IFIC
15/06/2017

next steps

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Next steps

june

- Start calibration at pressure with LN2

july

- Start calibration with LAr
- Cable arrives to IFIC
- Cut cables and sold cables to sensors

august

- Installation of cable/sensor supports on pipes
- Installation of cryostat membrane sensors and cables (CERN)
- Calibration with final cables at IFIC

september

- Calibration with final readout at CERN
- Installation of cables and sensors on pipes

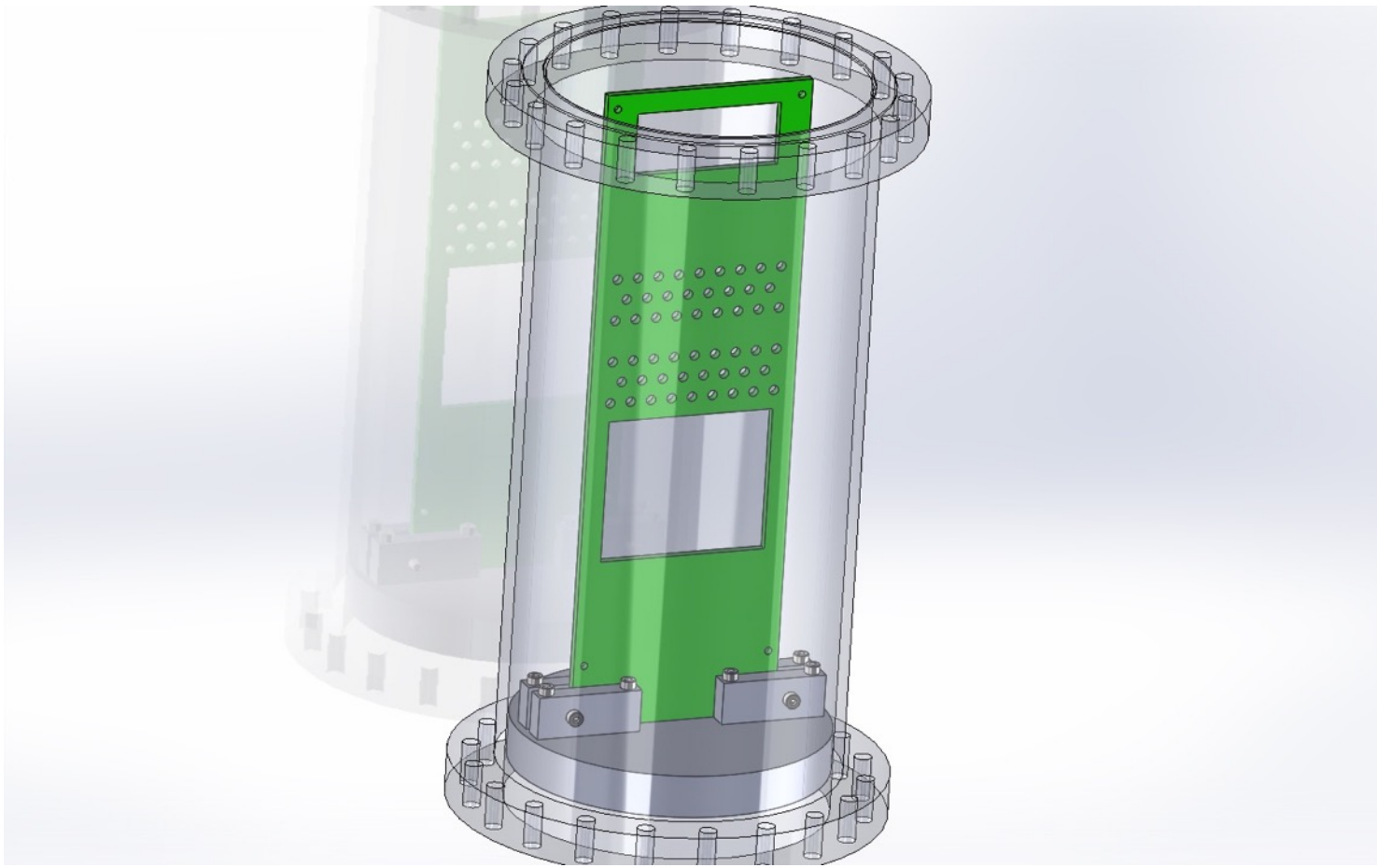
Next actions

- We need the sensor/cable supports by mid august
  - We should start prototyping
- We need the final calibration system by mid august

