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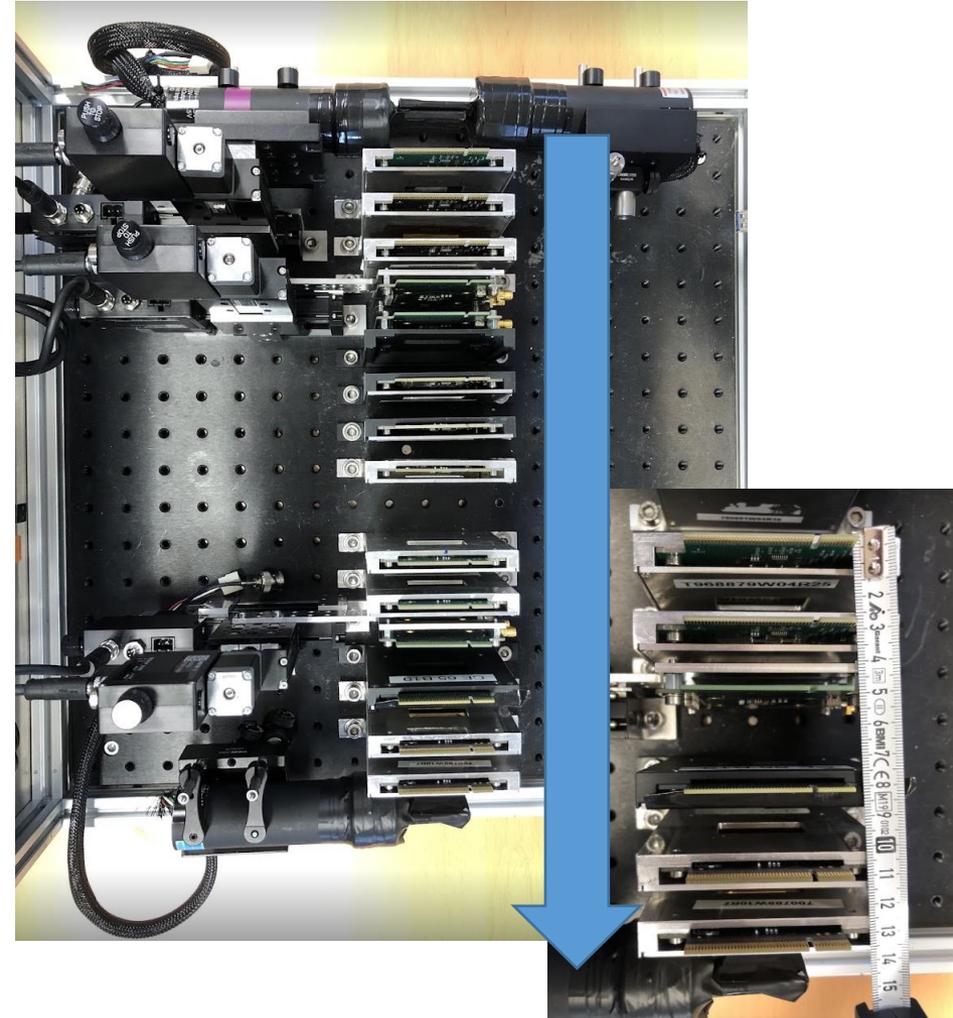
Beam test @ CERN-PS (2022 May) CE65 data analysis with Corryvreckan

