



# MiMa Setup: Status report

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and Applications

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# ● Overview



## Hardware for small DEPFET Matrices

- PCBs for PXD5 and PXD6 Matrices

## Change of the DAQ Timing – from continuous to “triggered”

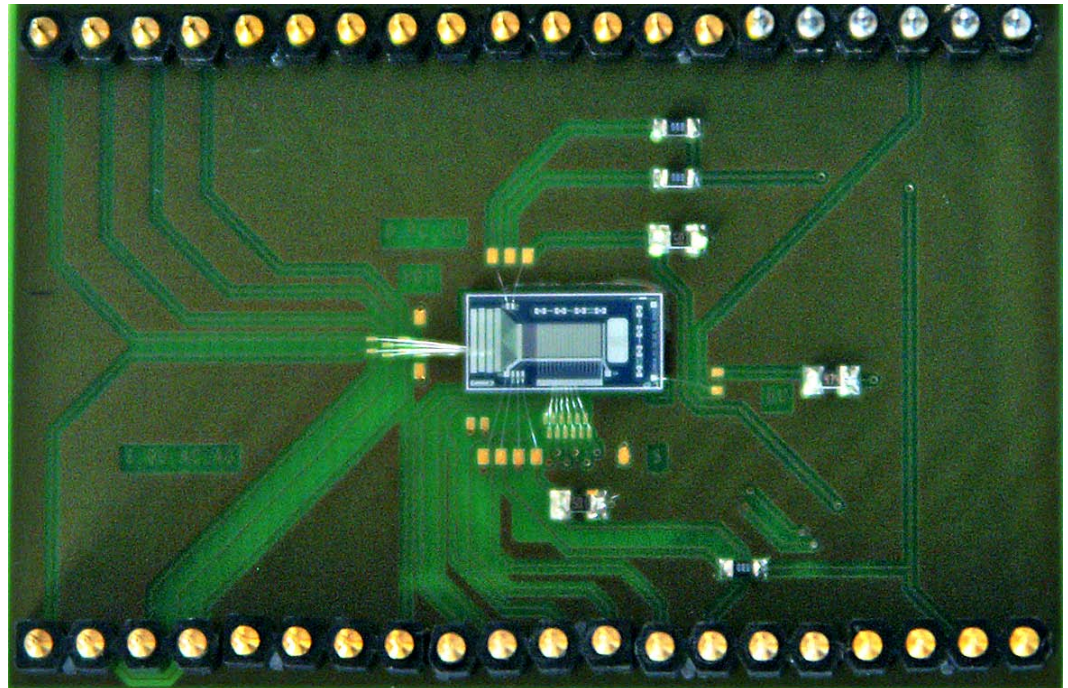
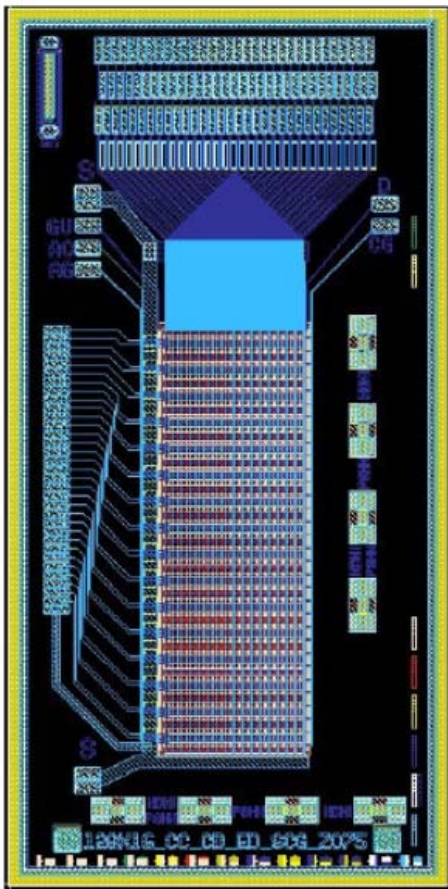
## Noise Measurement

- Pedestal Calculation
- Common Mode Correction (2 pass)