calibration

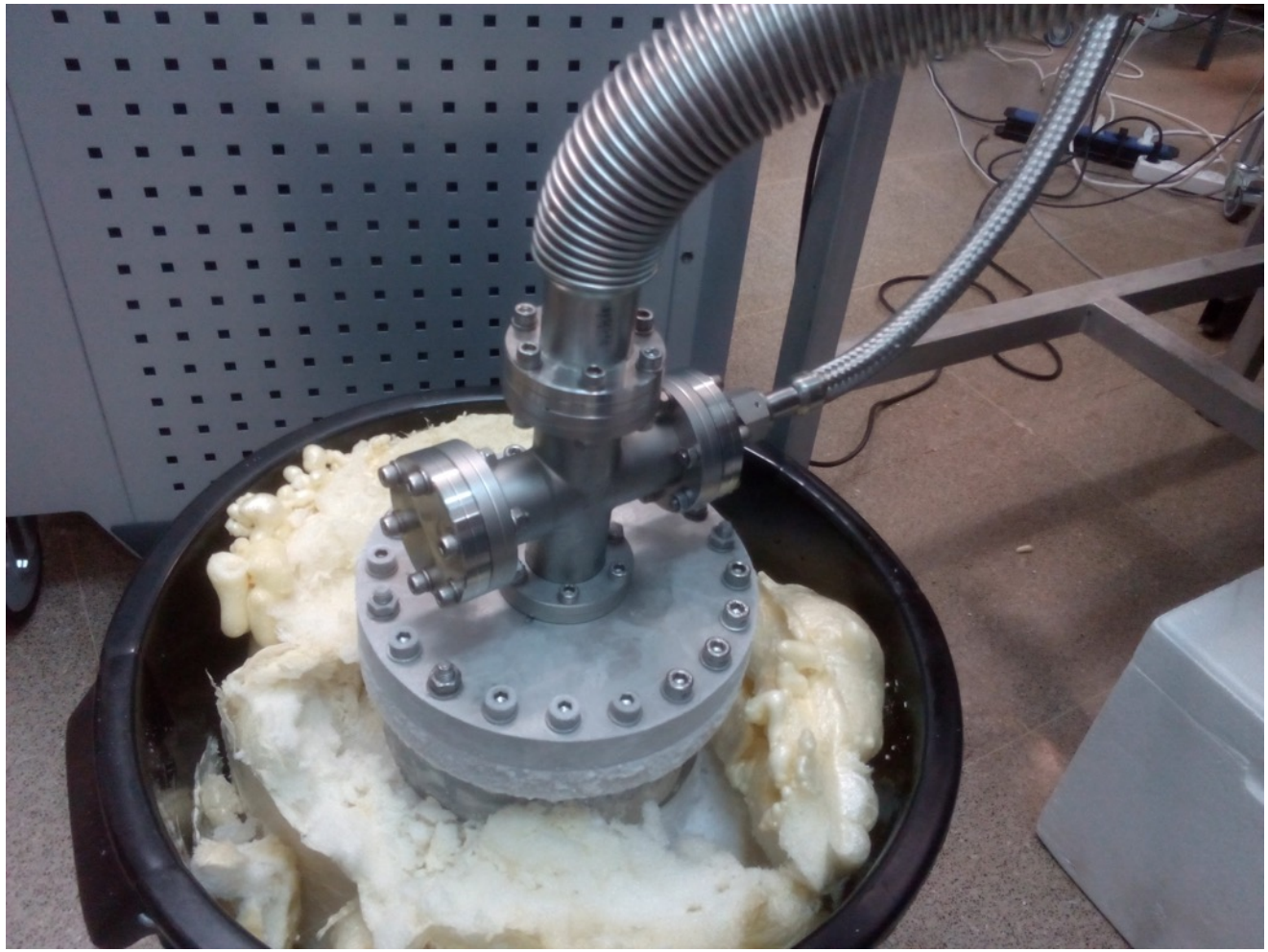
Current system

- Use lateral guides instead of the ones at the bottom



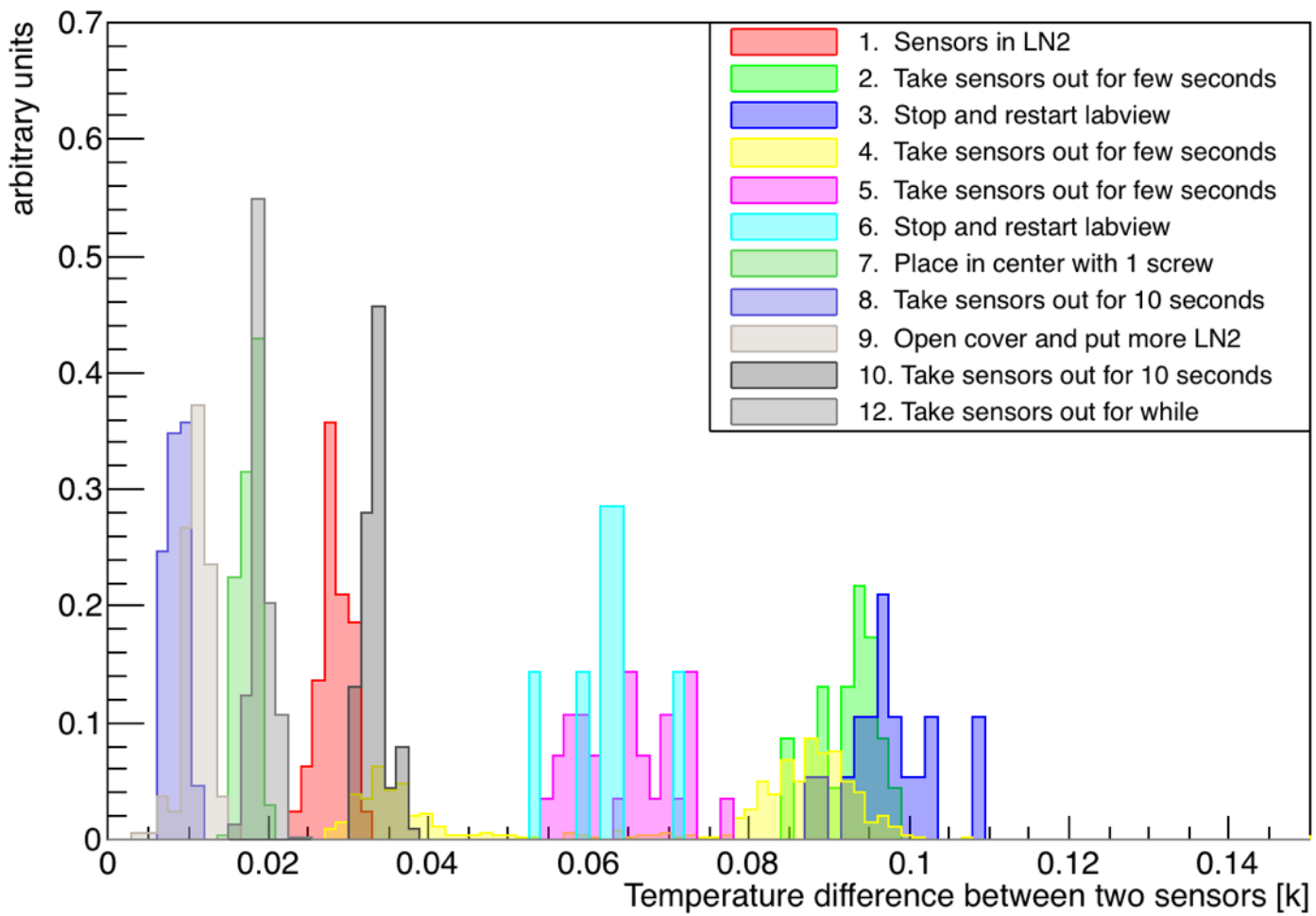
Calibration at pressure

- We are just missing the flange with the connector to be put on the other side of the flexible tube



