

2019 Run Planning

December 20th, 2018

2019 Run list file

Added received inputs from Stephen and list shown by Gina. Additional inputs will probably come, mainly from PD and DAQ. List found at this [link](#).

	A	B	C	D	E	F
1	—	Actions/Tests	Timing	Goals	Pre-activities	Analysis/Simulation
53	COLD Electronics	Regular calibration of Cold Electronics with pulser	At regular intervals (few h once a month ?)	Monitor cold electronics calibrations to detect eventual drifts		Analyze calibration to detect ev drifts. If any drift is found tr correlate with changes in dete conditions. May need to be rep more frequently for significant c in detector status
54		Take very long events (100k+ events) or short events at very high regular rate (100 Hz)	1/2 day	look at low frequency noise	Check with DAQ group whether DAQ can sustain either of the two options	Analysis with cosmic data
55						
56	Miscellaneous	Change the APA bias voltages to collect data when charge is being collected on the induction plane.	1 day	?		Analysis with cosmics
57		Runs at different diverter biases	2 days	Check the effects of the diverters on data collection		Analysis with horizontal cosm
58		Pulse the cathode and measure the response in the electronics.	2 days	Check what level voltage step causes what noise.		Online analysis

2019 Run list file

Added 2 tabs to the file: January schedule and the list of Tests done in 2018.

List found at this [link](#).

	A	B	C	D	E	F
1	—	Actions/Tests	Timing	Goals	Pre-activities	Analysis/Simulation
53	COLD Electronics	Regular calibration of Cold Electronics with pulser	At regular intervals (few h once a month ?)	Monitor cold electronics calibrations to detect eventual drifts		Analyze calibration to detect drifts. If any drift is found try to correlate with changes in detector conditions. May need to be repeated more frequently for significant changes in detector status
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56	Miscellaneous	Change the APA bias voltages to collect data when charge is being collected on the induction plane.	1 day	?		Analysis with cosmics
57		Runs at different diverter biases	2 days	Check the effects of the diverters on data collection		Analysis with horizontal cosmics
58		Pulse the cathode and measure the response in the electronics.	2 days	Check what level voltage step causes what noise.		Online analysis

NP04 2019 Run - List of tests

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List of things to do January schedule Tests done in 2018

Tests done in 2018

Non exhaustive list of tests (activities) already taken (done) after end of beam.

List found at this [link](#).

A	B		
Activity	Does it need additional tests?		
PD tests with calibration module to calibrate PD bars (for TDR)	Maybe - to check with PD consortia		
CE pulser calibration at nominal and 0 field	Once/month more or less		
Run at different E fields from 500 V/cm to 50 V/cm, in steps of 50 V/cm	If requested after looking at data already collected	ArtDAQ tests done by Kurt	Probably
Replacement of PS for the 200 kV PS. Observed a reduction of V and I fluctuations	Felix tests by Phil for DUNE		
Implementation of an automatic recovery mode for streamers and tuning of recovery parameters	A couple of rounds of tuning done, more may be necessary	Cosmic data run with electron diverters at 75%, 100%, and 125% of the nominal value	If requested after looking at data already collected
Cosmic runs	More	Filters maintainance	Every few weeks as long as we keep these filters
Noise and ground investigations by Linda and Terri, with Maura and Xavier as well	Yes	Update of DCS software: wire biases, FC terminations and diverter values can now be set from a configuration file rather than manually	
		Replaced and tested bottom purity monitor electronics	

Draft January 2019 schedule

List found at this [link](#).

➤ Turn everything back on the first 1-2 days.

➤ 1-2 days at HV off to take CE pulser runs at 0 field, prepare for WRM test, refill filters and, if ready, install new filter and new camera above beam plug

➤ Ramp to 500 V/cm and start monitoring streamer frequency, lowering voltage in steps until the voltage at which streamer doesn't happen is found (2-3 weeks). In the meantime, CE pulser runs @ nominal field, WRM test, PM cross calibration

