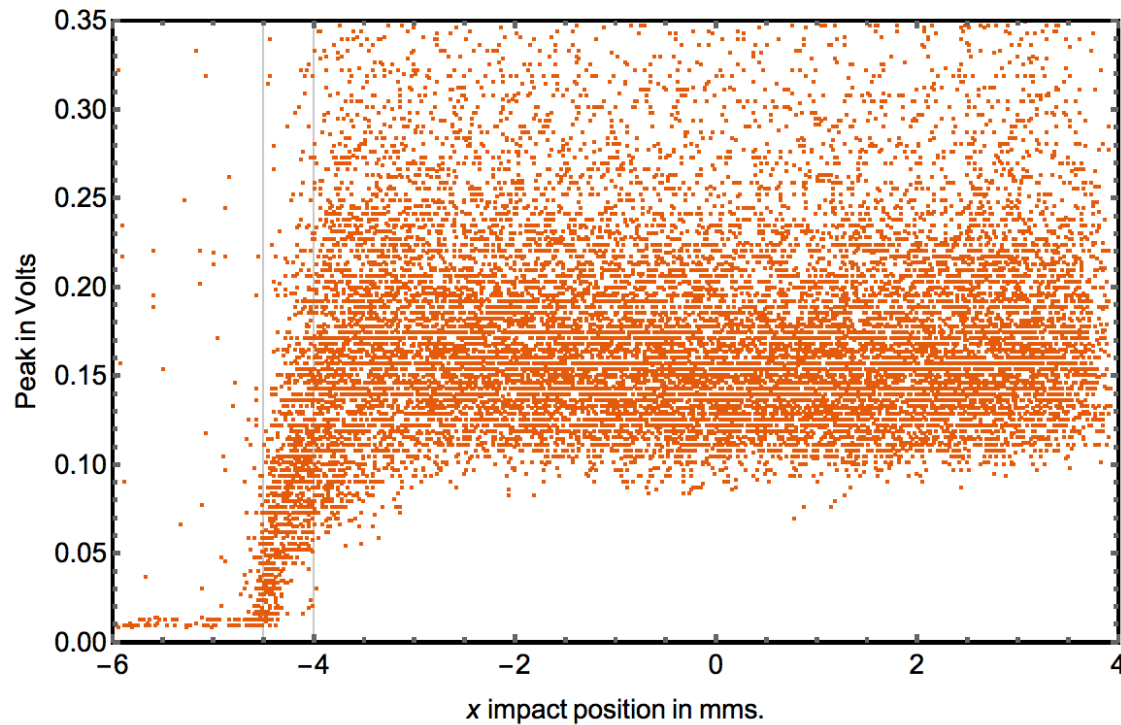


Calibration of MIP against Fe55 for an RMD 8x8 mm² APD in 150 GeV muon beam, 1800 V, Oct 2016