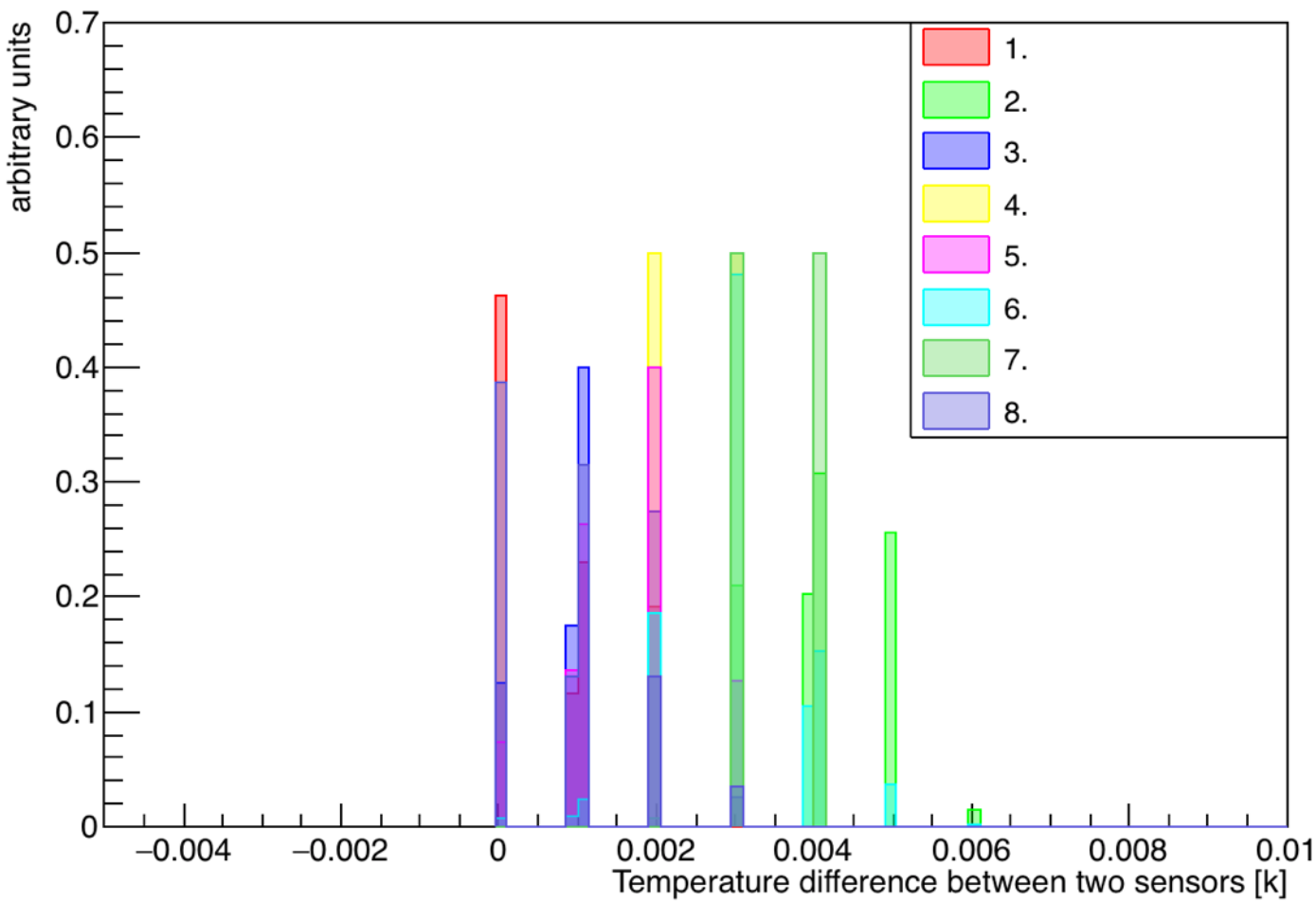
Reproducibility tests I

- Test reproducibility
- This is probably due to parasitic resistances that can be eliminated exchanging the current polarity