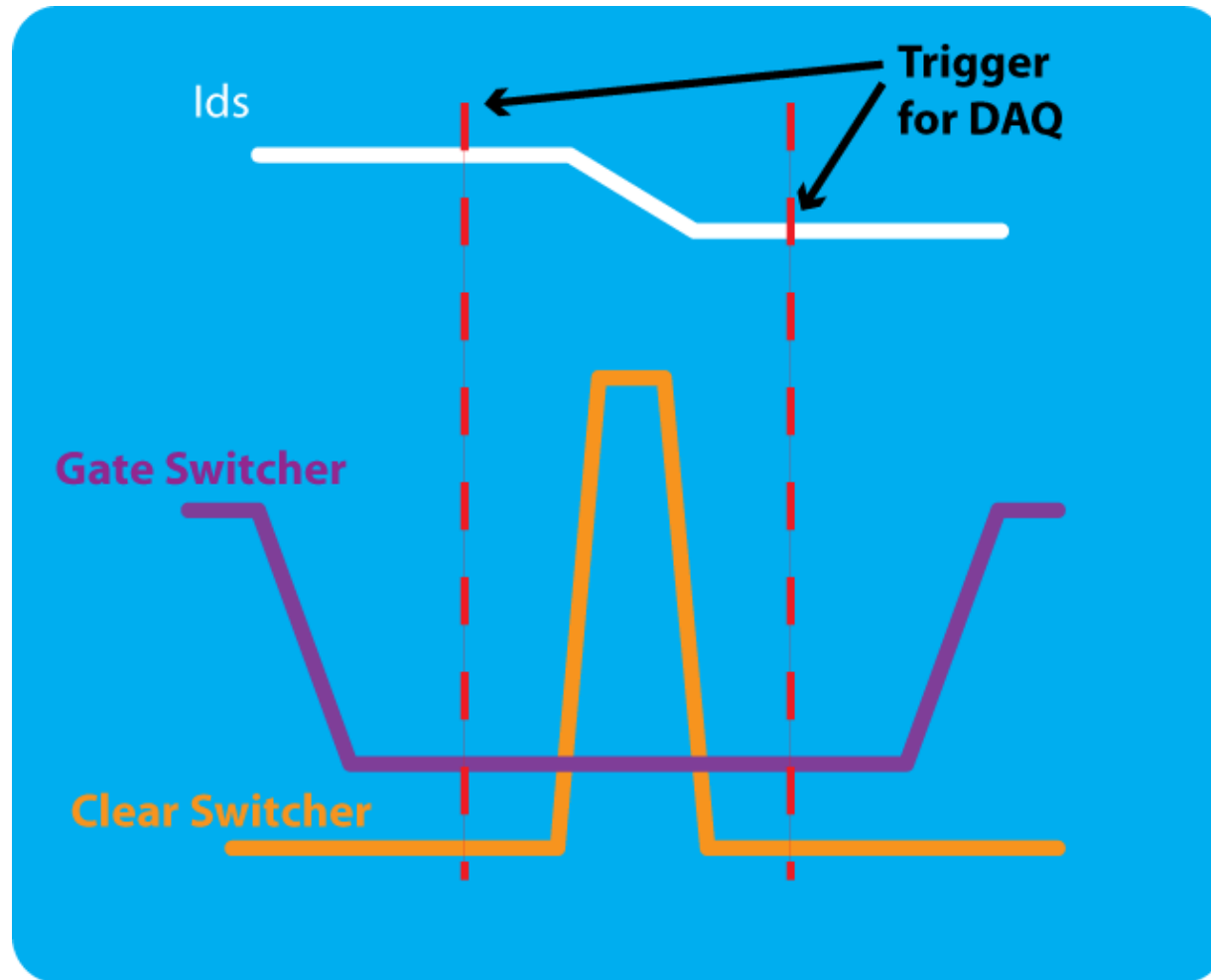
## Source Measurements

# ● Hardware for small Matrices

