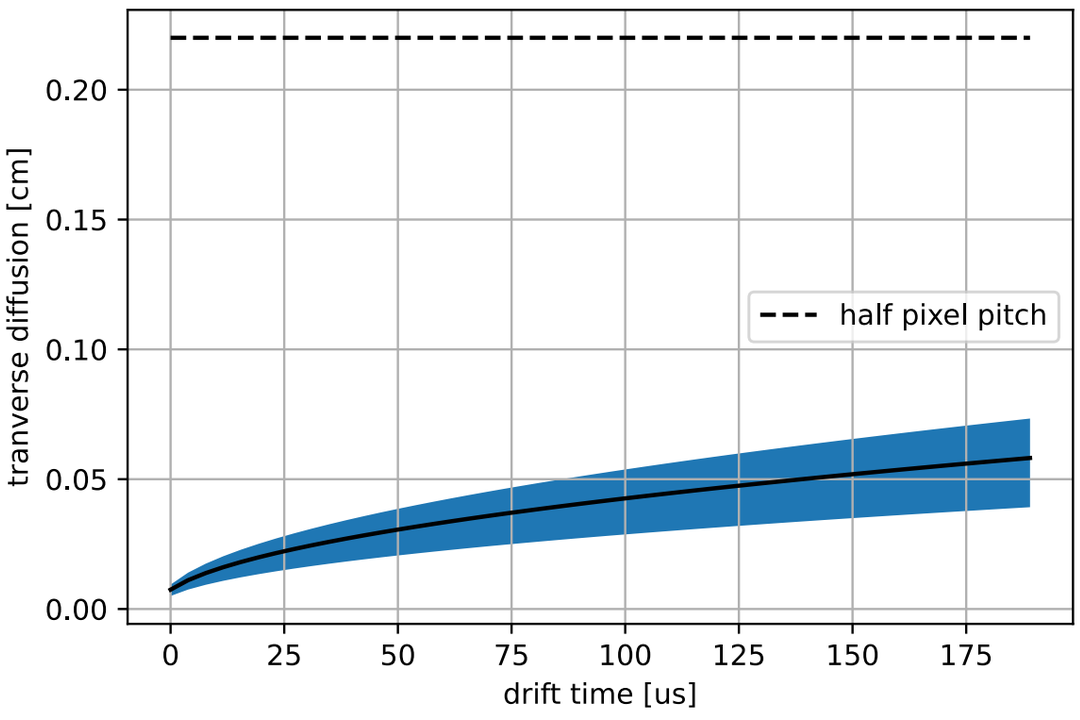
Figuring out the sensitivity and ranges of fitting detector parameters in diff-larnd-sim

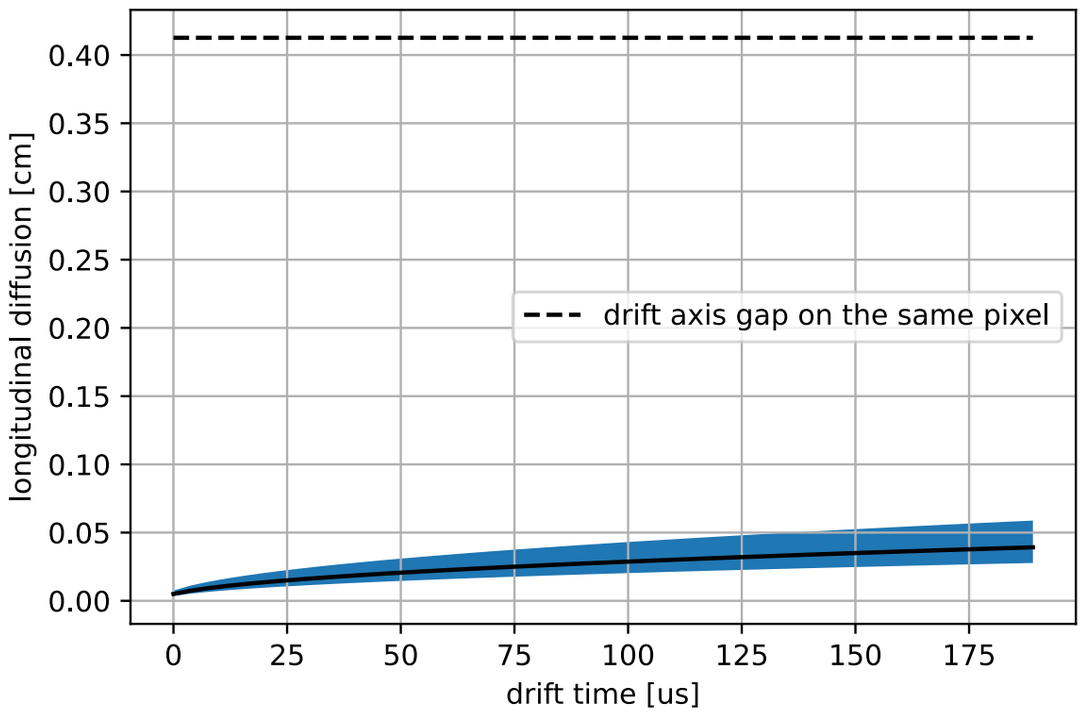