Reproducibility tests II

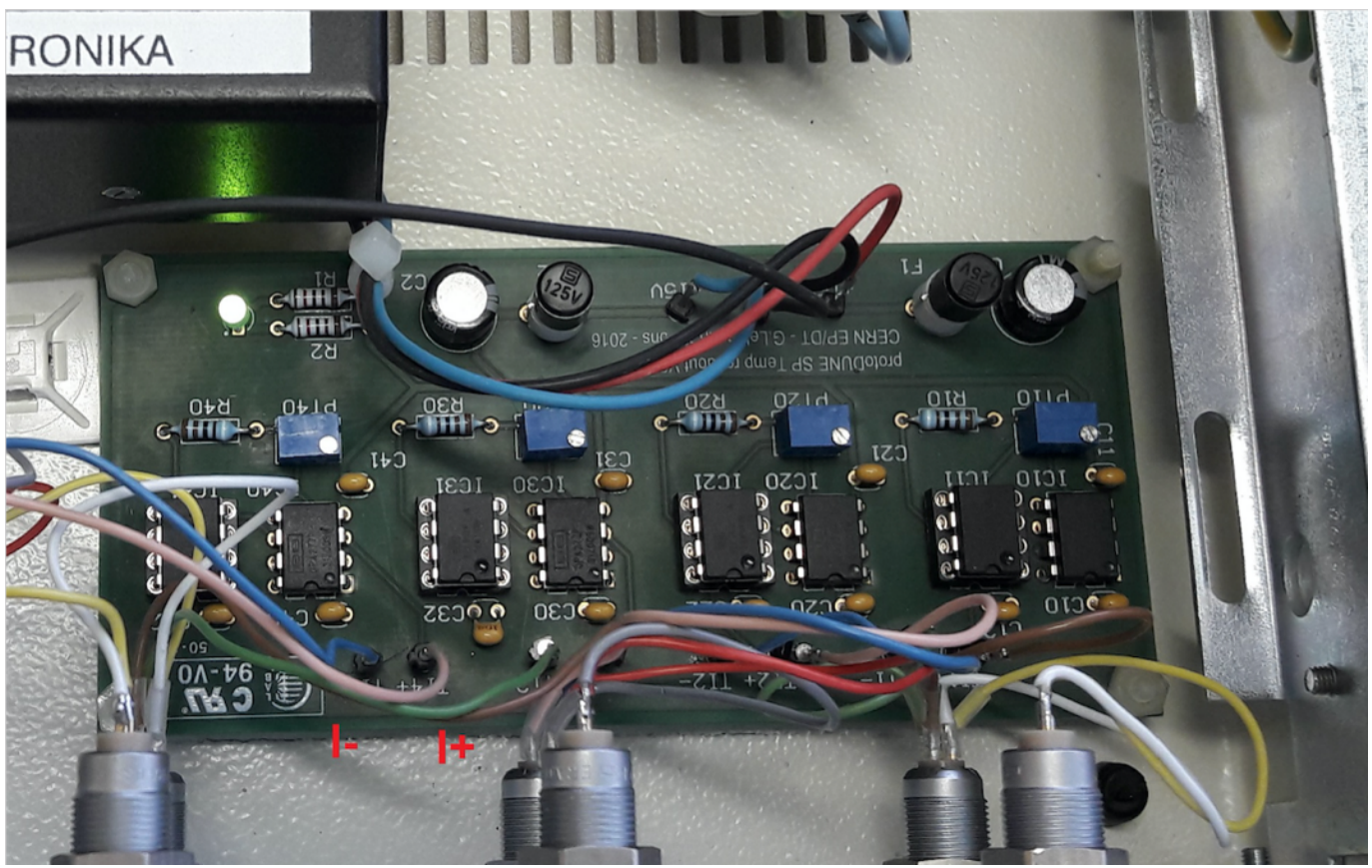
- Much better results: Dispersion of 5 mk
- Conclusion: it seems there is a parasitic resistance when the sensors are put back in LN2 without waiting until they stabilise



Current polarity

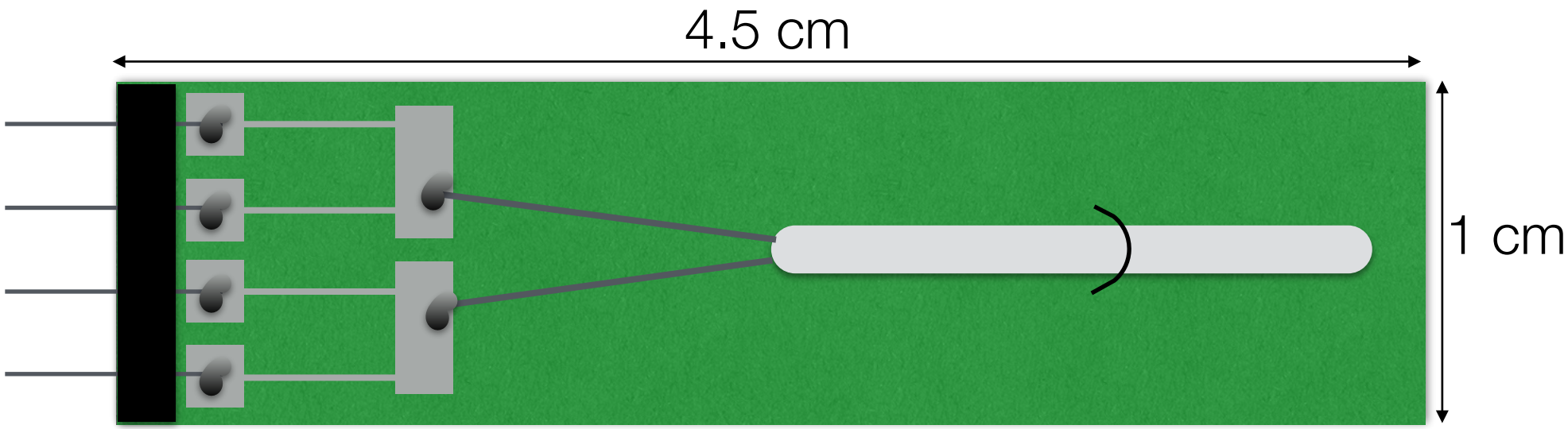
- Exchange pink and blue cables
- Can we add a small switch in the current source box that does that ?

