IST test stand @ UIC

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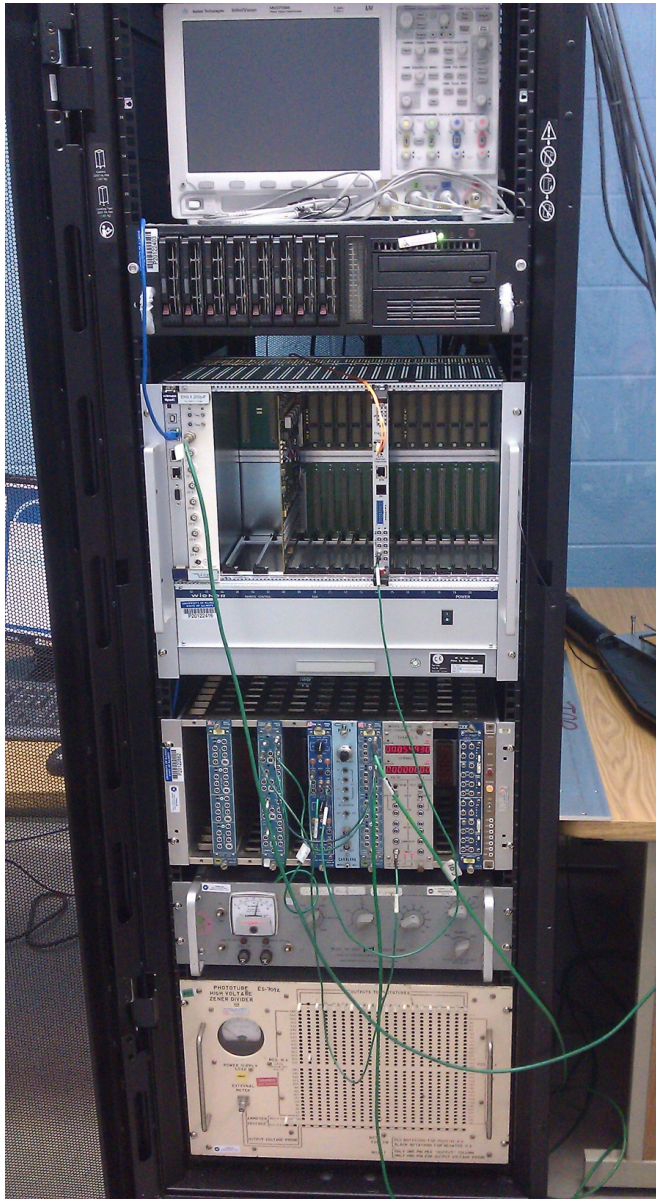
(UIC)