A	B	C	D	E	F	G
Day	HV	DAQ/computer activity	CE Activity	WRM Activity	HV Activity	Purity Monitor Activity
January 7th	off	Turn back on computers, systems, etc. Check everything works	CE pulser calibration (0 V/cm field) in the afternoon if DAQ back on	FPGA emulation of WRM connection to FELIX: preparation	Refill filters	
January 8th	off		CE pulser calibration 0 V/cm field	FPGA emulation of WRM connection to FELIX: preparation	Refill filters Install new filter and new cameras?	
January 9th	off		CE pulser calibration 0 V/cm field	FPGA emulation of WRM connection to FELIX: preparation	Install new filter and new cameras?	
January 10th	on		CE pulser calibration 500 V/cm field	FPGA emulation of WRM connection to FELIX: preparation	Monitor streamer frequency. When we have streamers every few hours, lower voltage progressively until a voltage at which streamer won't happen is found	
January 11th	on		CE pulser calibration 500 V/cm field	FPGA emulation of WRM connection to FELIX: preparation	Monitor streamer frequency. When we have streamers every few hours, lower voltage progressively until a voltage at which streamer won't happen is found	
January 14th	on		CE pulser calibration 500 V/cm field	FPGA emulation of WRM connection to FELIX: data taking	Monitor streamer frequency. When we have streamers every few hours, lower voltage progressively until a voltage at which streamer won't happen is found	PM Cross-Calibration (1 hour)
January 15th	on		CE noise run with 200kV power supply (one hour or less)	FPGA emulation of WRM connection to FELIX: data taking	Monitor streamer frequency. When we have streamers every few hours, lower voltage progressively until a voltage at which streamer won't happen is found	PM Cross-Calibration (1 hour)

Draft January 2019 schedule

List found at this [link](#).

During streamer tests and after CE pulser run and noise run with 200 kV PS are completed, there's room for DAQ and/or PD tests which does not require a specific field.

A	B	C	D	E	F	G
Day	HV	DAQ/computer activity	CE Activity	WRM Activity	HV Activity	Purity Monitor Activity
January 16th	on				Monitor streamer frequency. When we have streamers every few hours, lower voltage progressively until a voltage at which streamer won't happen is found	PM Cross-Calibration (1 hour)
January 17th	on				Monitor streamer frequency. When we have streamers every few hours, lower voltage progressively until a voltage at which streamer won't happen is found	PM Cross-Calibration (1 hour)
January 18th	on				Monitor streamer frequency. When we have streamers every few hours, lower voltage progressively until a voltage at which streamer won't happen is found	PM Cross-Calibration (1 hour)
January 21st	on				Monitor streamer frequency. When we have streamers every few hours, lower voltage progressively until a voltage at which streamer won't happen is found	
January 22nd	on				Monitor streamer frequency. When we have streamers every few hours, lower voltage progressively until a voltage at which streamer won't happen is found	
January 23rd	on				Monitor streamer frequency. When we have streamers every few hours, lower voltage progressively until a voltage at which streamer won't happen is found	
January 24th	on				Monitor streamer frequency. When we have streamers every few hours, lower voltage progressively until a voltage at which streamer won't happen is found	

Draft January 2019 schedule

List found at this [link](#).

Once the streamer tests is concluded (probably towards end of January), take HV scans from 0 V/cm to 500 V/cm to study development of space charge. It requires at least 1 day at 0 V/cm before starting the test.

There's room for DAQ and/or PD and/or PM tests which does not require a specific field.

January 25th	on				Monitor streamer frequency. When we have streamers every few hours, lower voltage progressively until a voltage at which streamer won't happen is found	
January 28th	on				HV scan from 0V/cm to 500 V/cm in steps of 50 V/cm to study development of space charge. Need ~ 1 day of HV off first	
January 29th	on				HV scan from 0V/cm to 500 V/cm in steps of 50 V/cm to study development of space charge.	
January 30th	on				HV scan from 0V/cm to 500 V/cm in steps of 50 V/cm to study development of space charge.	
January 31st	on					
February 1st	on					

Proposed organization

- First weeks of January used to plan the schedule for the rest of the year
- Share the items in the list of tests among 4-5 groups, each formed by 2-3 people:
 - ✓ HV and Purity: I suggest Stephen, Francesco, and Flavio
 - ✓ DAQ: I suggest Dave, Giovanna, and Karol
 - ✓ CE (mainly for Cold Box activities): TBF
 - ✓ PD: TBF
 - ✓ All the remaining: Gina
- Each group will come up with a coherent testing plan, starting from the list shown and based on what has already been done and what will come up from the January tests
- 1 or 2 representative of each group will meet with Filippo, Serhan, Andrea, and myself to merge these plans together and assign dates to them (the “wise” group). In addition:
 - ✓ The representative(s) of each group will take care of finding specific manpower if needed, and make sure data collected will be analyzed off-line (when necessary)
 - ✓ The “operational” group made by Filippo, Serhan, Andrea, and myself will provide support for the tests (i.e. interface with cryo, safety, and/or technical group), coordinate and follow the progress of the tests, and interface with the onsite “fast” analysis group to get feedbacks on the data being taken