



Detector Support Group

We choose to do these things "not because they are easy, but because they are hard".

Weekly Report, 2023-02-28

Hall A – ECAL

Marc McMullen

- Continued the current ECAL heater test at 92 W using 2” of insulation
 - ★ Front flange temperature is controlled to 250°C
 - ★ The crystal face temperature has peaked at 182°C
- Completed reviewing the second version of the heater; ordered 15 heaters for testing
- Reviewed issues with the current Hall A six-supermodule test
 - ★ Heaters were not controlled or monitored
 - ★ Supplemental heating (heat tape) also not monitored or controlled
 - ★ Provided guidance on how the DSG test stand is monitored and controlled

Hall A – GEP

Mindy Leffel

- Terminated two high voltage, Fischer, 27-pin connectors

Hall A – Møller

Mary Ann Antonioli and Brian Eng

- Began a new Phoebus screen for magnet #2 temperatures, using Phoebus graphics based on a new AutoCAD drawing
 - ★ On first screen, a picture was used for the graphics, which becomes blurry when zoomed in
 - ★ Because Phoebus drawing tools are hard to use, the AutoCAD drawing is made first so the Phoebus line coordinates can be based on the AutoCAD coordinates

Hall A – SoLID

Pablo Campero

- Added email notifications to email system for changes of state cooldown, warm gas CD running, bottom fill enabled, and enable level control

Hall B – Magnets

Brian Eng

- Still dealing with Rockwell Automation tech support to get them to review the log files
 - ★ Still requiring photos of labels, which can only be accessed when the system is apart
 - ★ Unlikely to get any support

Hall C – NPS

Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng,

Mindy Leffel, and Marc McMullen

- Made five Phoebus screens for the alarm system tests—four crystal zone screens and one for crystal zone cooling



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Crystal Zone Cooling Circuit Temperature Sensor Alarm Testing [°C]												Scan rate	range [°C]	Min T [°C]	Max T [°C]	
PV name	Sensor	read	HIHI set	HIHI read	HIGH set	HIGH read	LOW set	LOW read	LOLO set	LOLO read	Alarm status	Alarm severity				
hcnps_CZ_cooling_T	Inlet manifold 1												<null>			
	Inlet manifold 2												<null>			
	Outlet manifold 1												<null>			
	Outlet manifold 2												<null>			

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★ Assessing methods of testing the screens before the implementation of the EPICS softIOC

- Terminated one 50-conductor cable; 11 of 12 completed
- Developed Python script to test Keysight extension cables, which automatically tests 40 channels at a time, taking 500 temperature and voltage readings per channel, and saving data to a .csv file
- Reviewed the Phoebus LED control screen
 - ★ Needs user-settable fields for pulse width and pulse amplitude
 - ★ May need to make separate screens for bleaching and pulsing
- Troubleshooting cRIO; project wouldn't run or deploy when trying to do it manually, only the startup application worked

