DCD2/DEPFET source measurements

Ringberg 05/2010

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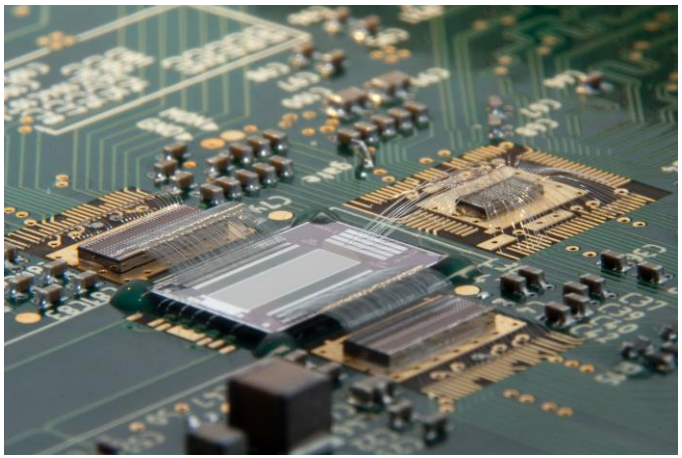
source measurements

- ^{241}Am measurements with
  - DCD2 setup
  - COCG LE matrix (PXD5, ILC type)
  - only 10 drains connected
    → 5 x 256 pixels active area
- speed: 800ns and 96ns row time
- single sampling mode
- frame wise common mode
- dynamic pedestals
- low rate, small area, ineffective readout
  - needs ~24h for ~30k clusters



- remember noise corrections: CDS, row CM, frame CM, dyn.peds
- look at data, correlation coefficients

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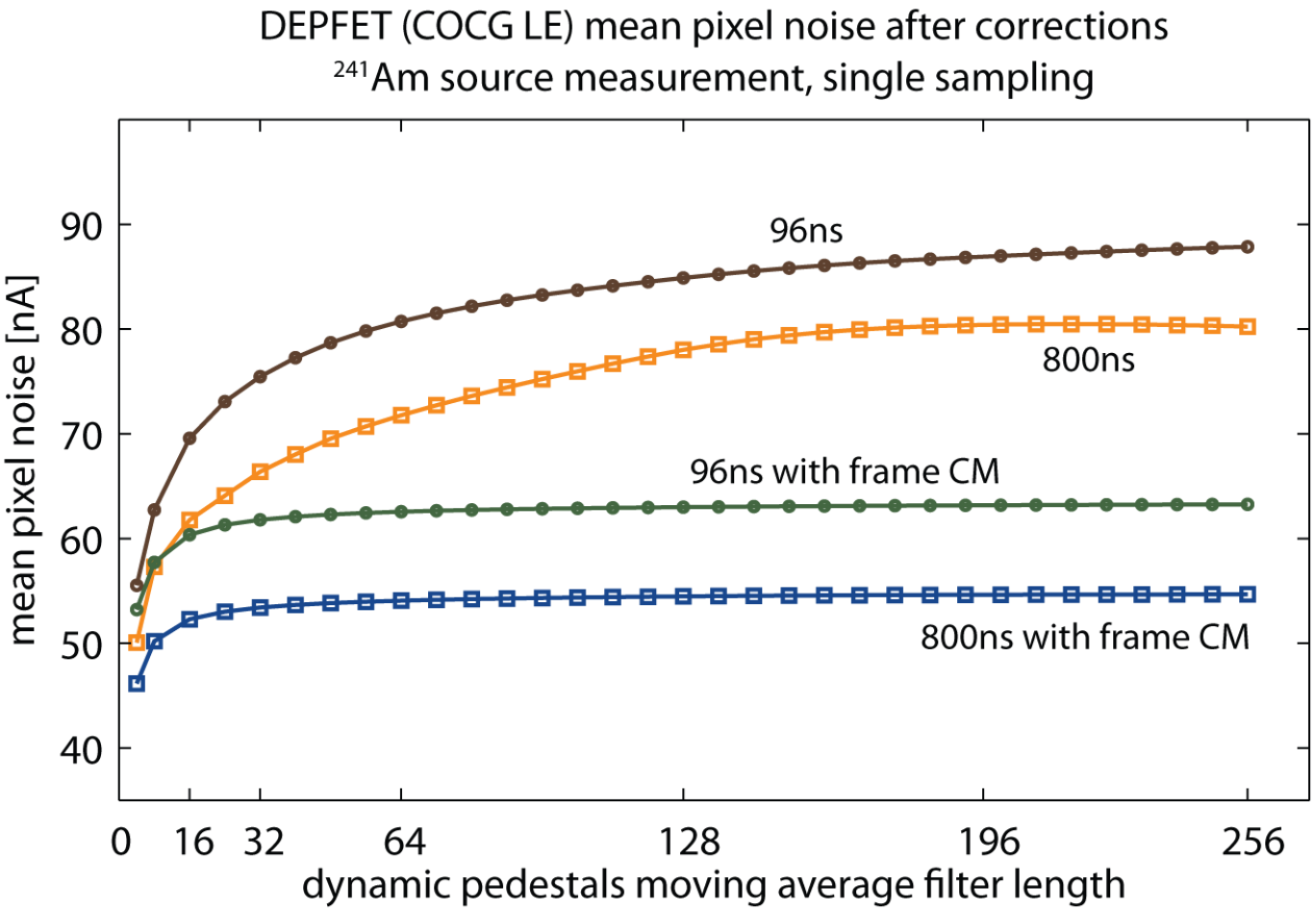
common mode and dynamic pedestals