Sebastian White

21 Feb 2017

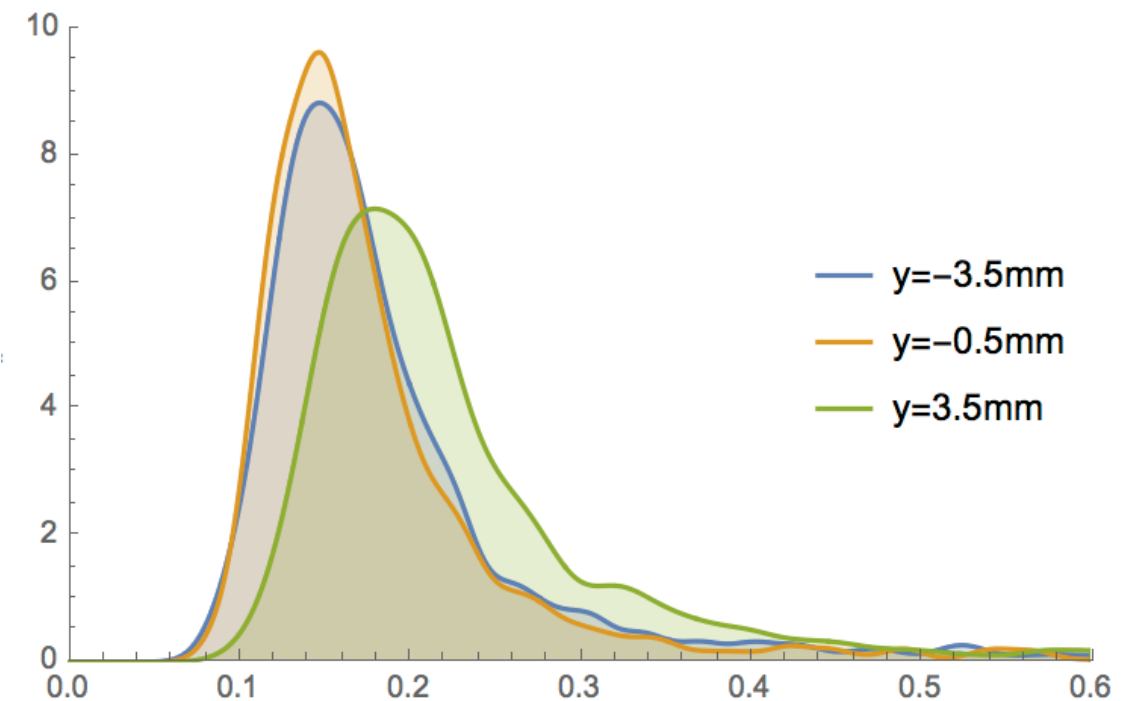
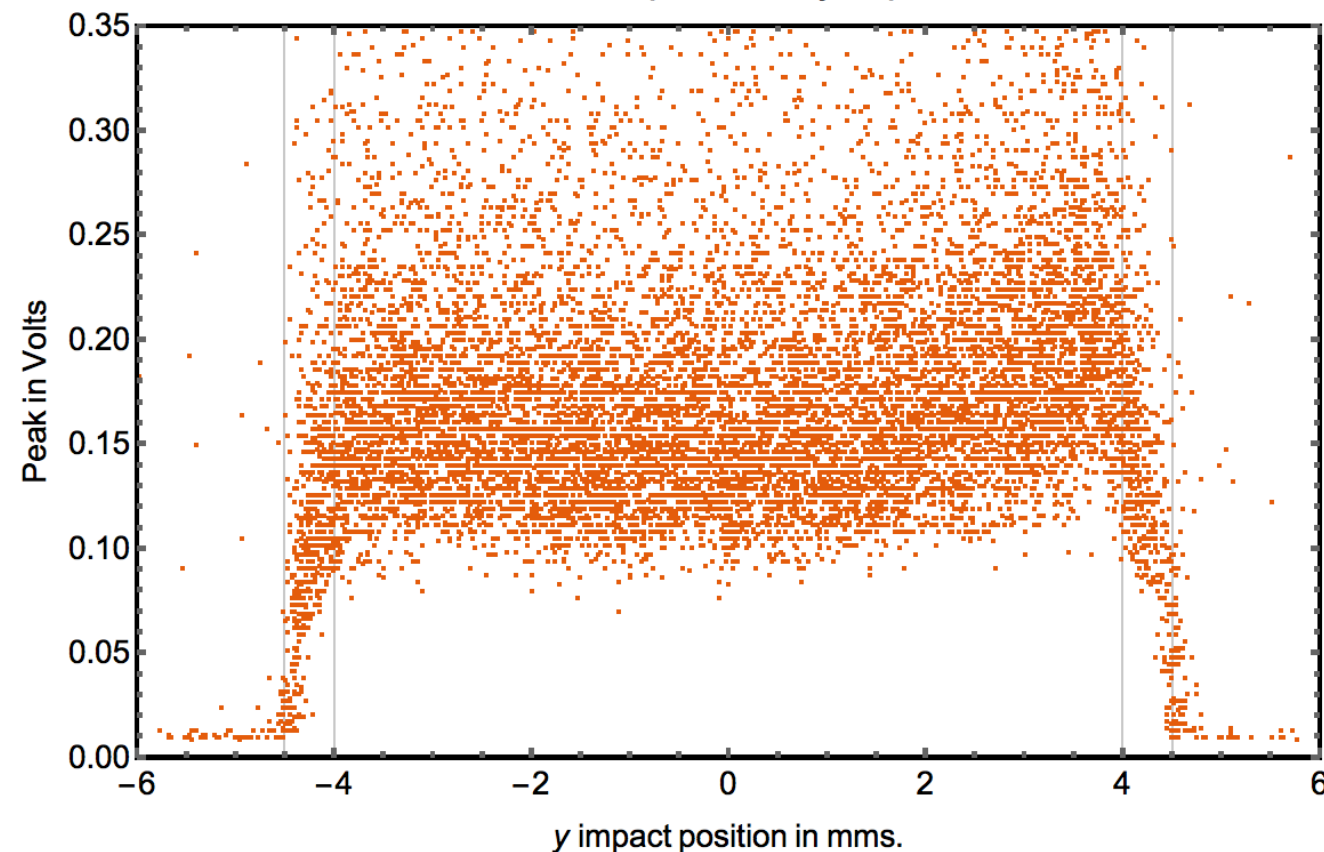
Peak Amplitude vs. x impact