Hall D – JEF

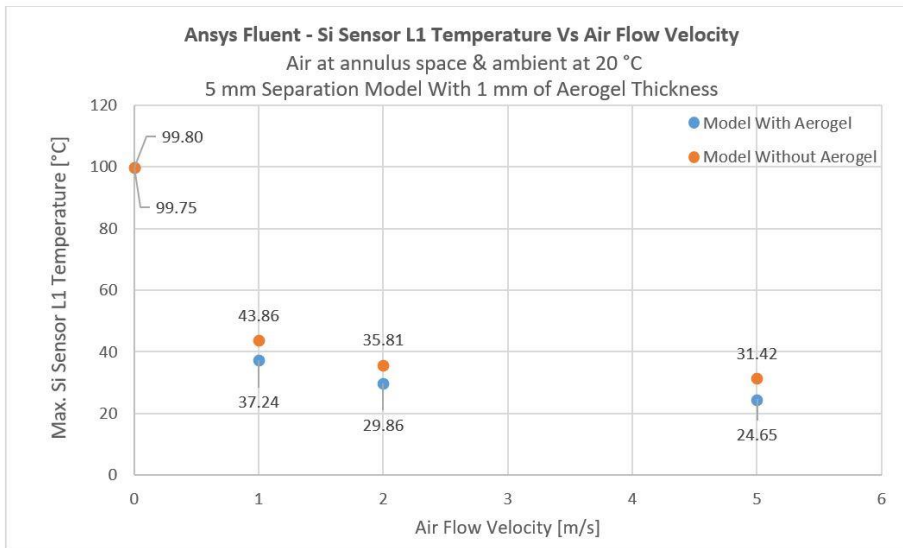
Mindy Leffel

- Wrapped 33 crystals with 3M foil and Tedlar

EIC

Brian Eng, Pablo Campero, and Marc McMullen

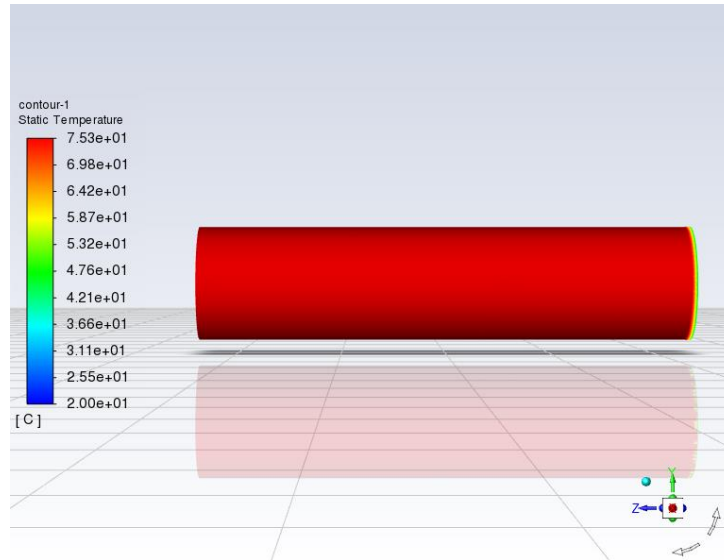
- Started re-assembling controls for the beamline test
- Researching aerogel for insulating the test stand
- Ran thermal simulation of model with 5 mm between beampipe and silicon sensor and with 1 mm of aerogel insulator



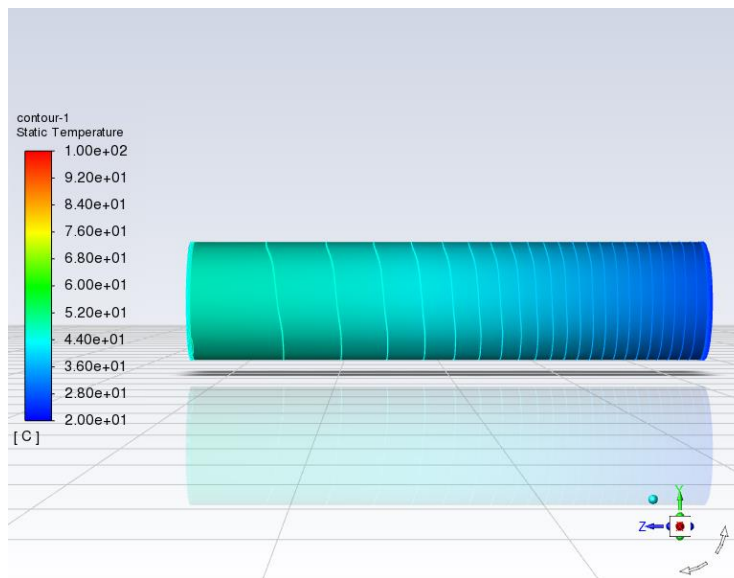
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Right side view of silicon sensor with air flow velocity at $1 * 10^{-7}$ m/s



Right side view of silicon sensor with air flow velocity at 1 m/s

EIC-DIRC

Tyler Lemon

- Repeating Altium simulation for interlock circuit using programmable voltage sources in place of circuit inputs, allowing inputs to be toggled at specific times to mimic a user pressing the sweep button, reset button, or triggering an interlock
 - ★ Debugging voltage source programming as sources do not consistently behave as expected and work at random

DSG Website

Peter Bonneau

- Revised the main [DSG website page](#) and added additional content