Outline

- IST test stand @ UIC
- Test stand checking

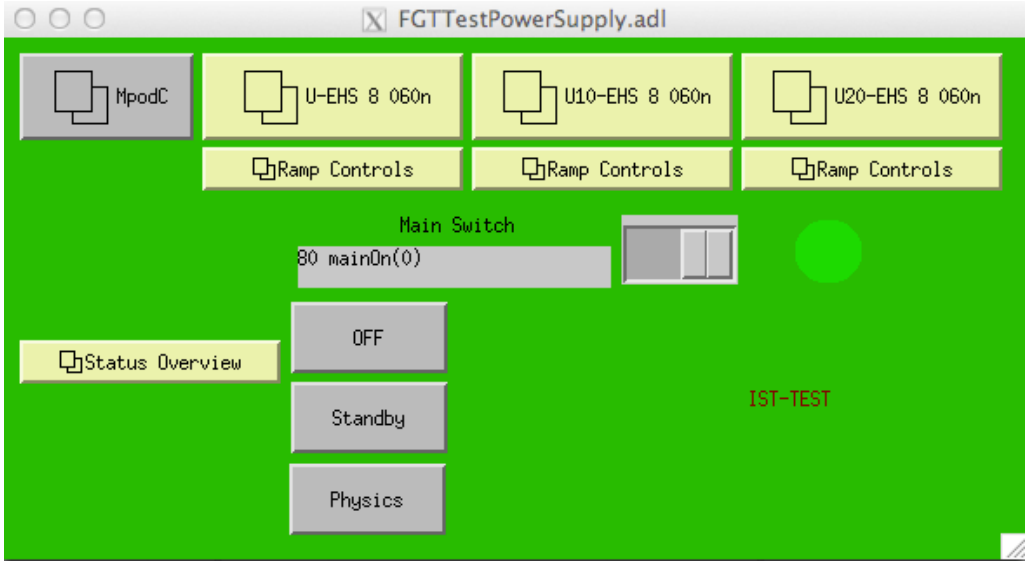
IST test stand @ UIC



IST test stand at UIC

1. 8’ X 8’ clean room
2. Test stand setup
   - ☑Hardware:
     1. IST readout crate
     2. Sensor bias power supply
     3. ARM boards, ARC board, ABC boards, PPB boards, T-boards, cables
     4. DAQ PC
     5. Cosmic trigger
   - ☑Software:
     1. DAQ software (cvs)
     2. Slow control
     3. Analysis code (ARMdisplay.C, written by Gerrit)
3. IST stave prototype (IST-04A) connected for cosmic run