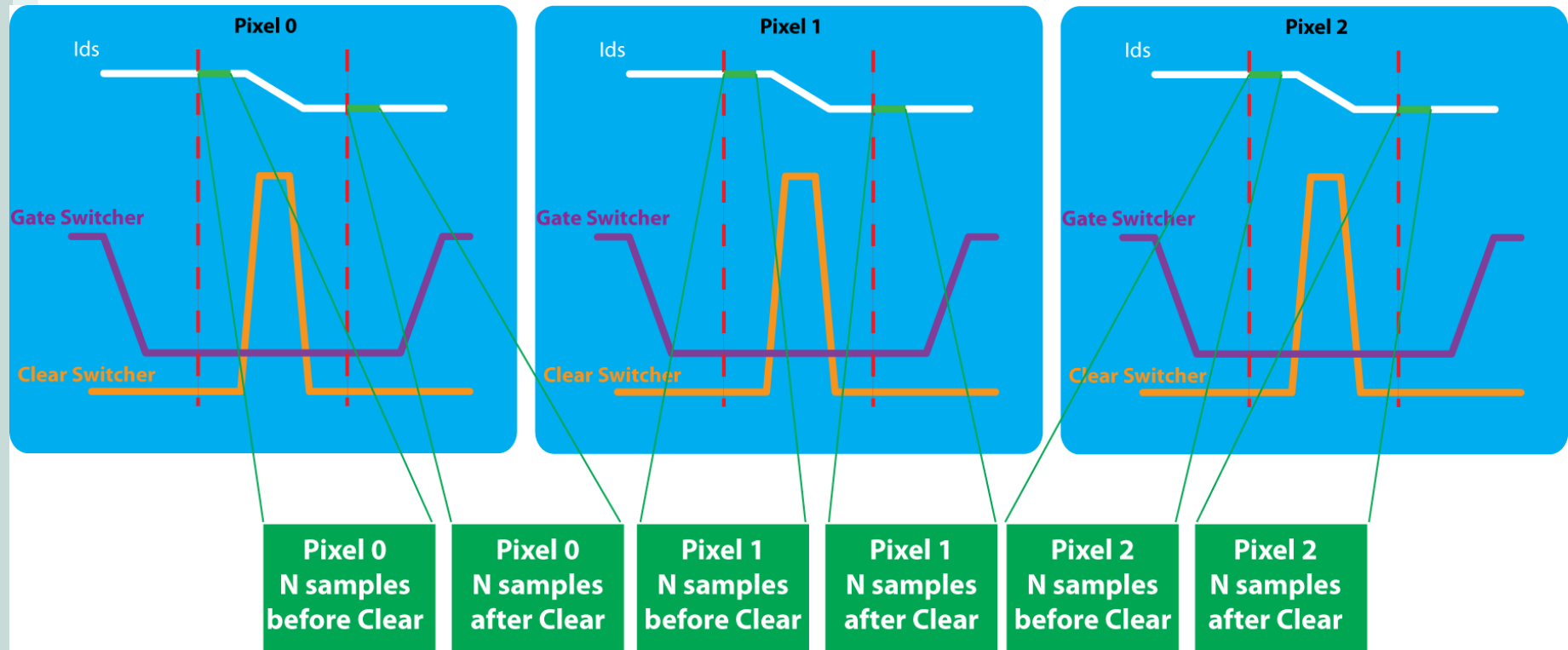
- 40 Pin PCB for testing of small PXD6 Belle and ILC Matrices