- pixel noise reduction; for analysis CM and window=128 is used
- side note: pixel values over time highly correlated,
  CM and static pedestals are probably good enough
- row wise CM should suppress noise even better

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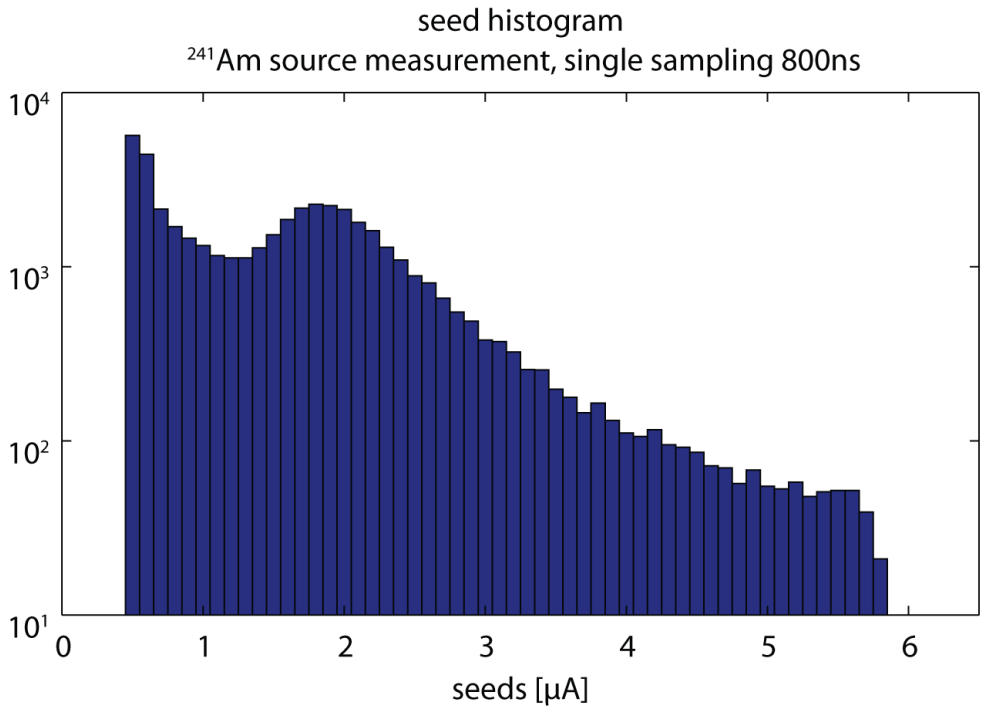
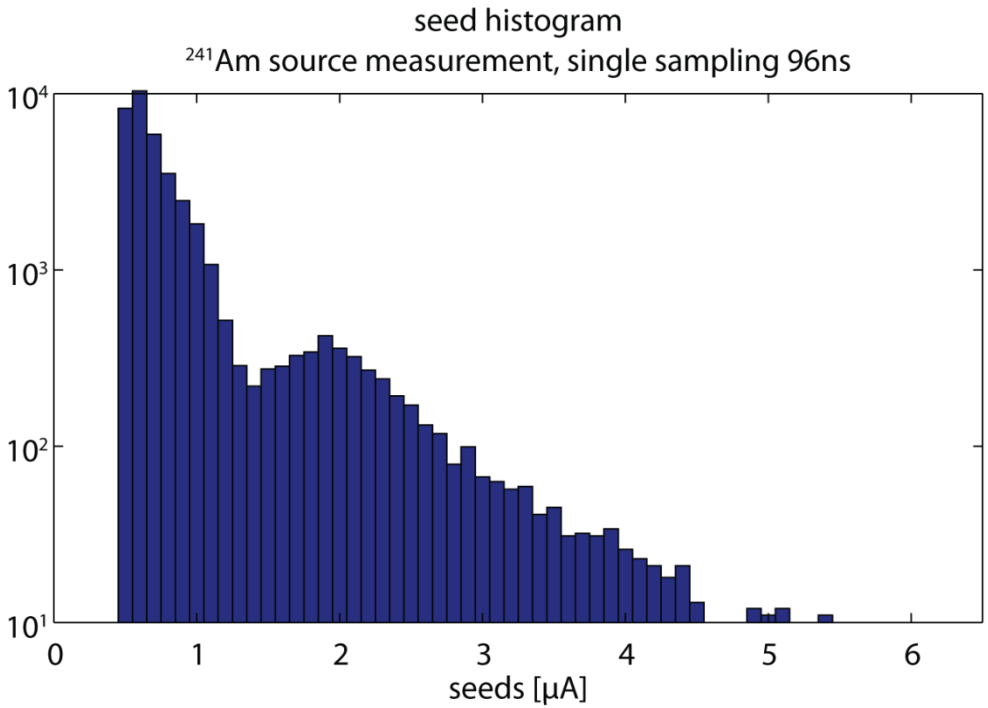
seeds