Jerome Baudot, Szymon Bugiel, Serhiy Senyukov, Yitao WU

2022.06.08

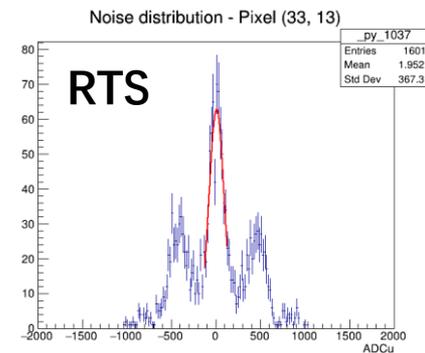
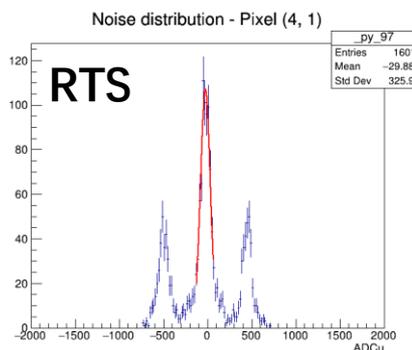
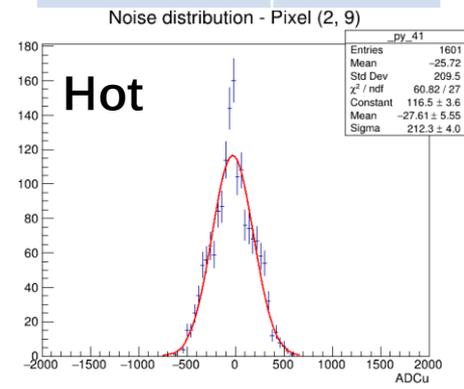
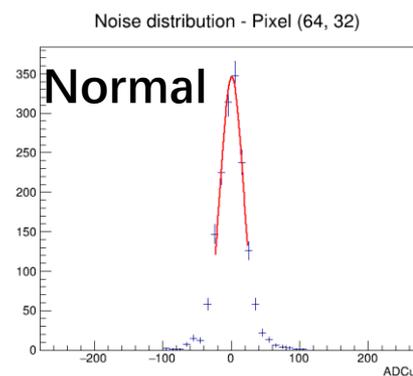
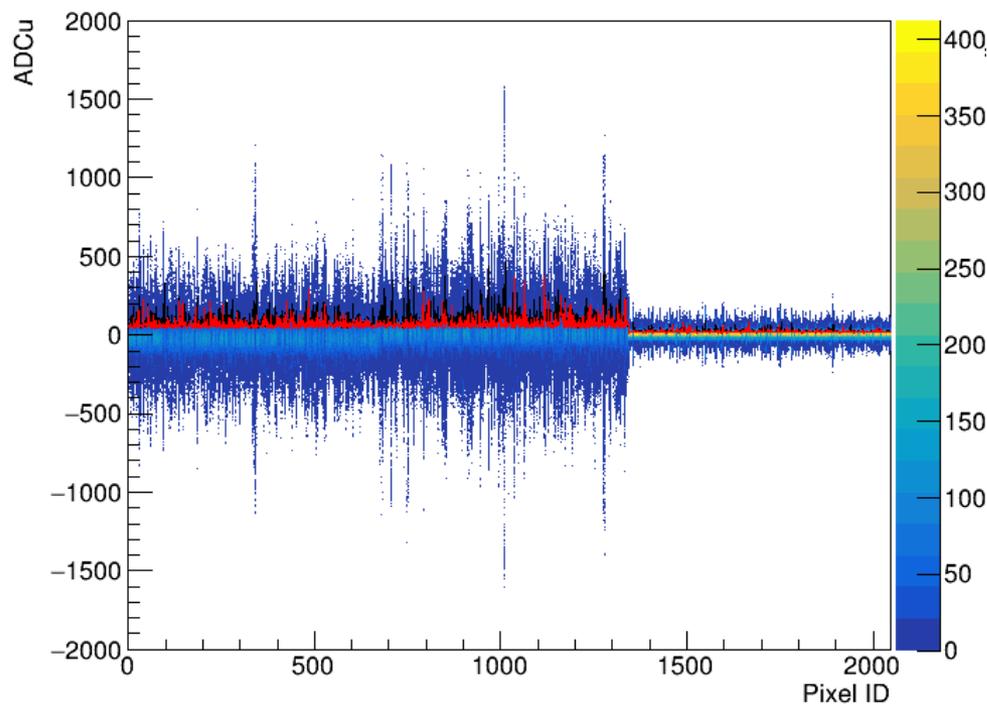


