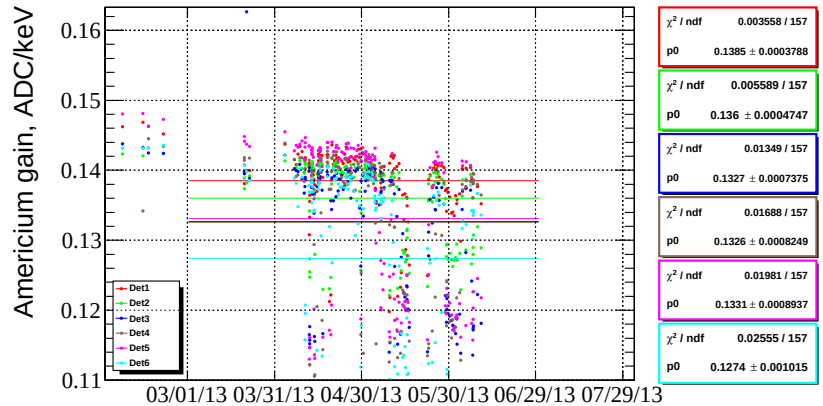
Alpha note

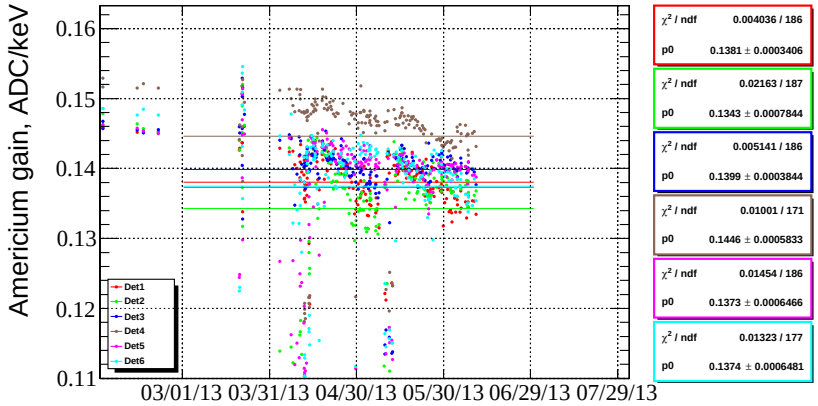
Latest version is always on the wiki:
https://wiki.bnl.gov/rhicspin/File:PC-alpha-analysis-note.pdf
Plots in EPS available here:
https://github.com/rhicspin/alpha-analysis-note