- x-scan cut by MCP fiducial
- at each pos'n -> Landau
- y-scan shows small variation

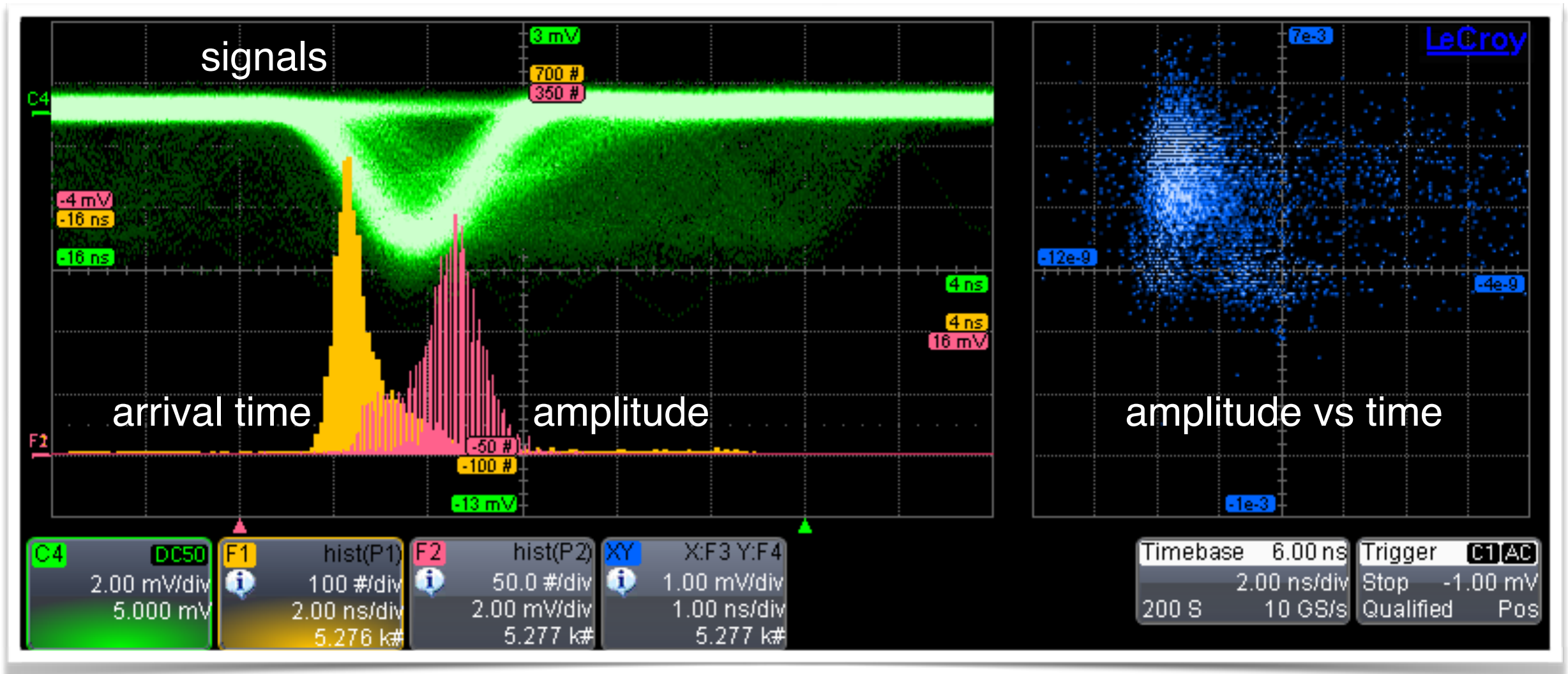
MIP signal ~ 140 mV

Peak Amplitude vs. y impact



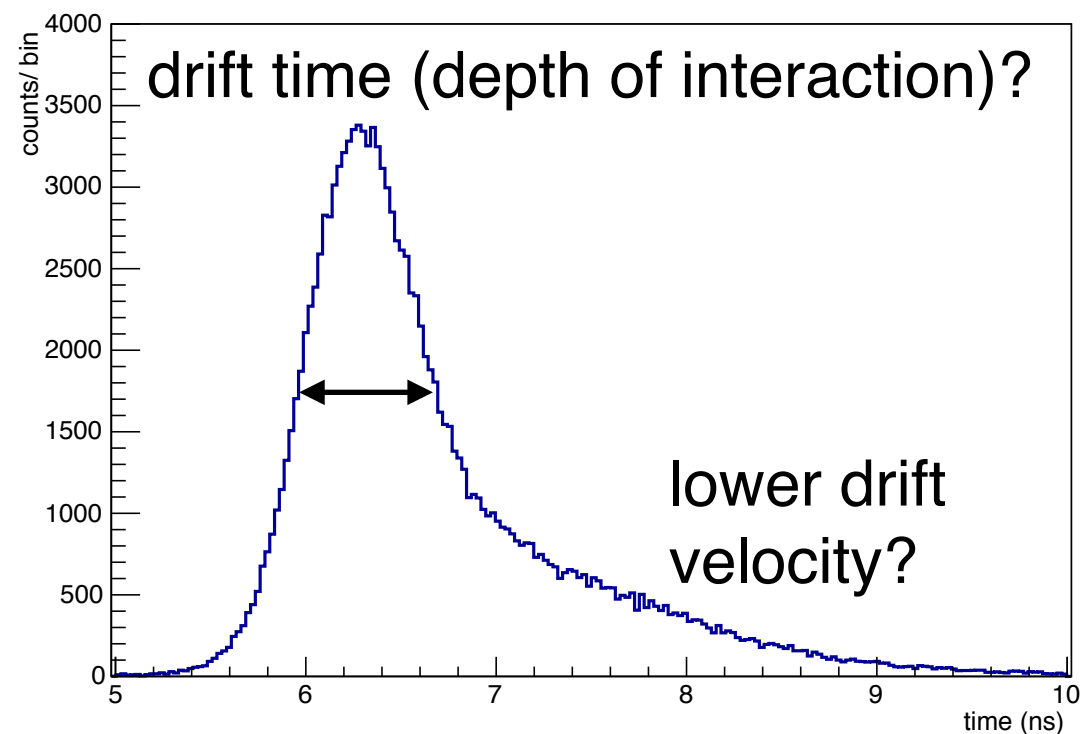
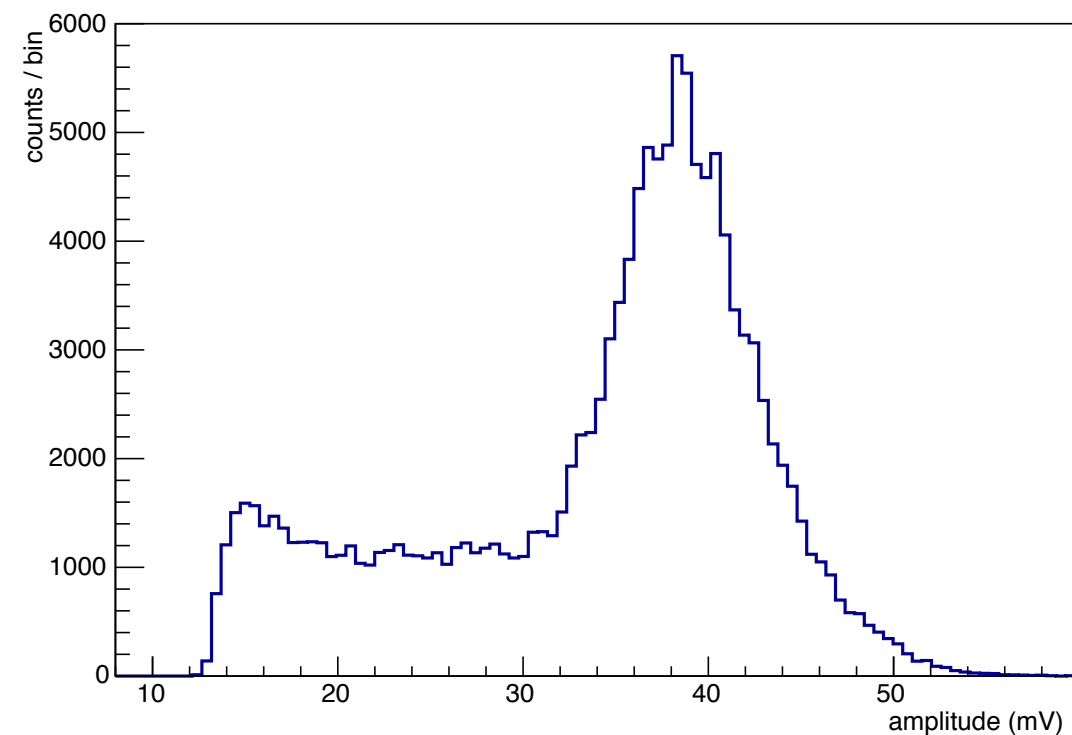