- CERN-PS T10 (2021 Dec.)
- Beam
 - Hadron (π^-) – 10 GeV
- Telescope
 - Trigger: Scintillators / **DPTS**
 - 2 REFS + DPTS + CE65 + 2REFS
- Data taking
 - May 4th – 24th
 - A4: HV=10V, 1, 2, 3, 4V
 - B4: HV=10V, 1, 2, 3, 4V
 - D4: HV=10V, 1, 2, 3, 4, 15V
 - C4: HV=10V, 1, 2, 3, 4V
 - PSUB=-3V, HV=0,1,2,3,4,10V



- B4 HV=10V
 - run187093307_220508093318.raw
 - Samples: 1601 events, 2+2 frames
 - Raw amp. = $fr[-1] - fr[0]$

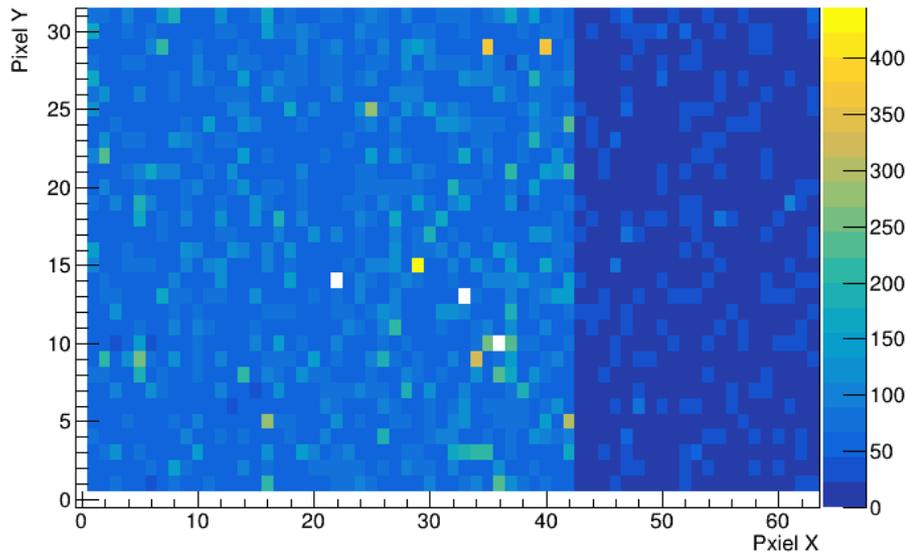
Total pixels	2048
Normal	1802
RTS	124
Hot	122



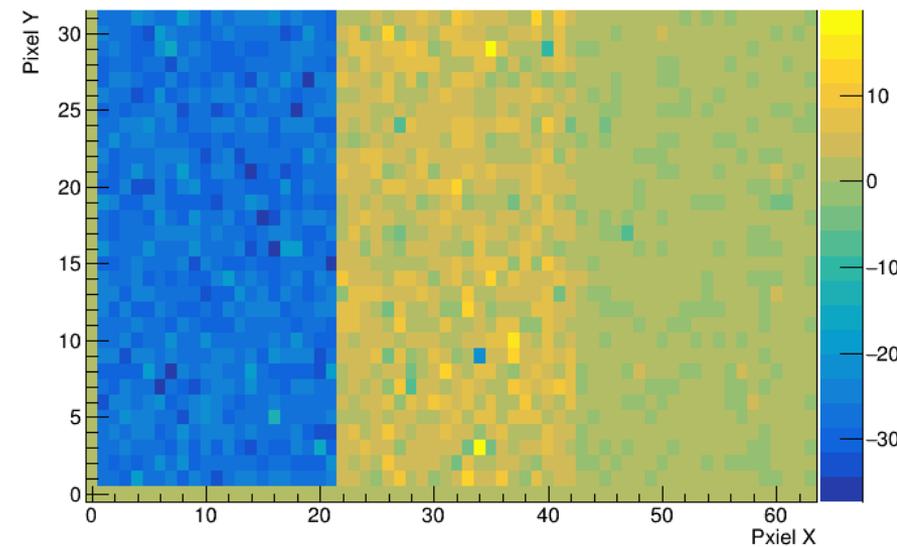
- B4 HV=10V
 - run187093307_220508093318.raw
 - Samples: 1601 events, 2+2 frames
 - Raw amp. = $fr[-1] - fr[0]$
 - Dump map and mask files for analysis
 - RTS, Hot (thr: [200, 200, 30])