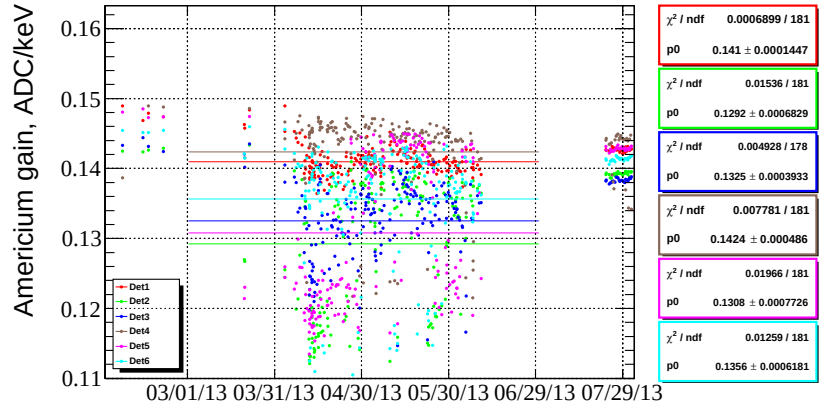
(a) B1U



(b) Y1D

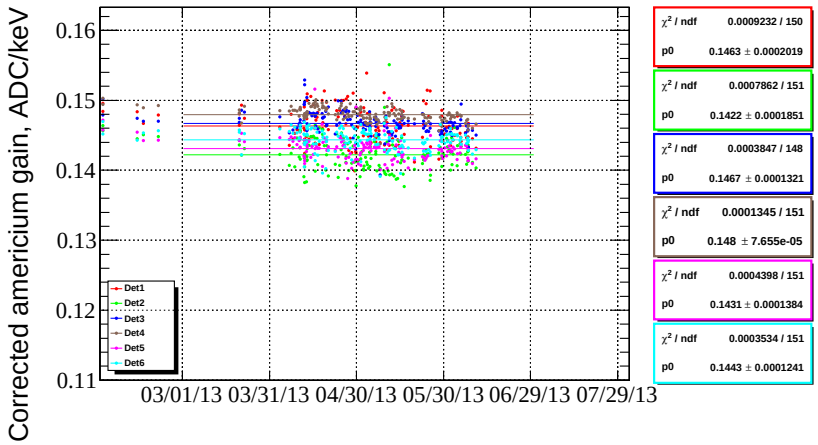


(c) B2D

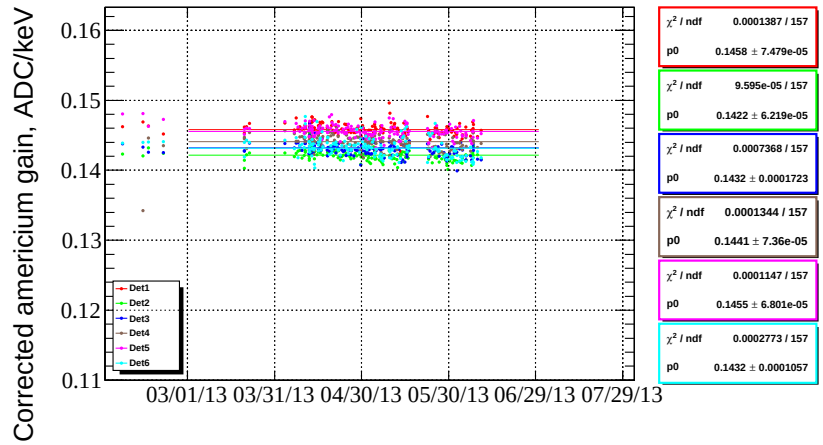


(d) Y2U

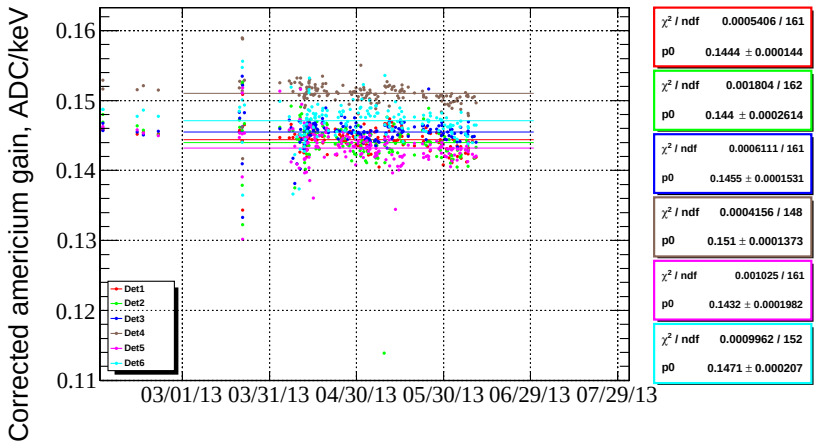
Figure: Time dependence of the detector gain g_{Am} as measured with α-particles emitted by the Am source. Colors represent individual detectors.