Slow control



MPOD

Global Status

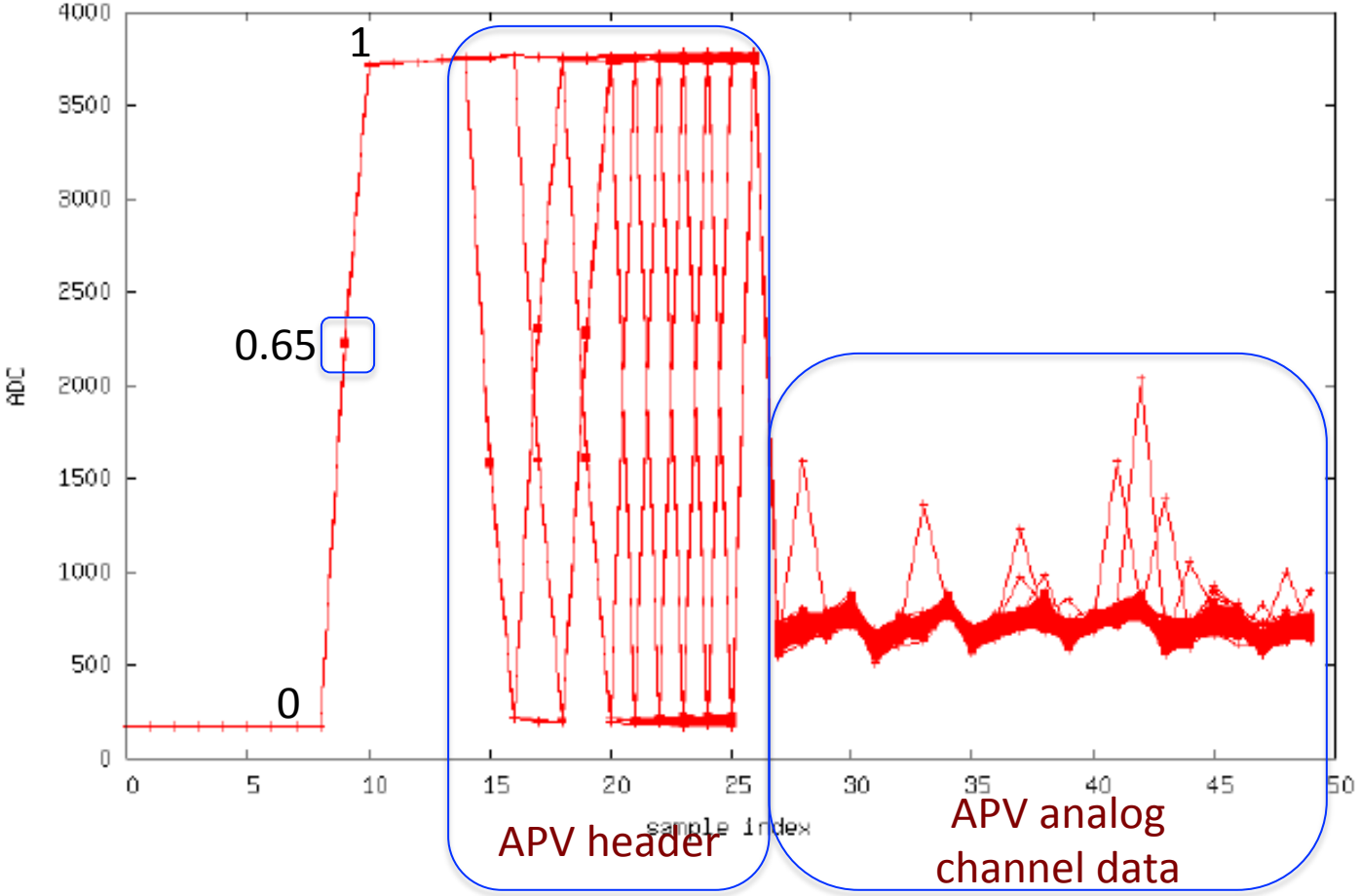
Mainframe Status	ON

Output Channels

Channel	Voltage	Current	Measured Sense Voltage	Measured Current	Measured Terminal Voltage	Status
U 0	60.000 V	10.000 mA	59.999 V	0.5 uA	59.999 V	ON
U 1	0 V	10.000 mA	65.88 mV	0.8 uA	65.88 mV	OFF
U 2	0 V	10.000 mA	29.328 mV	0.1 uA	29.328 mV	OFF
U 3	0 V	10.000 mA	69.90 mV	0.8 uA	69.90 mV	OFF
U 4	0 V	10.000 mA	61.349 mV	1.0 uA	61.349 mV	OFF
U 5	0 V	10.000 mA	56.069 mV	0.6 uA	56.069 mV	OFF
U 6	0 V	10.000 mA	55.394 mV	0.7 uA	55.394 mV	OFF
U 7	0 V	10.000 mA	39.099 mV	0.3 uA	39.099 mV	OFF