Total pixels	2048
Normal	1802
RTS	124
Hot	122

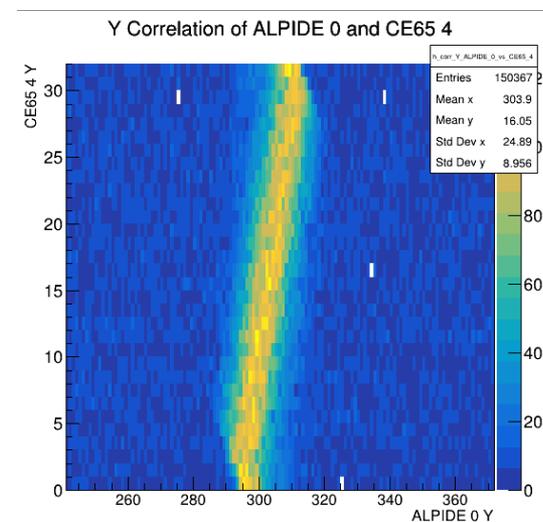
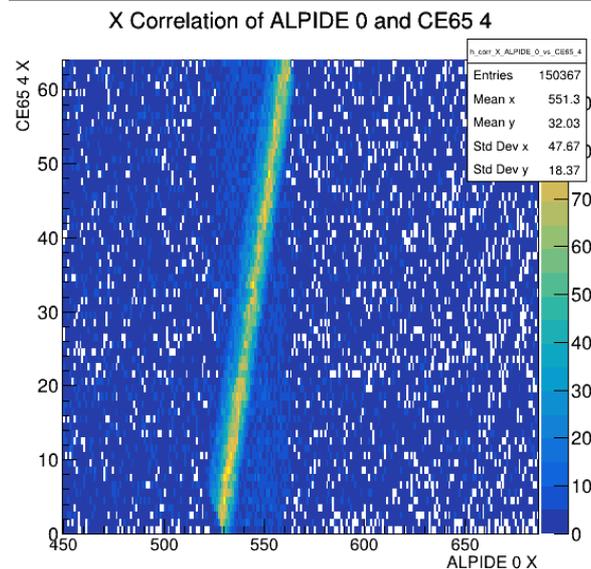
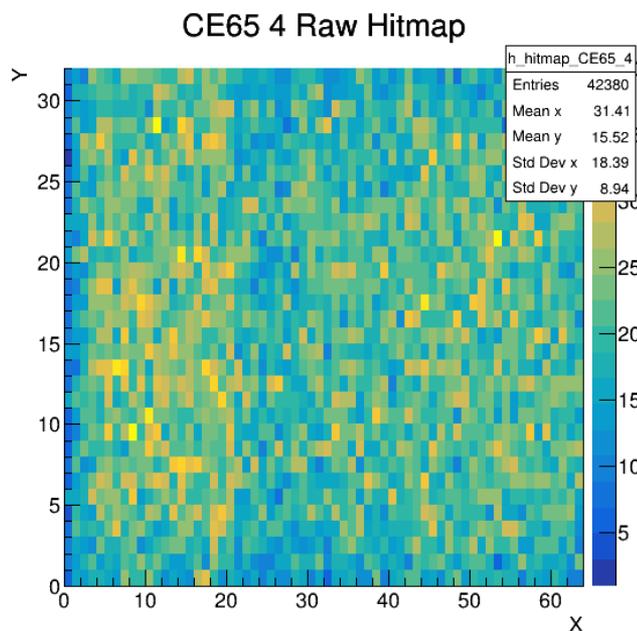
Map of pixel noise amplitude



Map of pixel pedestal



- B4 HV=10V
 - run187110733_220508110744.raw
 - Sample: 50k events
- **Data taking**
 - DPTS trigger scan from X:64 -> 0
- **Correlation with reference**