For **eField**, **vdrift**, nothing changes. The fitting ranges will be the prior ranges.

There's not much point fitting diffusion parameters

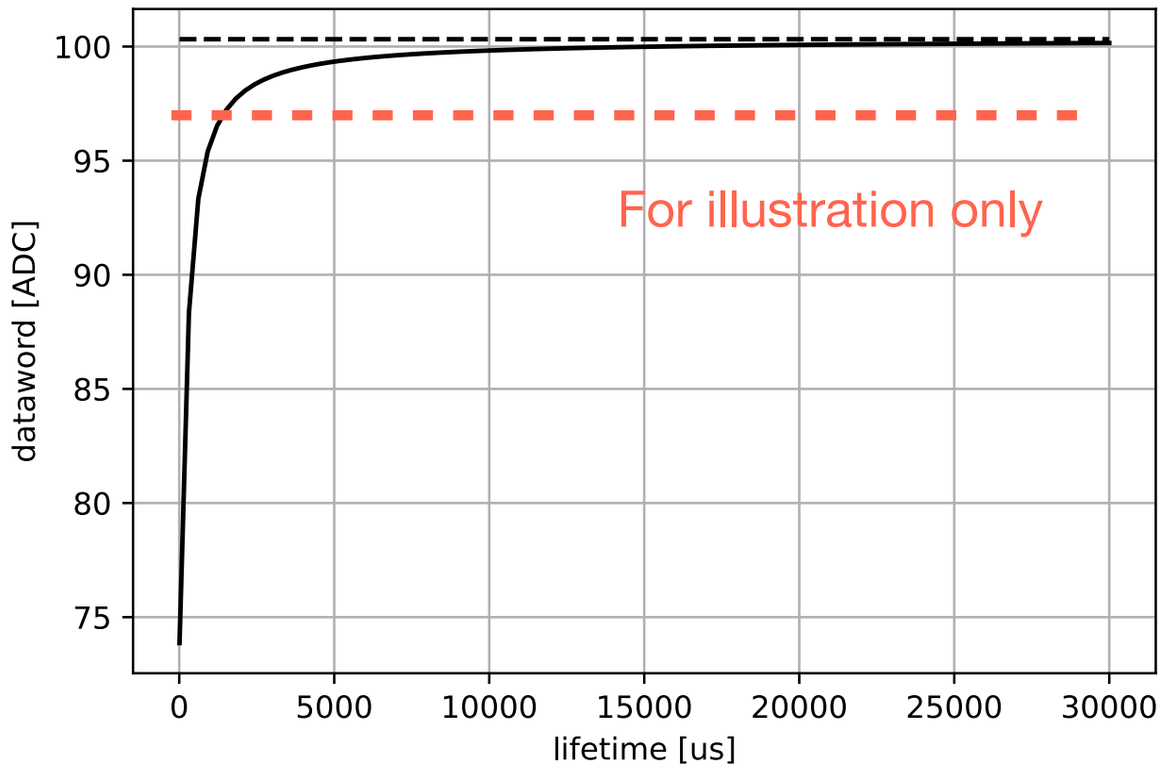
tran_diff



