

## STATUS OF DATCON

## B.DESCHAMPS, J. DINGFELDER, C. MARINAS, C. WESSEL, UNIVERSITY OF BONN















#### <u>Concentrator</u>

- Latest firmware for FADC V4 mixed P and N data
- Link and data synchronization never stuck (questioned last workshop)
- Running stable
- Validated for PHASE3



## • Tracking

- Parallel Hough space building tested and stable
  - 64x64 matrix
  - Limitation to 256 incoming hits
- Hough space clustering tested and stable
  - Cluster size from 3 to 50 cells
  - Timeout in case of dense Hough space
- Extrapolation tested and stable



- ROI creation tested and stable
  - Fixed size of 40x40 pixels
- ROI transmission to ONSEN
  - Rare issues regarding the number of ROIs sent and multiple identical event id
- Full firmware running , including all the sub parts in development before phase2



- Every component of the firmware was successfully tested
- Communication with ONSEN:
  - No missing event, no framing or format error
  - Happened rarely : too many ROIs, double event
- DATCON has been included into global run control

- DATA not yet analyzed
- (Seems that there are no data...)

# UNIVERSITÄT BONN





## **ONGOING PHASE3 DEVELOPMENT**

## <u>System scale up</u>

- SVD strip mapping conversion (XML to verilog LUT ) automated
- All concentrators with correct oscillator
- All 48 FADC outputs generated by simulated event in BASF2
- Complete hardware simulation including 48 FTBs, 12 concentrators, 2 trackings
- Data properly distributed to PHI and THETA tracking



## **ONGOING PHASE3 DEVELOPMENT**

#### <u>Next steps:</u>

- Increase Hough space dimension (cells ) and range (angle)
- Extrapolation to PXD
- More efficient way to combine Phi and Theta ROIs
- Christian working on BASF2 simulation as close as possible to hardware. Use same float to fixed point rounding, pre-defined Hough space dimension, cluster finder ...



- 10 AMC v3.1 (Concentrators) are in Bonn and have to be sent or brought to Japan
- 3 of these AMCs have network problem
- 4 are already at KEK, 12 needed, 11 fully functional
- Will ask IHEP for information and maybe replacement



- 1) Get connection from FADC/FTB in B4 to DATCON in eHut
- 2) Fibers to be connected on TOP of BELLE. Connection from FADC/FTB rack to PXD patch panel. Slot reserved
- FWD 18+5 fibers, BW 30+5 fibers
- In eHut, connection from PXD patch panel to DATCON
- Need to measure, buy and install
- Test have to start as soon as possible



- DATCON was running stable during phase2
- Rare issues happened with the ROIs sender to ONSEN
- Included in global run control
- PHASE2 data have to be analyzed and parameters adjusted
- Implementation of BASF2 hardware-like simulation
- Phase3 firmware under development
- Expand slow control to 14 boards
- Bring remaining hardware to KEK
- Finish installation
- Start testing communication with all components



# Thank you