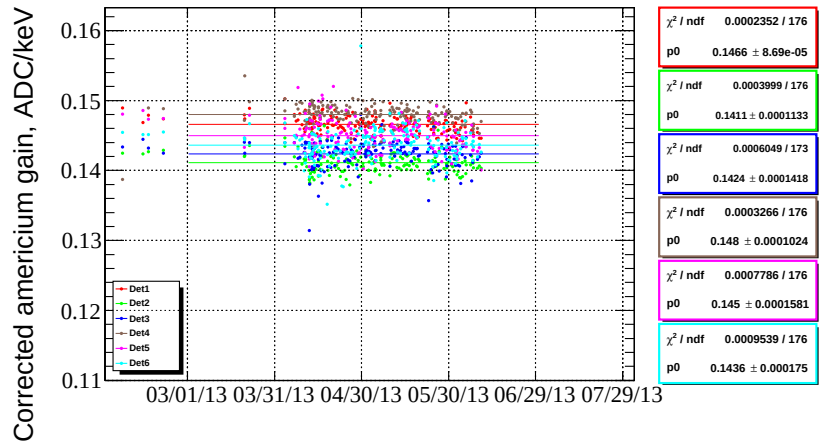
(a) B1U



(b) Y1D

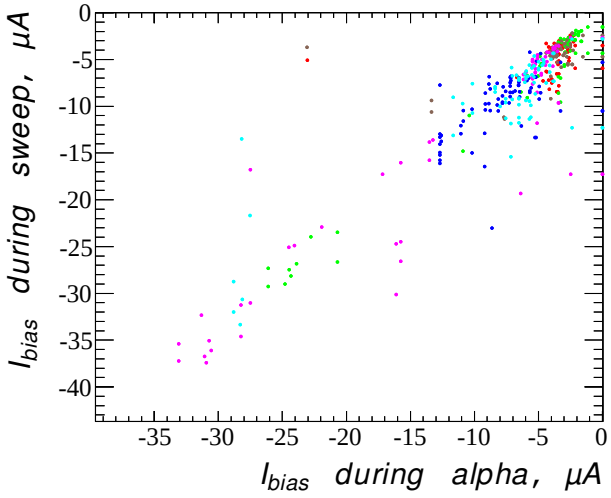


(c) B2D

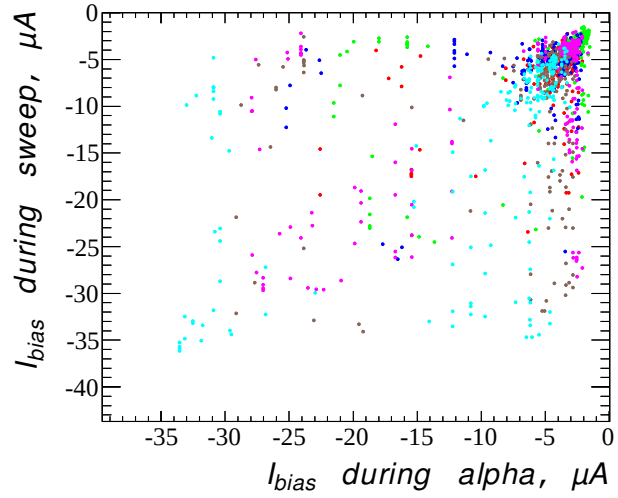


(d) Y2U

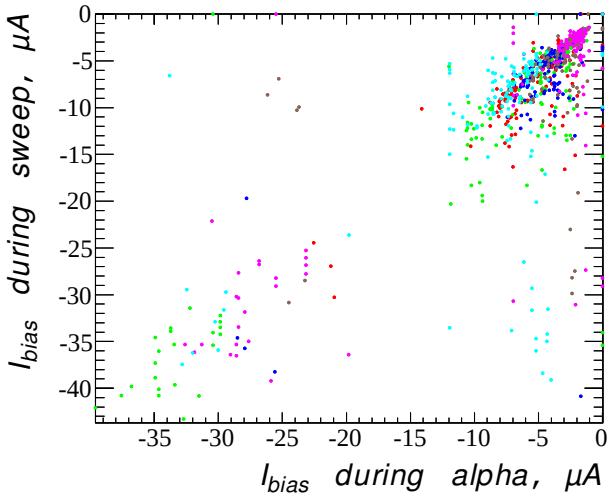
Figure: Time dependence of the detector gain g_{Am} that was corrected to zero bias current.