- use initial cut of 5LSB = 0.5µA
- use seed cut > 1.2µA for clusters





- note for high speed: much more low energy seeds (noise?)

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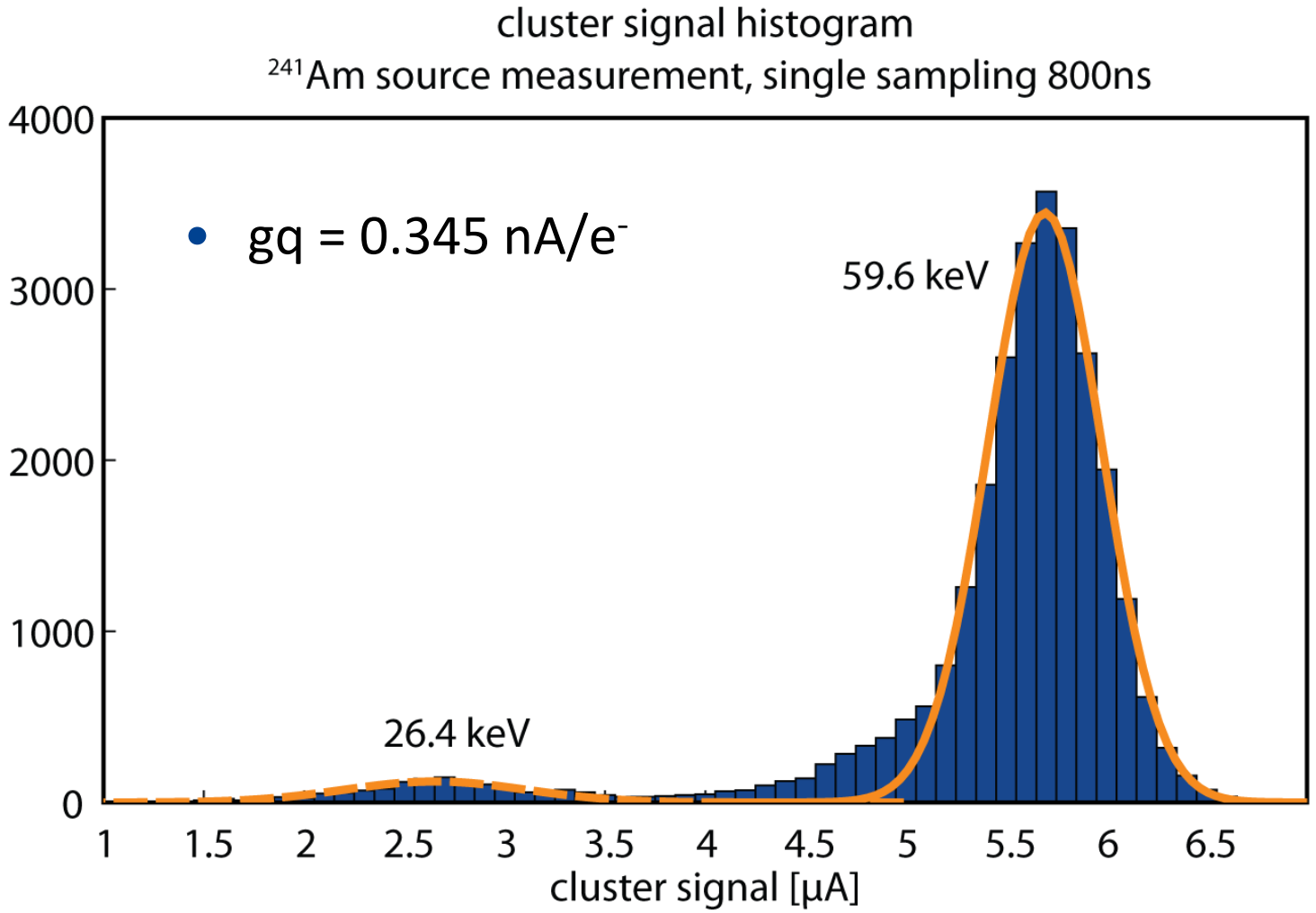
clusters – slow readout (800ns row time)



