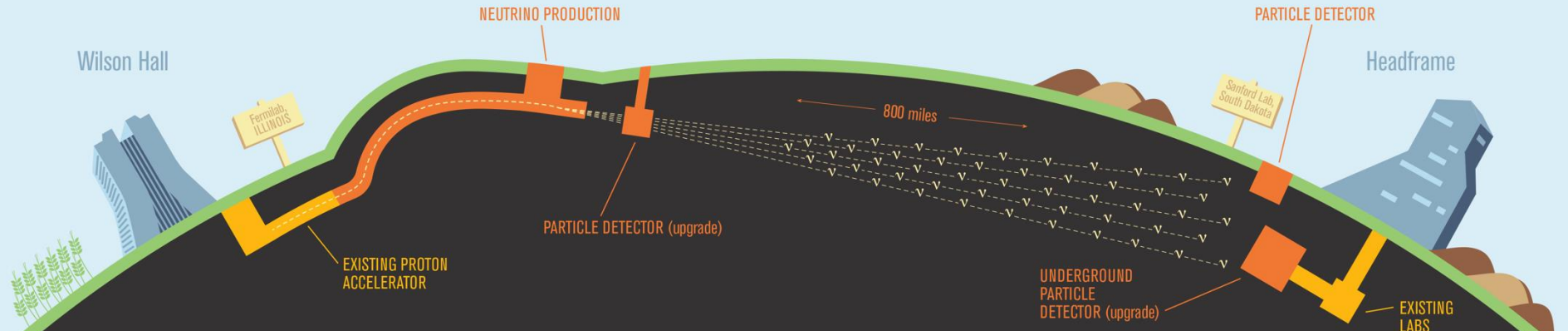


APA consortium

Justin Evans & Brian Rebel

28th October 2024



APA cold tests



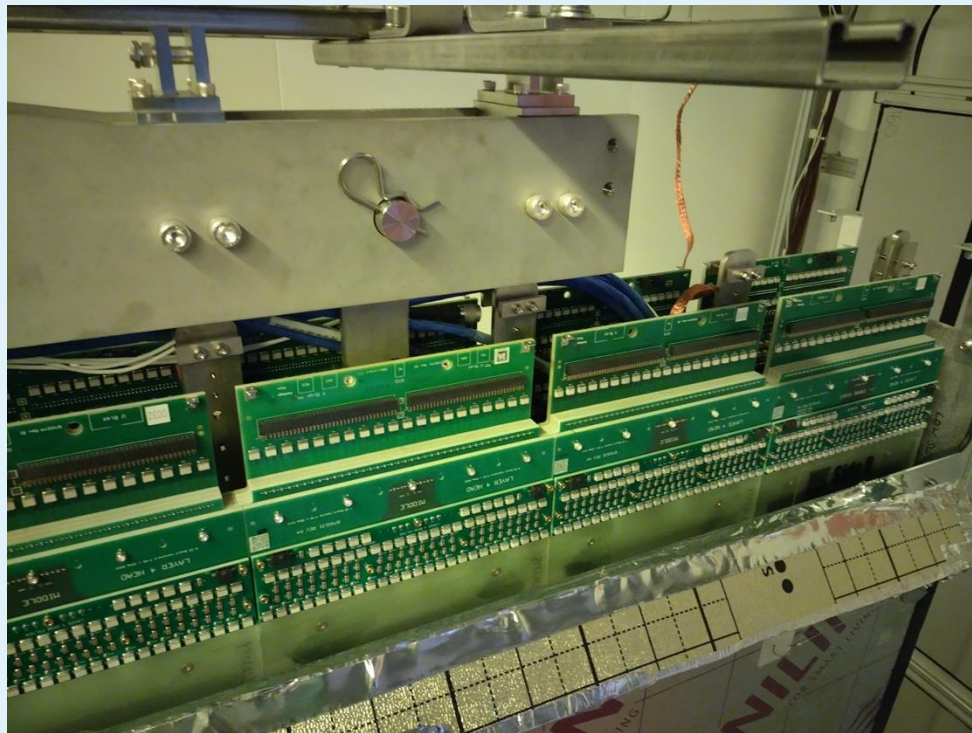
APA 14 went into the cold box at the start of last week

- The main issue getting APA 14 in was that the vertical clearance for a lower APA in the cold box is mere millimetres
- We'd like to modify the yoke for future lower APAs to provide more clearance
- Its cold test finished on Friday

