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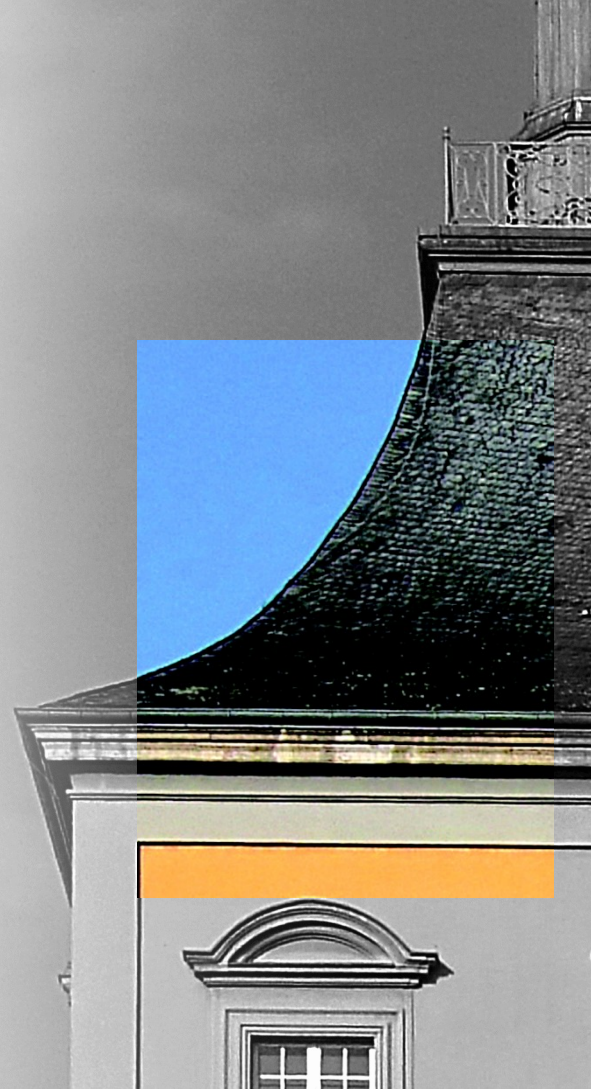
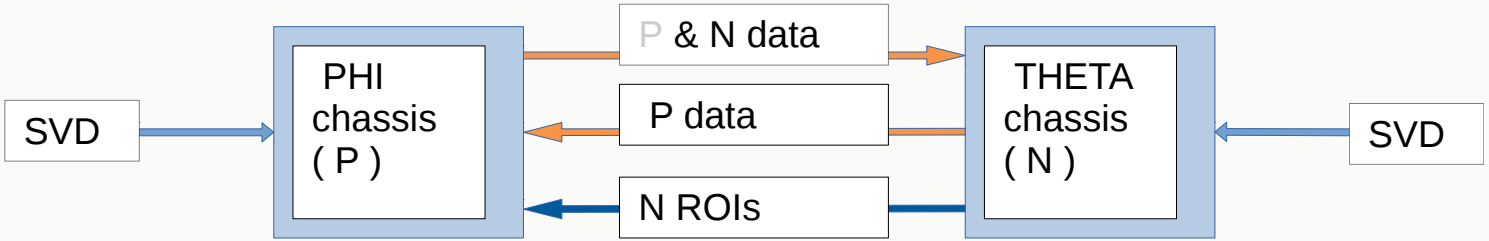
DATCON STATUS & PLAN



FULL SETUP

- 13 concentrators in total , connected to all 52 FTBs
- 2 independent tracking
- 2 optical links between chassis (stable)



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BEGINNING OF PHASE3

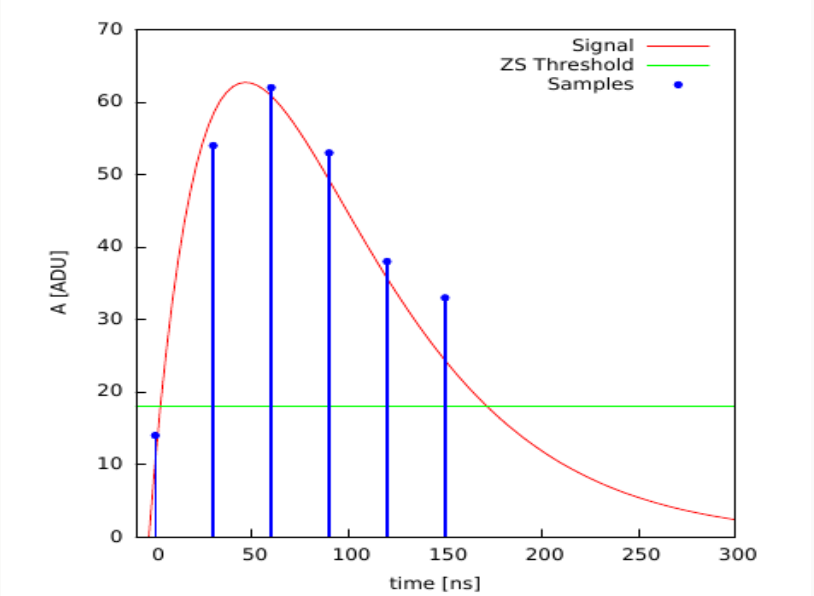
- Made the full chain working, from SVD to ROIs
- Stability problem requiring reset
- Link loss with SVD and/or ONSEN when starting new run
- Mistake in the firmware found afterward and fixed:
  - Wrong pixel position for ROIs calculation
  - Clock domain crossing
  - Synchronization issue between firmware modules