- 3x3 clusters
- seed cut > 1.2µA; pixel cut > 200nA (2LSB)
- 60 keV peak sigma ~ 820e-

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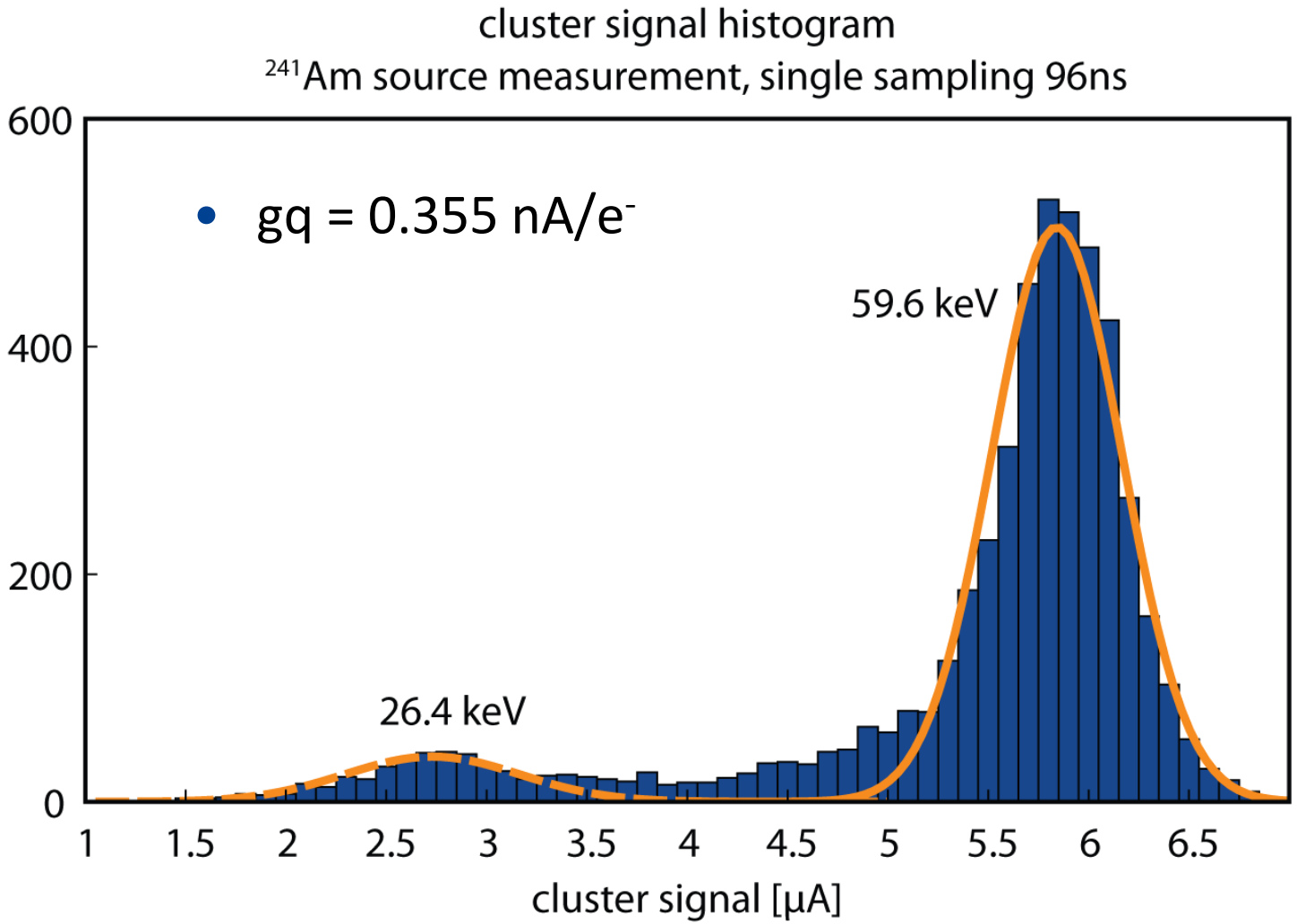
clusters – fast readout (96ns row time)



- 3x3 clusters
- seed cut > 1.2µA; pixel cut > 200nA (2LSB)
- 60 keV peak sigma ~ 900e-

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THANK YOU!

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