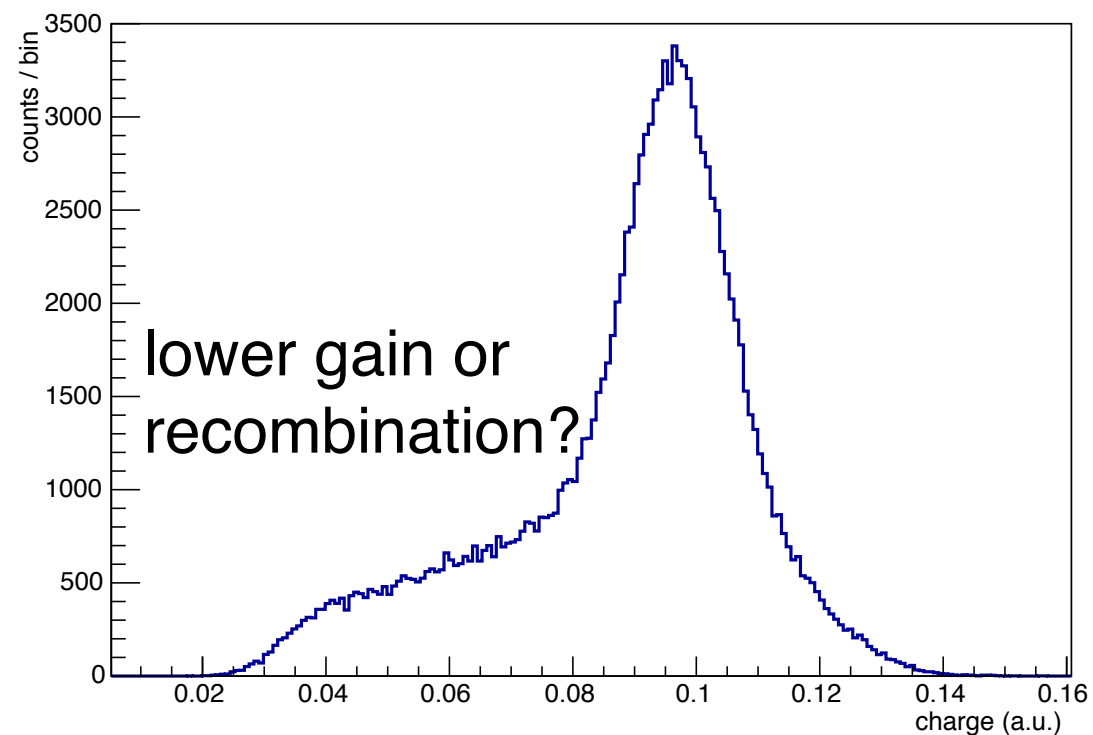
The same RMD 8xm mm² APD + preamp, 1800 V
Filippo Resnati, 22 Feb 2017

Again t_0 is set by the X-ray tagging signal.
Preliminary depth of interaction study (timing, charge, and signal shape)
in high-gain 'Hyper-fast' silicon detector with trans-impedance preamplifier



Mean free path of 5.4 keV X-rays in silicon (~ 1500 e⁻/h⁺): ~ 20 μ m

The same RMD 8xm mm² APD + preamp, 1800 V
Filippo Resnati, 22 Feb 2017



=> 1 MIP is equivalent to
1500 (140/39) ~ 5380
electron-hole pairs.