- Trigger based DAQ



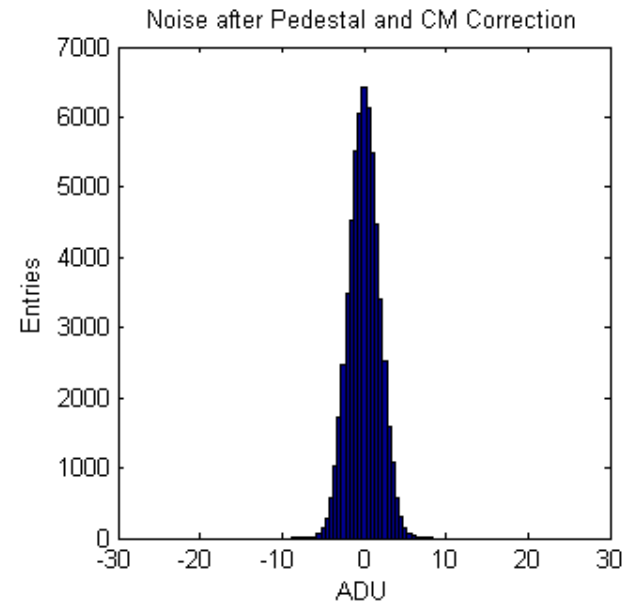
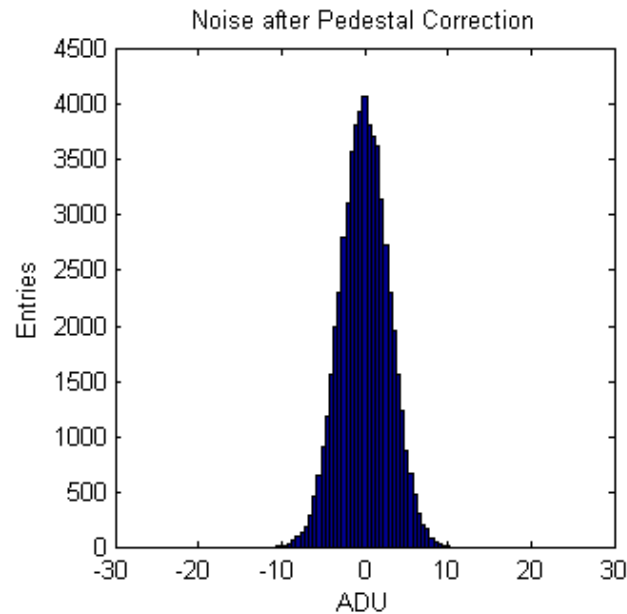
# Window based DAQ



- 48 Pixels can be read out (8 drain channels x 6 gate/clear switcher)
- Begin of frame is indicated with extra trigger
- Time Stamp is recorded for every segment