STRIP FILTERING IMPROVEMENT

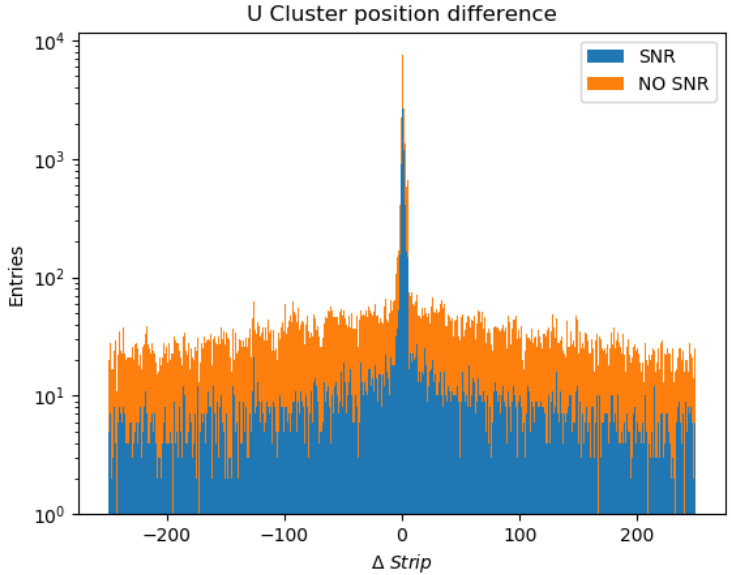
- Previously:
  - If highest sample is higher than fixed threshold

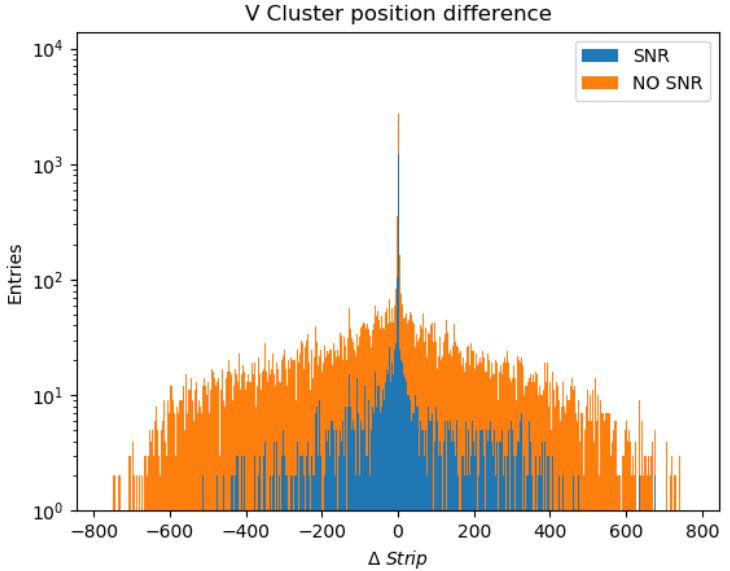
    the hit is accepted

- New approach
  - Get dedicated threshold for noisy strip
  - Th = 5 x noise
  - Compare highest sample with new threshold
  - Load into FPGA