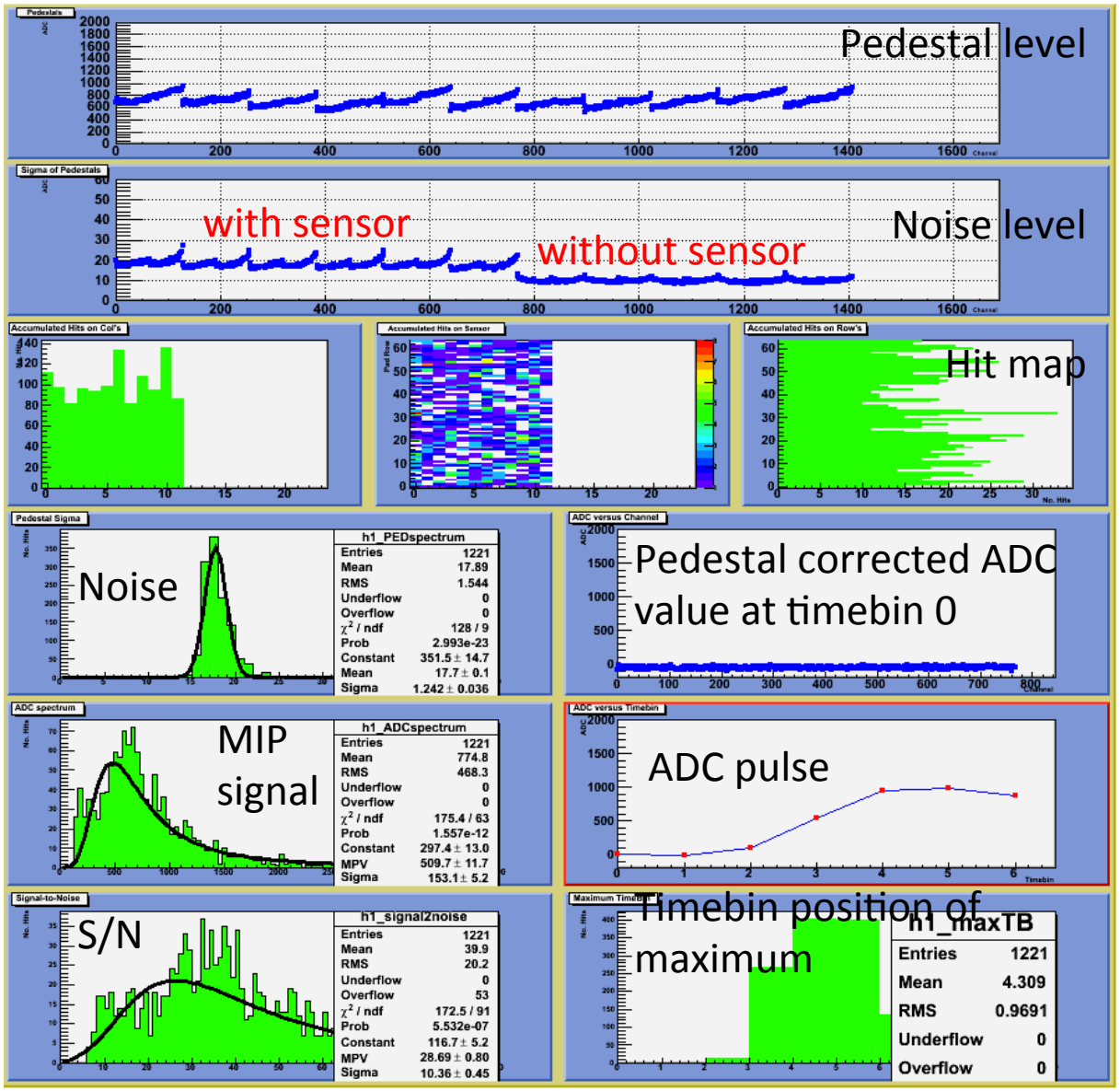
Test stand checking – VPHASE_ADC

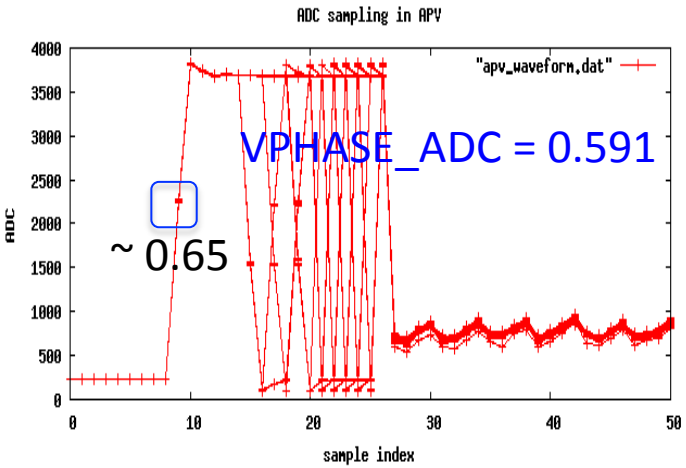
The test stand @UIC is identical to the one @ BNL except for length of signal cables. The parameter VPHASE_ADC setting for APV is sensitive to the cables' length.
As the APV ADC timing tuning method suggested by Gerard, the sampling phase for ADC should be close to the case as shown in Figure as below:



The first sample of a transition from 0 to 1 needs to be at 0.65.