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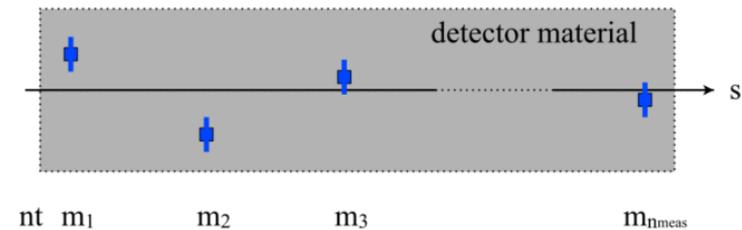
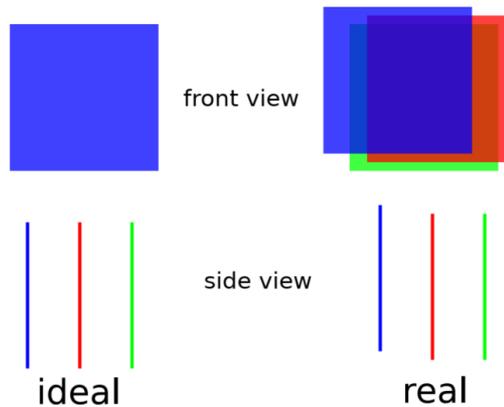
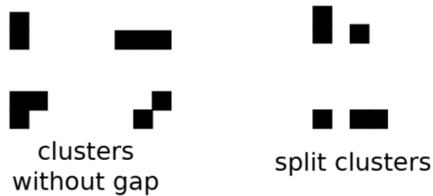
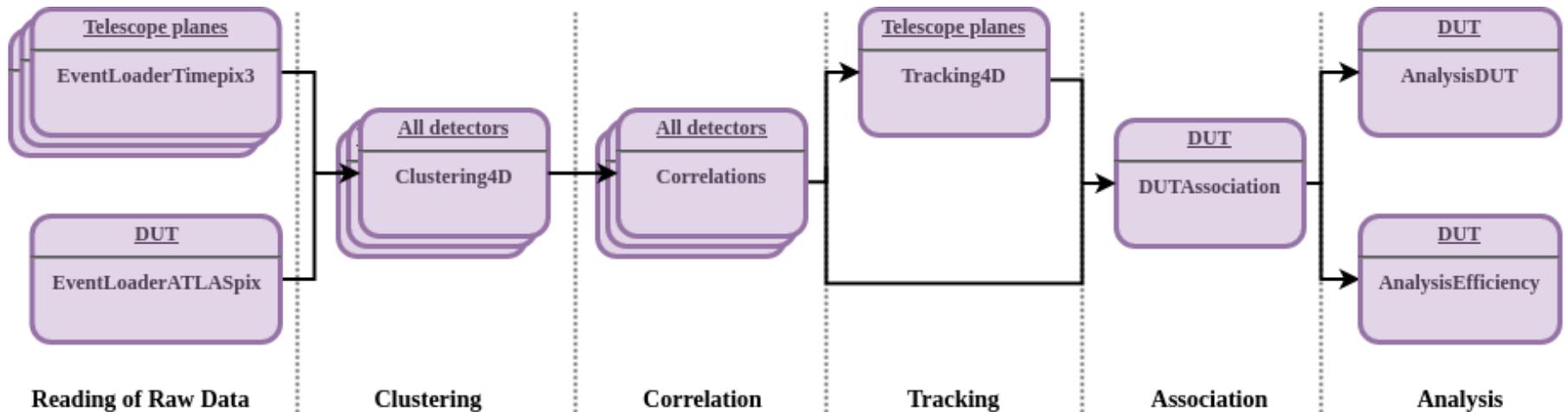
Introduction

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- Data analysis – corryvrekán



- Document for analysis toolchain: [CodiMD](#)
- Baseline & Noise QA
- Corryvreckan
 - ClusteringAnalog
 - ❑ Dynamic pedestal/noise map
 - ❑ Regional common-mode shift
 - ❑ Cluster pattern recognition
 - ❑ AnalysisDUT, AnalysisEfficiency -> AnalysisCE65
 - Cluster analysis (plots for associated clusters as ClusteringAnalog)
 - To support sub-matrix
 - Spatial resolution, efficiency, in-pixel performance