long_diff

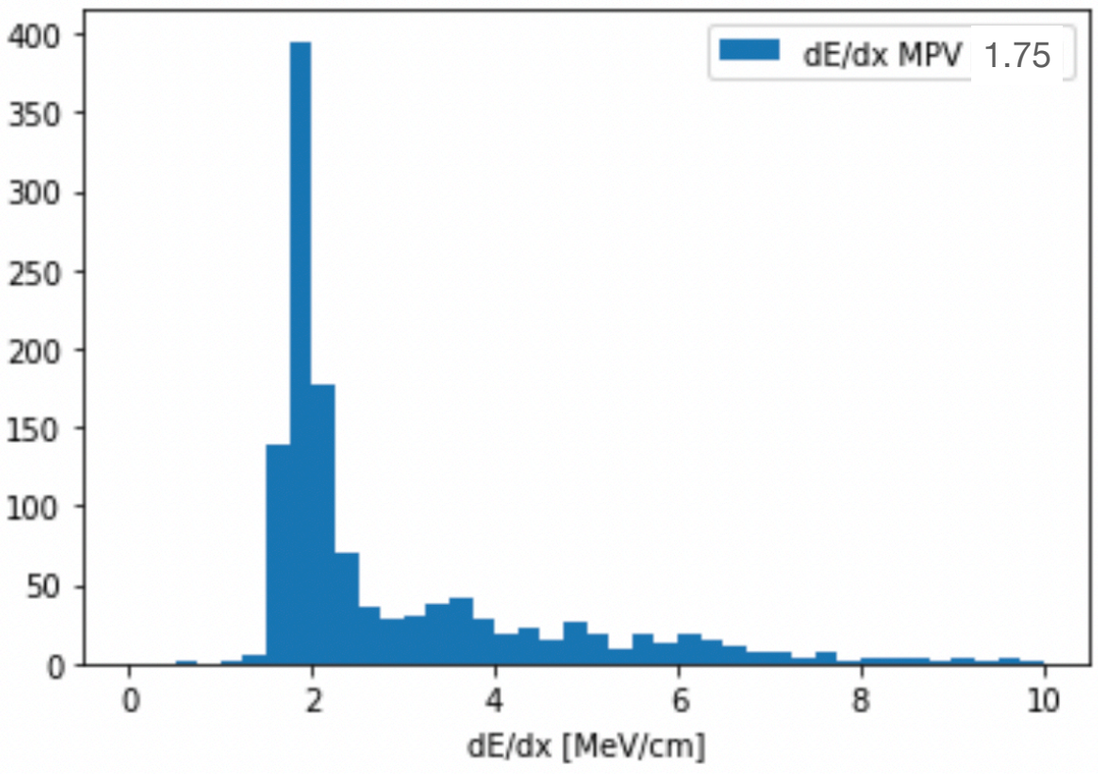


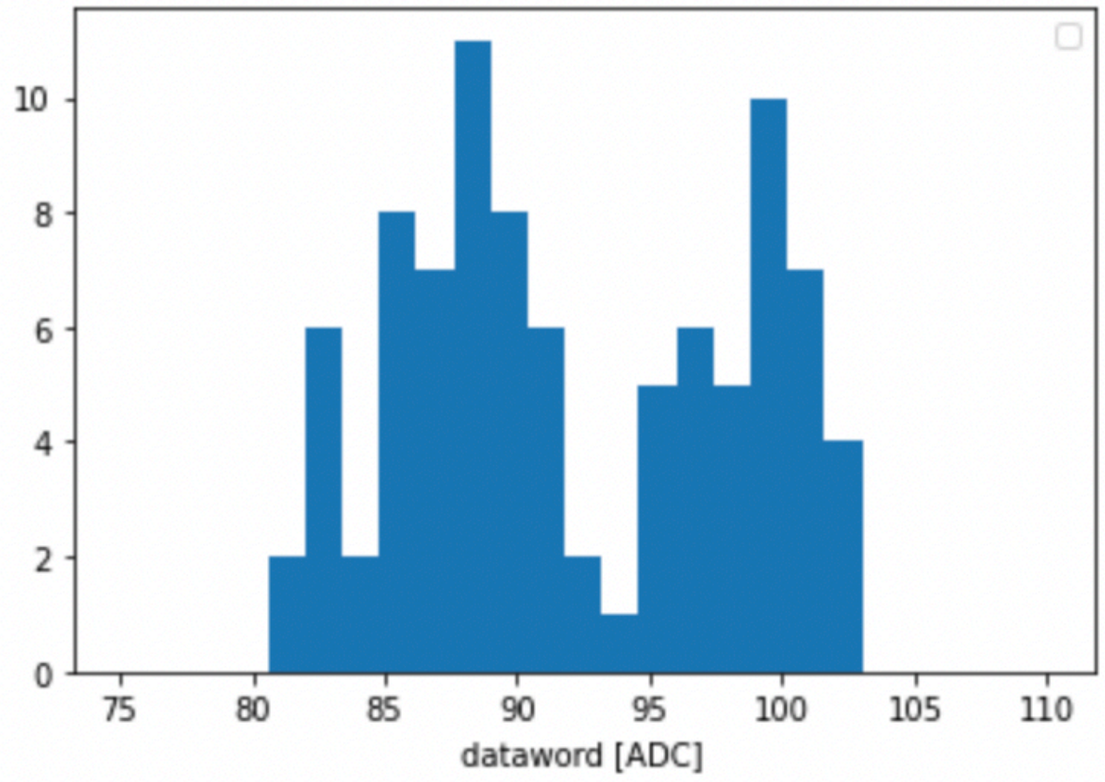
Using lifetime as an example for lifetime and Birks model parameters Ab, kb