Cosmic test @ UIC

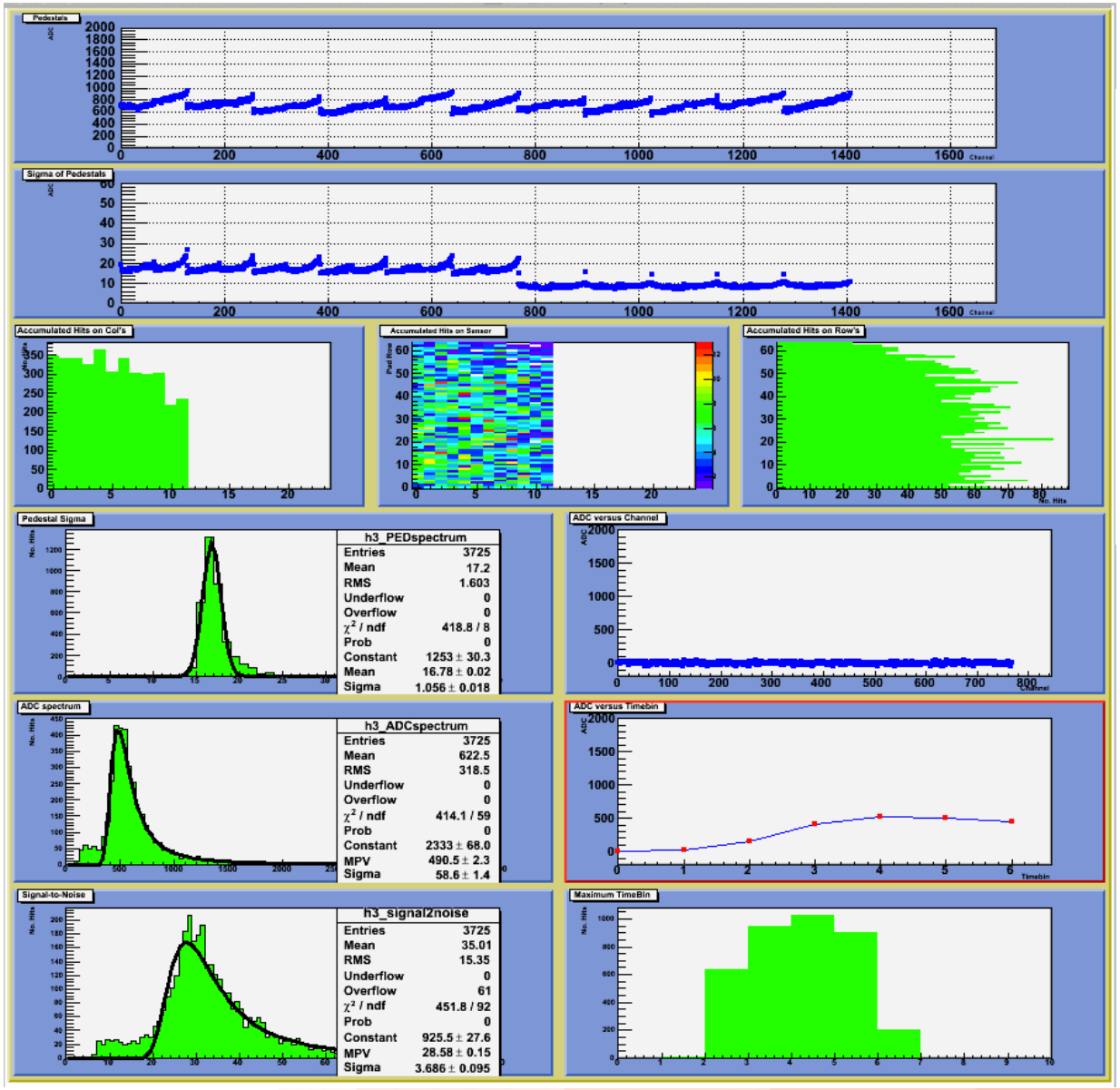




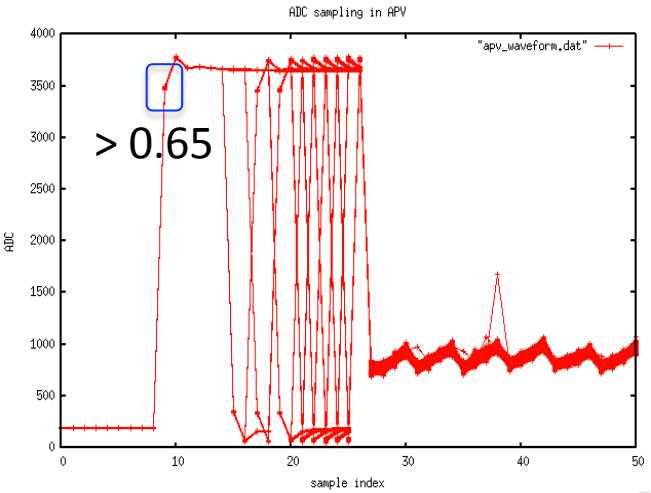
Compared to the results taken at BNL (see next slide):

1) The pedestal and noise keep at the same levels (using the same analysis code).
2) The MPVs from the MIP signal fittings are close (490 ADC counts at BNL, 510 ADC counts at UIC).
3) The spread of the MIP signal is larger than the BNL results.

Cosmic test @ BNL – for crosscheck



VPHASE_ADC = 1.200



Difference in MIP signal distribution under investigation.

Thanks!