APA 14 is now out of the cold box

- APA 15 will be put into the cold box today

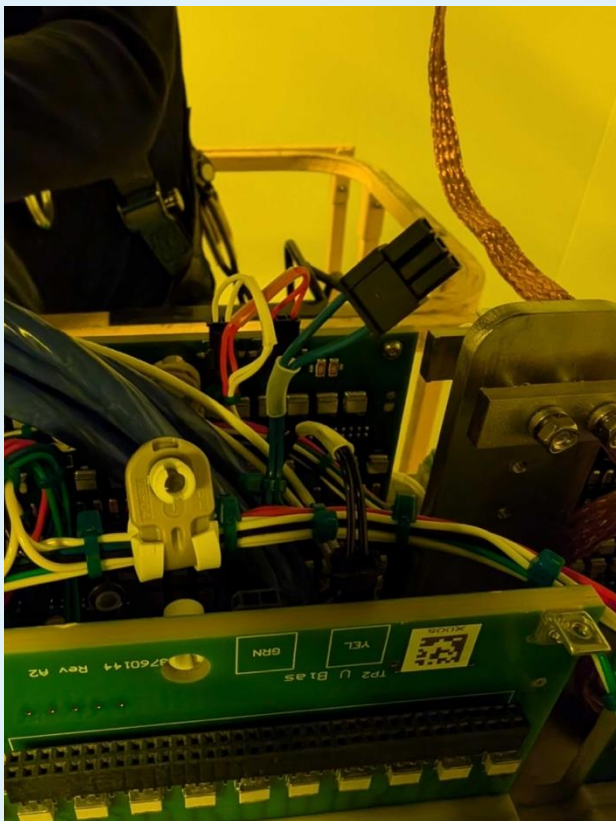
Electronics boards



Both APAs are now fully instrumented with all their electronics

- CR boards
- SHV assemblies
- Bias cable bundles
- G-bias boards
- CE adaptor boards
- CE boxes

Leakage current tests



Two CR boards installed on APA 15 failed their leakage current tests

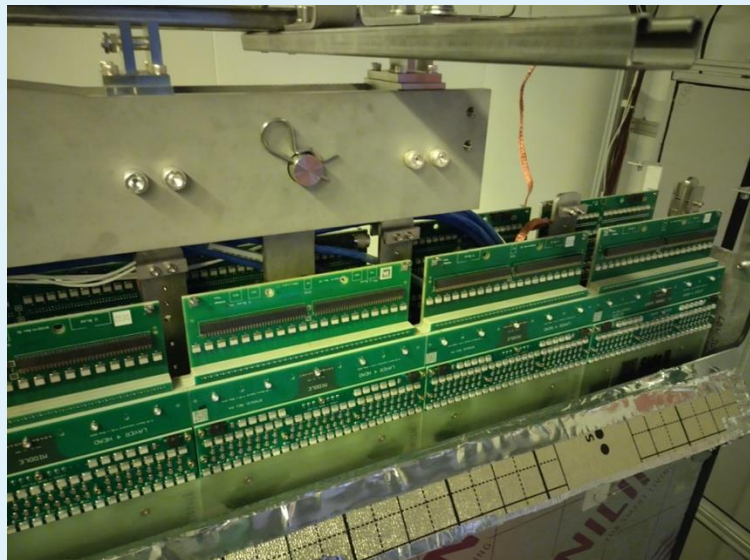
- These tests involve ramping up the bias voltage in steps and measuring the leakage current
- Since these two boards were tested at PSL before sending, this failure is likely humidity related rather than a 'real' problem (see next slide)

To allow us to move on with CE installation, we have installed two old CR boards in their place

- One of the two redundant X & U bias connectors is not compatible between the old CR boards and the new bias cable harness
- We are therefore running with just one of the two X & U bias connections on these two boards
- More new boards are being prepared at PSL to be sent to CERN so that we have fully useable spares for future cold-test rounds

Thanks to Pip and Roger for the efficient problem-solving

Leakage current tests



These leakage current tests are important, as we cannot risk frying the cold electronics through a problematic board drawing a large current

- However, we also cannot have a large number of false-positive tests during installation at SURF due to humidity
- We know from SBND, and from DUNE experience, that boards in warm, humid environments can draw current which goes away in the cold

We will test the humidity hypothesis on these two CR boards

- We will package them with desiccant and will re-test them on APA 14
- We can also bake these boards then re-test
- We can also perform tests we did for SBND, and monitor the leakage current on these boards

We have to understand how we are going to deal with this issue during the FD installation

Longer term planning

- We are still nicely on schedule with these cold tests
- In two weeks' time we should have both APAs back out of the cold box, ready to move back into the ASF
- Discussions are now ongoing as to how we re-package the APAs for shipment back to the UK
- Reminders of
 - [Pip's weekly meeting](#), at 3 pm CET each Friday
 - [Lessons learnt document](#)
 - [Collection of photos](#)
 - [Schedule](#)

Geometry boards

Thanks to Chicago for filling in the Factory Board Rejection form for rejected geometry boards

- This will help us to get our PCB inventory up to date
- We'll need to get this done for boards rejected at Daresbury

Over the coming weeks, we are also working on make sure that all our geometry board procedures are released on EDMS

Perform Action (Unspecified Component)

Action Type

Factory Board Rejection

An action must be performed on a single specified component. Please enter the component UUID in the input box below.

The box uses auto-complete - just start typing a component UUID, and any matching UUIDs in the database will be displayed.

Alternatively, click on the camera icon (to the right of the box) to scan the component's QR code if you have it available.

Component UUID  *

Example: 123e4567-e89b-12c