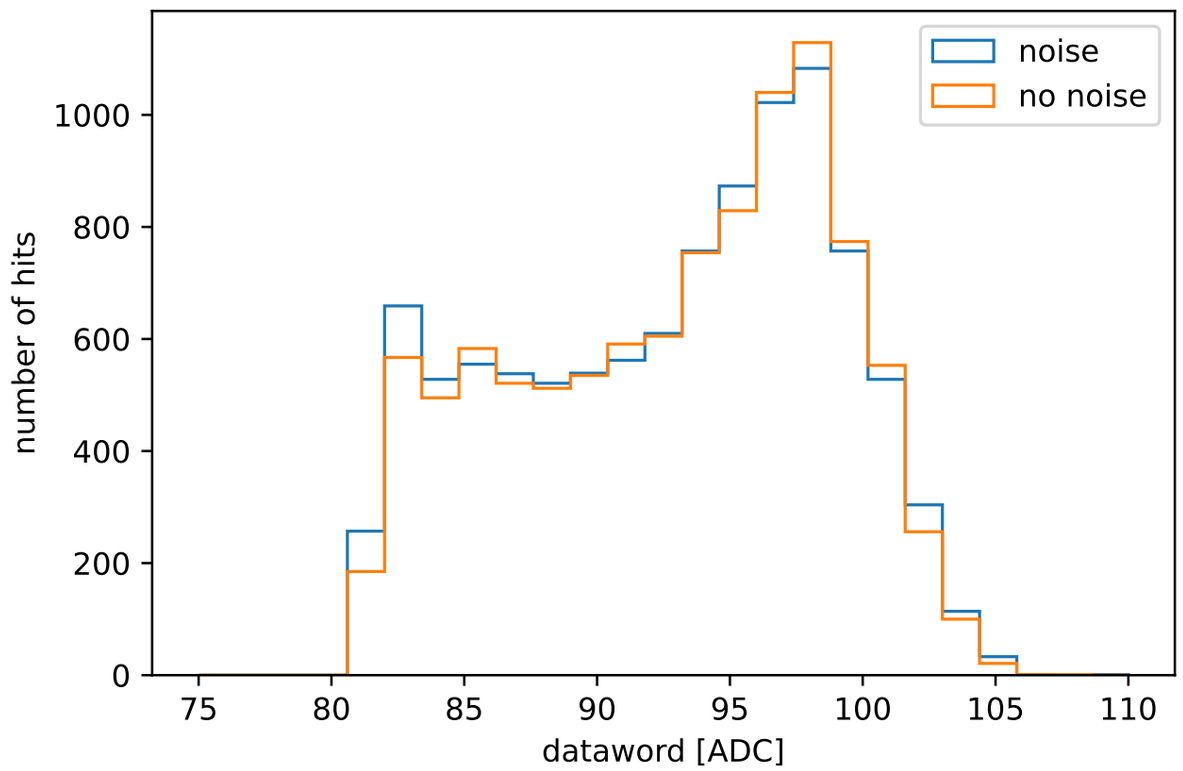


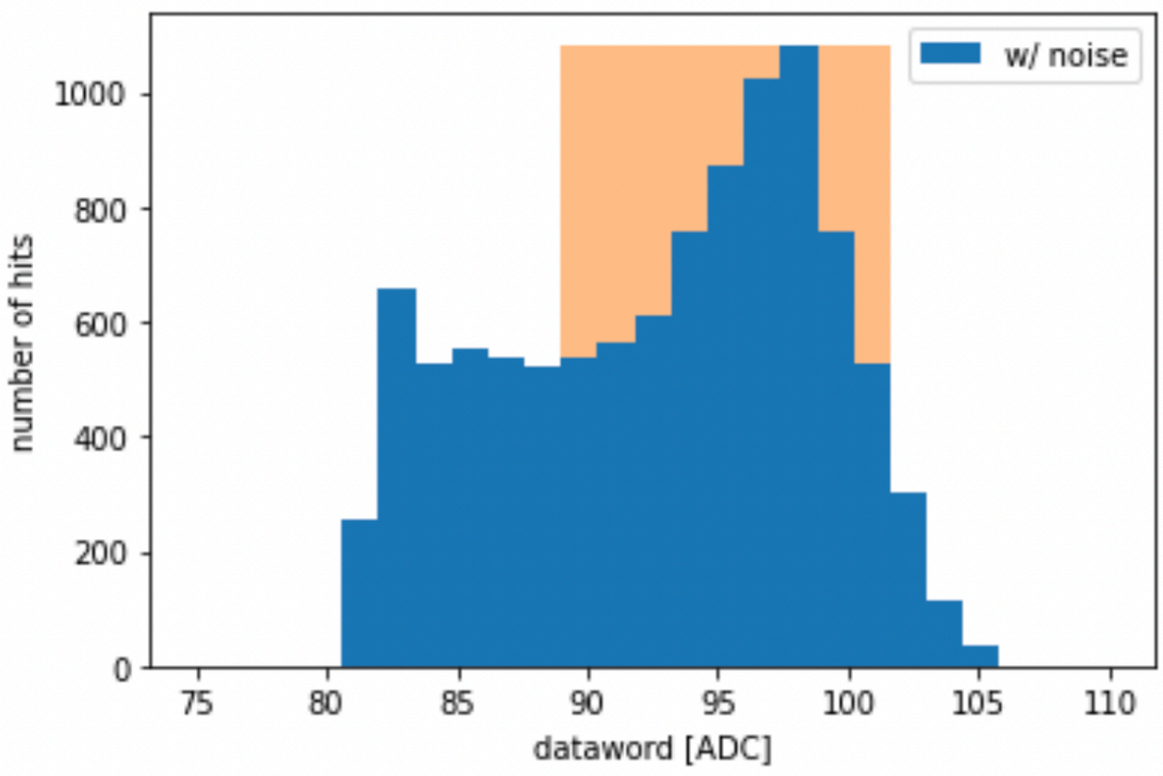
Assume 1.75MeV/cm and the pixel readout (single pitch) at the cathode

Pixel readout given the center piece of muon tracks