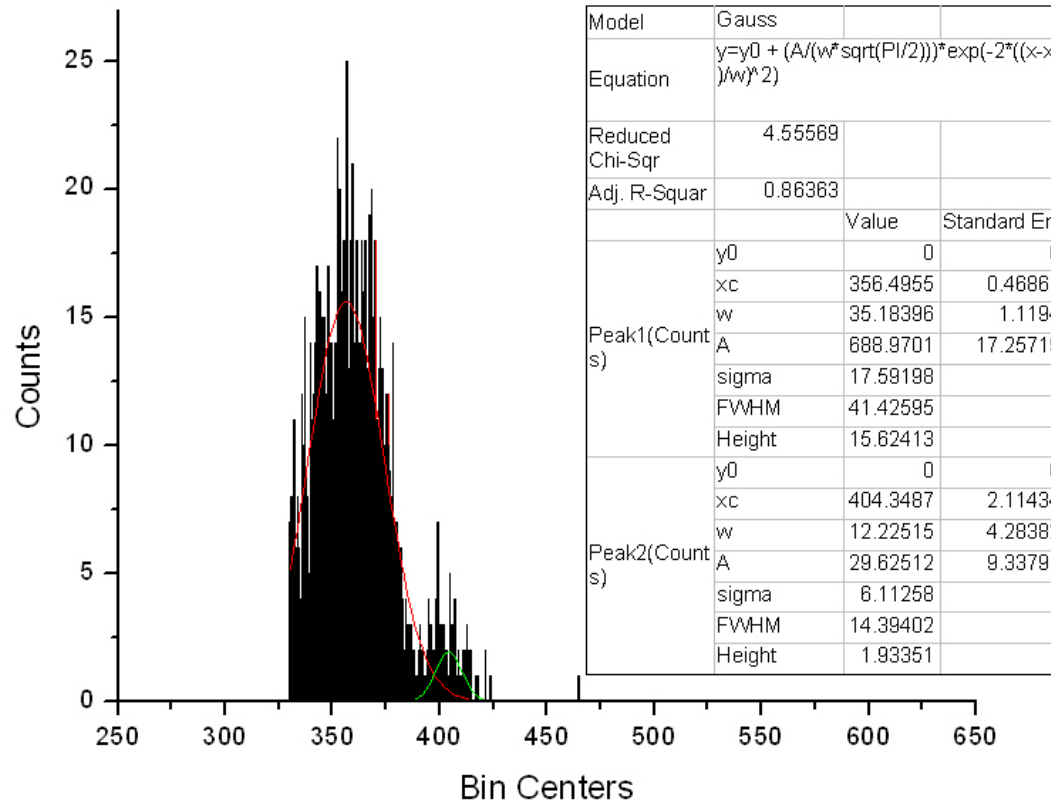
# ● Pedestal and Common Mode Correction

- Hits are removed before Pedestal and Common Mode Correction



$\text{Sigma} = 1.8 \rightarrow$  corresponds to 8 electrons

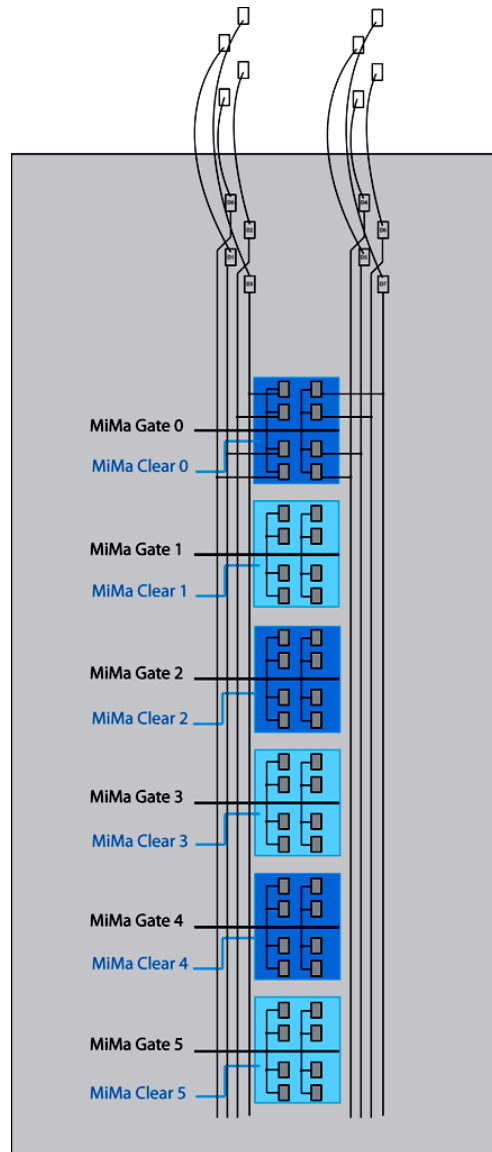
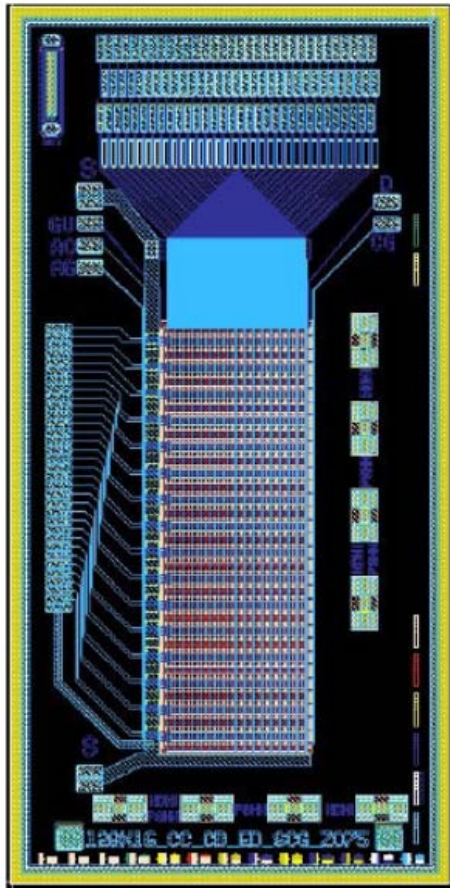
# ● PXD5 Fe55 Spectrum



- $k_{\alpha} = 356$  ADU,  $k_{\beta} = 405$  ADU
- Low statistics – after 9h of running
- Spectrum only of seed pixels – no clustering implemented