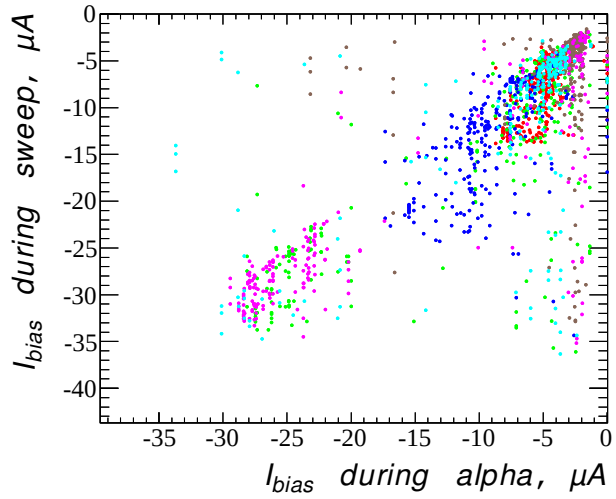
(a) B1U



(b) Y1D

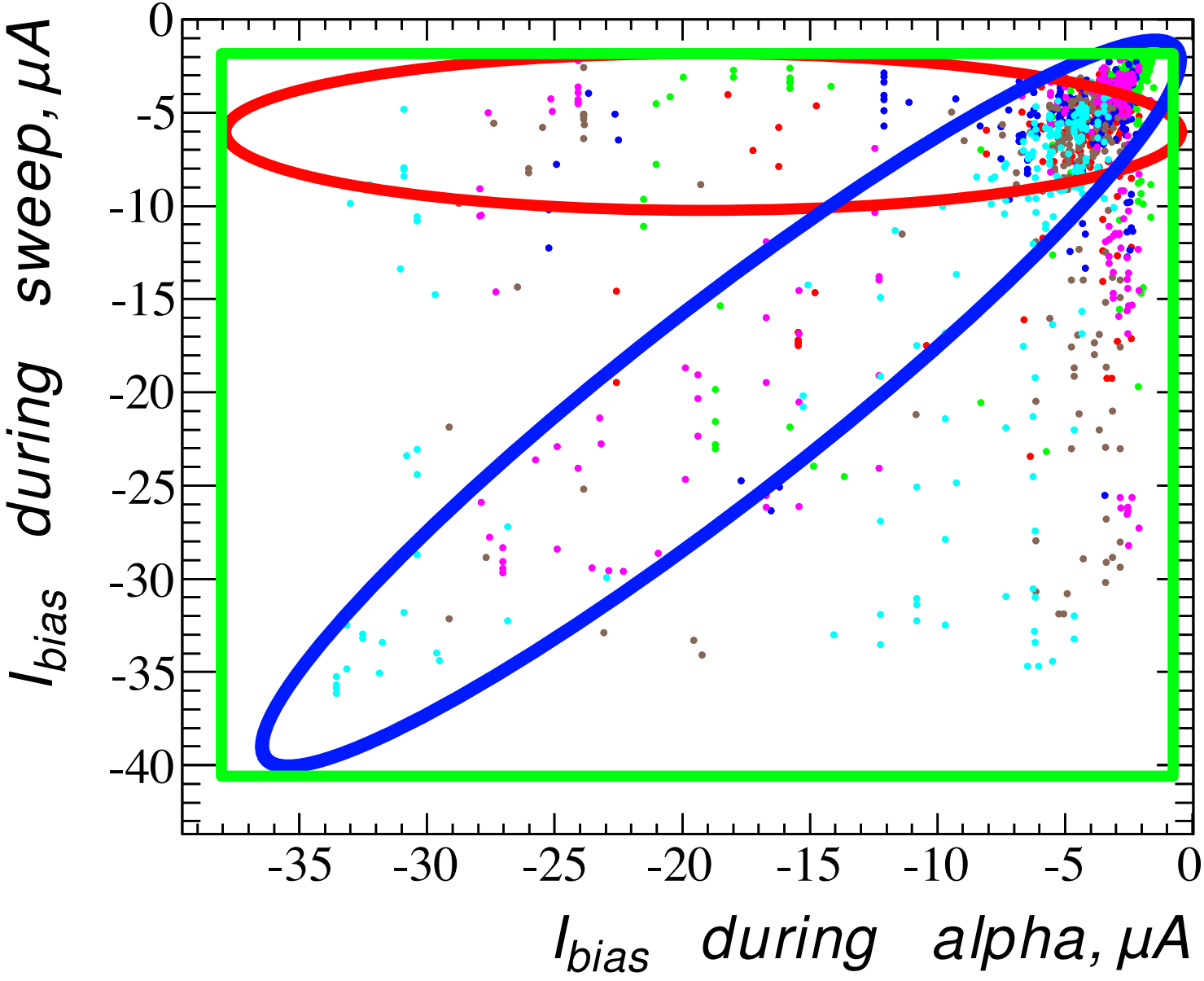


(c) B2D



(d) Y2U

Figure: Correlation between the mean bias current during the alpha measurements and bias currents that were taken during the sweep measurements.



- Single alpha calibration
- Nearest alpha calibration
- Bias current correction

Here we only discuss bias current contribution to the calibration.

Stats

How many measurements have at least one bias current measurement during them?

- 89% of alpha measurements out of 784
- 33% of sweep measurements out of 3036

Interpolation is required for BC correction.