noise
no noise
number of hits
dataword [ADC]
0
200
400
600
800
1000
75
80
85
90
95
100
105
110


w/ noise
number of hits
dataword [ADC]
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85
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95
100
105
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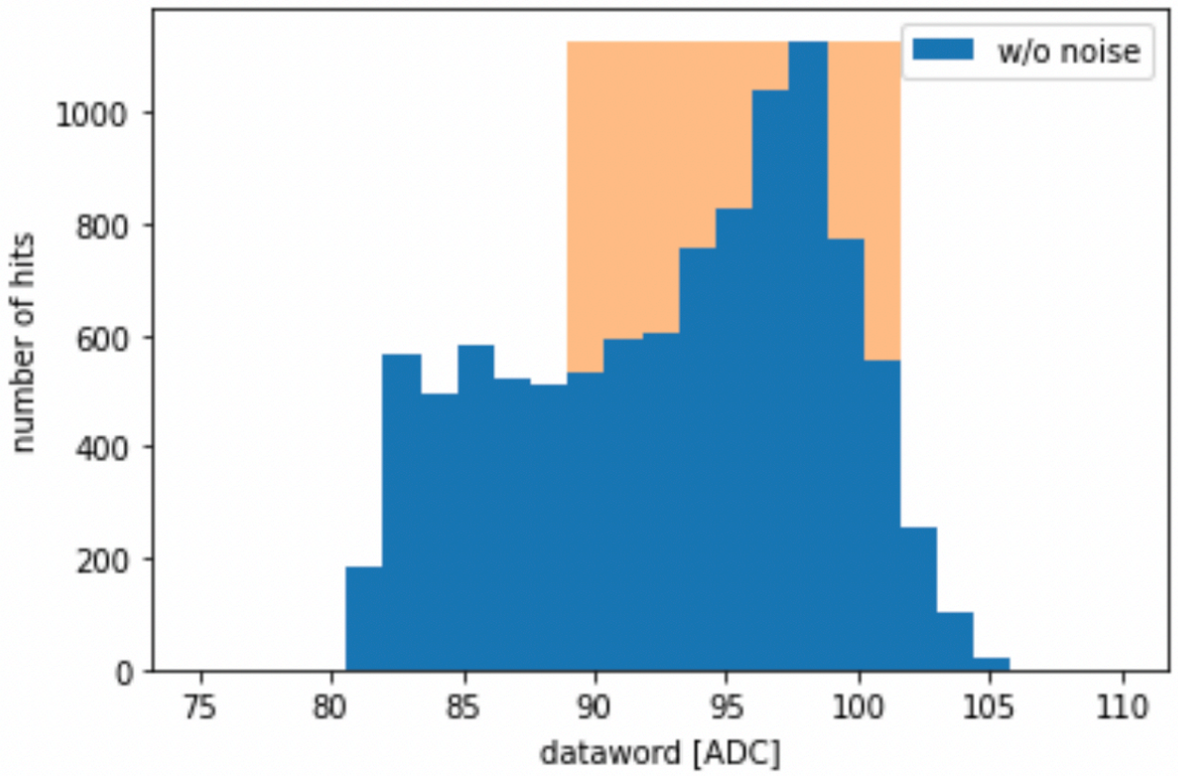
w/o noise