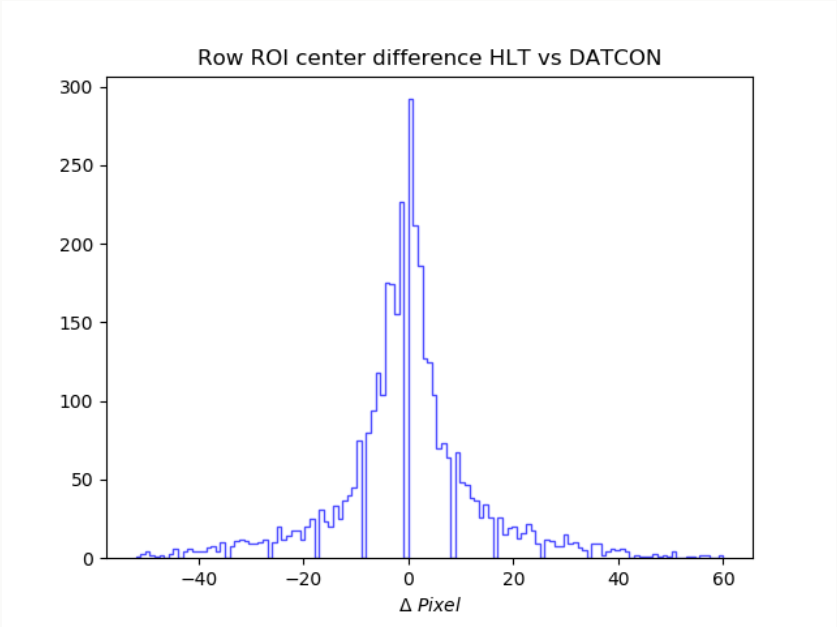


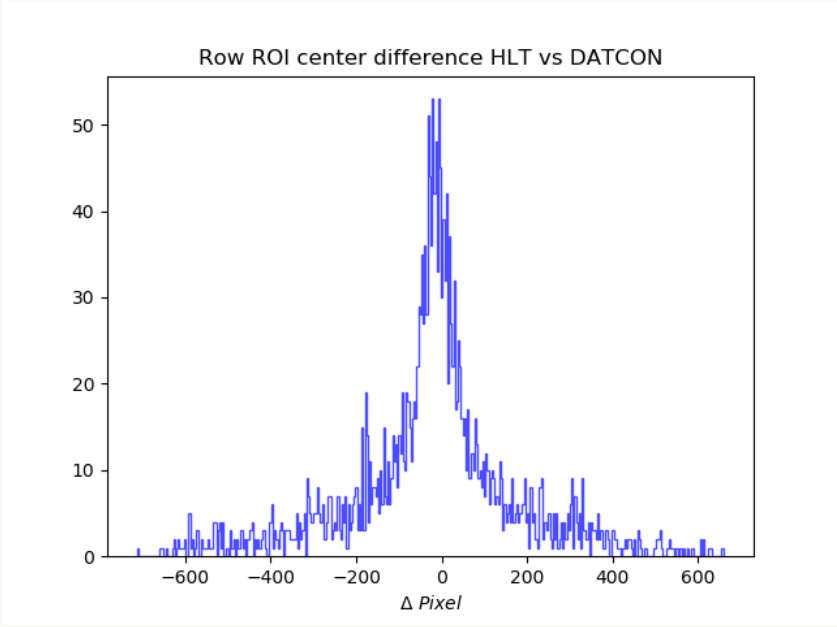
OFFLINE PHASE3 DATA





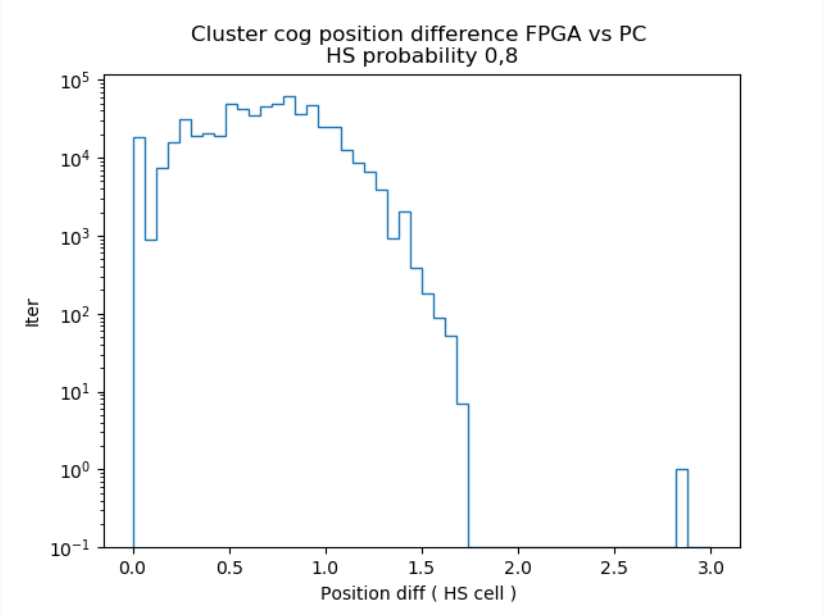
OFFLINE PHASE3 DATA





HOUGH SPACE CLUSTERIZER

- Test HS clusterizer
- Randomly generated HS are sent to the FPGA
- Clusters sent back and compared
- Example:
  - 10K HS, 600K clusters
  - Save only if 4<clust_size<10



CONCLUSION AND UPCOMING PLANS

Spring phase3

- Most of the time testing with one chassis setup
- For both sides, track candidates are extrapolated as straight line. ROI only for layer 1
- HS : 128 x 64 for Phi: [-PI, PI], 64 x 64 for Theta: [0, PI]
- Show no problem with ROIs
- Full setup debugging took longer than expected
- Since last B2GM , N-ROIs to P-chassis sending fixed
- Full setup running with remaining stability issues

CONCLUSION AND UPCOMING PLANS

Plans , starting this week

- Resume operation with updated firmware
- Send out and save track angle, not only ROIs
- Understand and fix the FTB issue discussed few months ago. Katsuro-san is preparing a test setup at KEK
- Improve HS cluster precision
- Extrapolation to layer2

- Need to think about better HS building
- Increased number of tracks makes HS unusable
- Build a test firmware to re-process run data on hardware

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DEPFET

Active Pixel Detector

Belle II

bmb+f - Förderschwerpunkt

Elementarteilchenphysik

Großgeräte der physikalischen Grundlagenforschung

THANK YOU