# ● PXD6 small Matrices

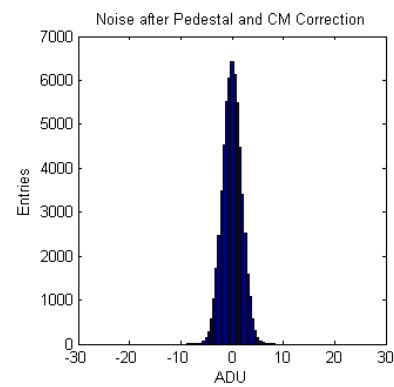
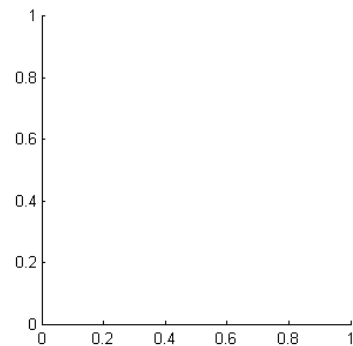
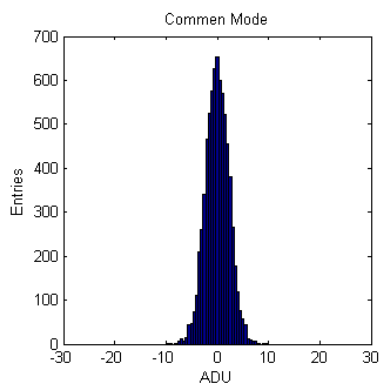
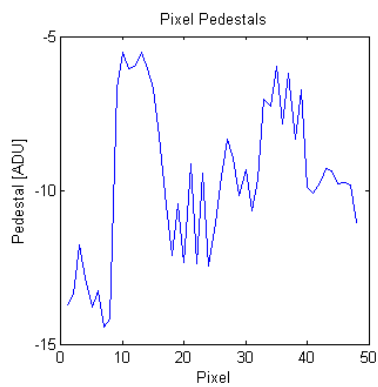
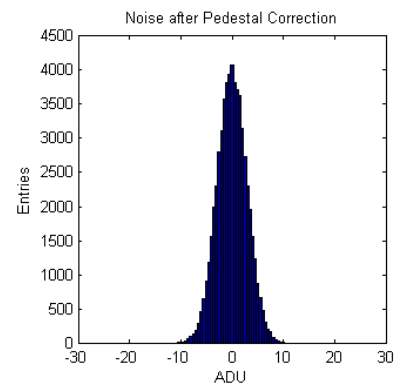
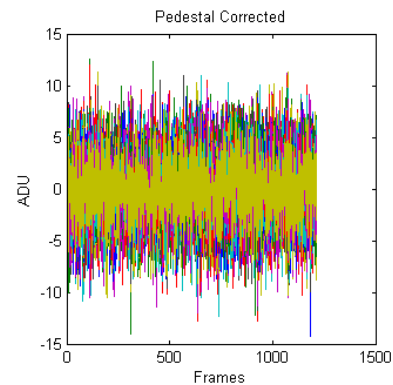
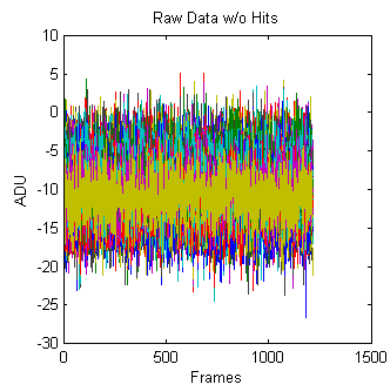
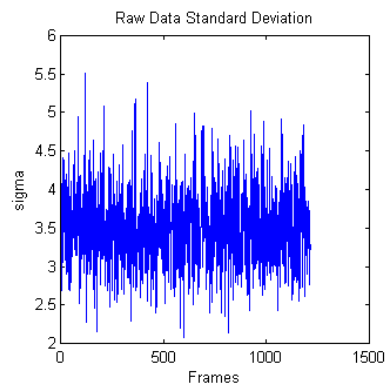


- 4- fold layout results in an array of 2 x 24 pixel for the small Belle-II matrices
- use of seed pixels will allow to measure Fe55 (as with the current PXD5)



# ● Summary

- Hardware is ready for PXD 6
- Noise is at a level of 8 electrons
- Acquiring data for spectrum takes too long  
→ Currently we check how to increase the speed of the DAQ



# ● Noise Measurement

From C. Oswald/J. Scheirich