number of hits
dataword [ADC]
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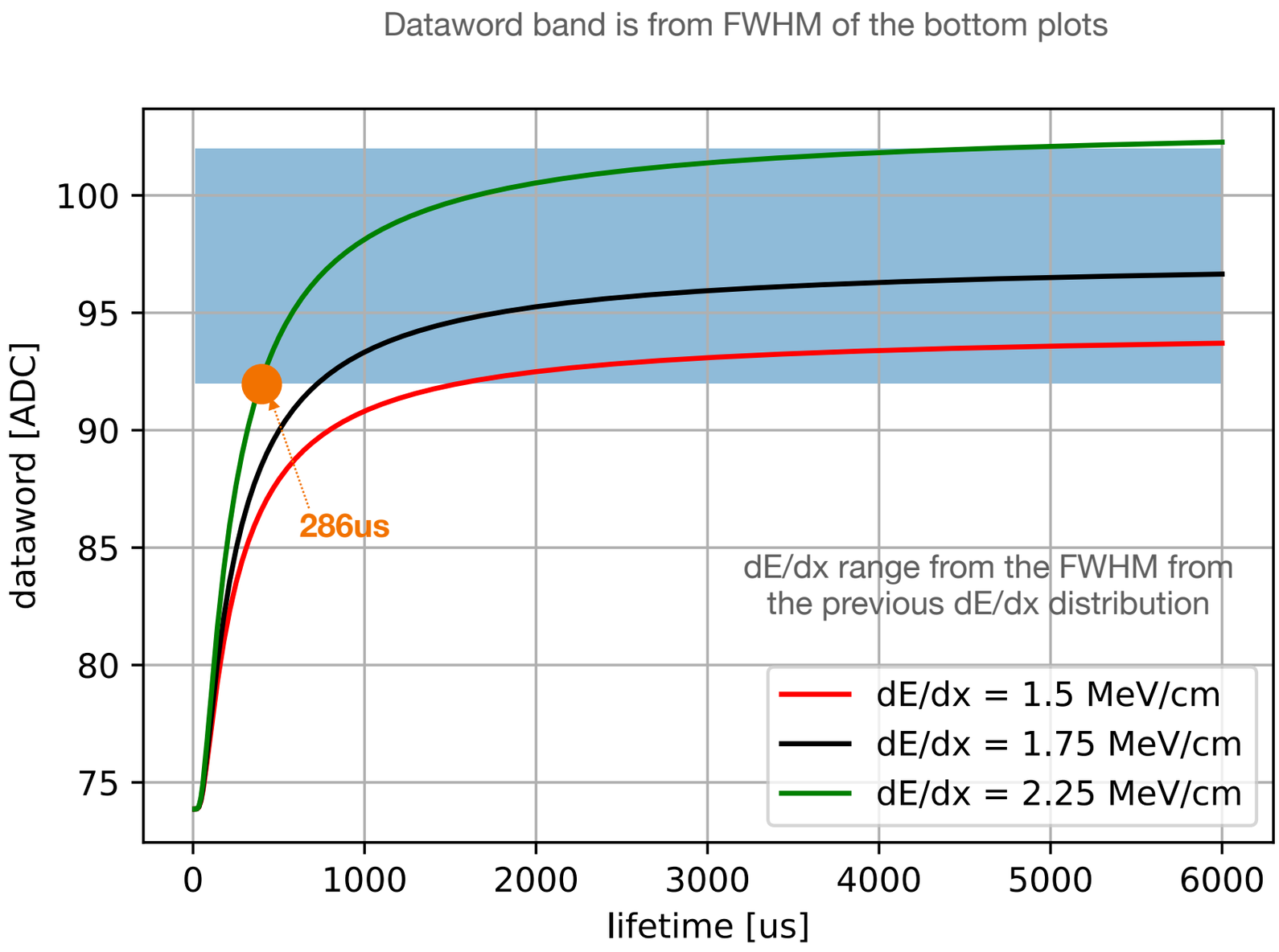

This does not consider the average / batching in the optimizing stage