Corremos algún riesgo de introducir un offset en la corriente si hacemos eso ?
No porque el principio de la current source es que la corriente se va adaptar y el valor viene dada por una reistencia+potenciómetro interna del circuito y no por los cables o resistencias externas



Sensor support for calibration

- Decouple sensor and sensor wires from conector
- Never touch sensor nor wire when connecting and disconnecting



Improving the system

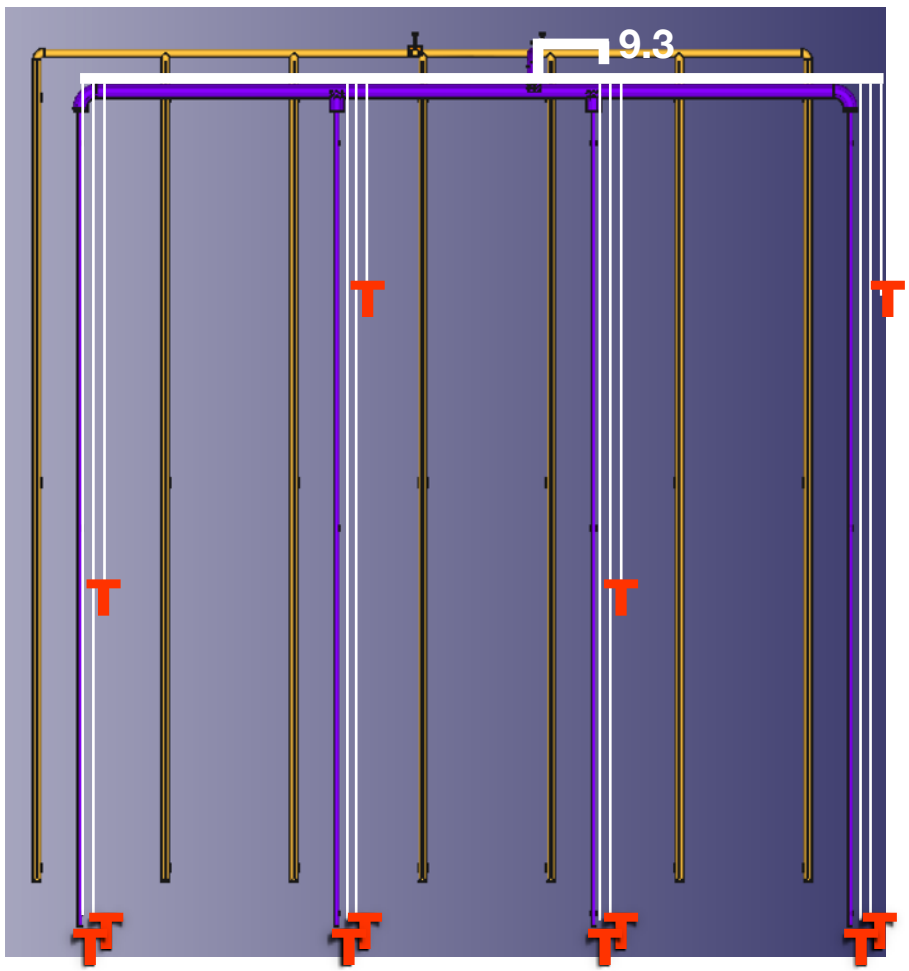
- We are currently using the NEXT vessel. Ideally we would like to have our own dewar, that can be transported to CERN.
- I'll investigate in the next few days the possibility of having a system fabricated for us by mid august (Contact CryoVac)
- Problems of the current setup:
  - It is small:
    - not obvious that we can put 15 m of cables inside
    - Sensors are close to the vessel walls (potential biases).
  - We depend on the NEXT activities
  - I don't think we can bring it to CERN

bottom pipes

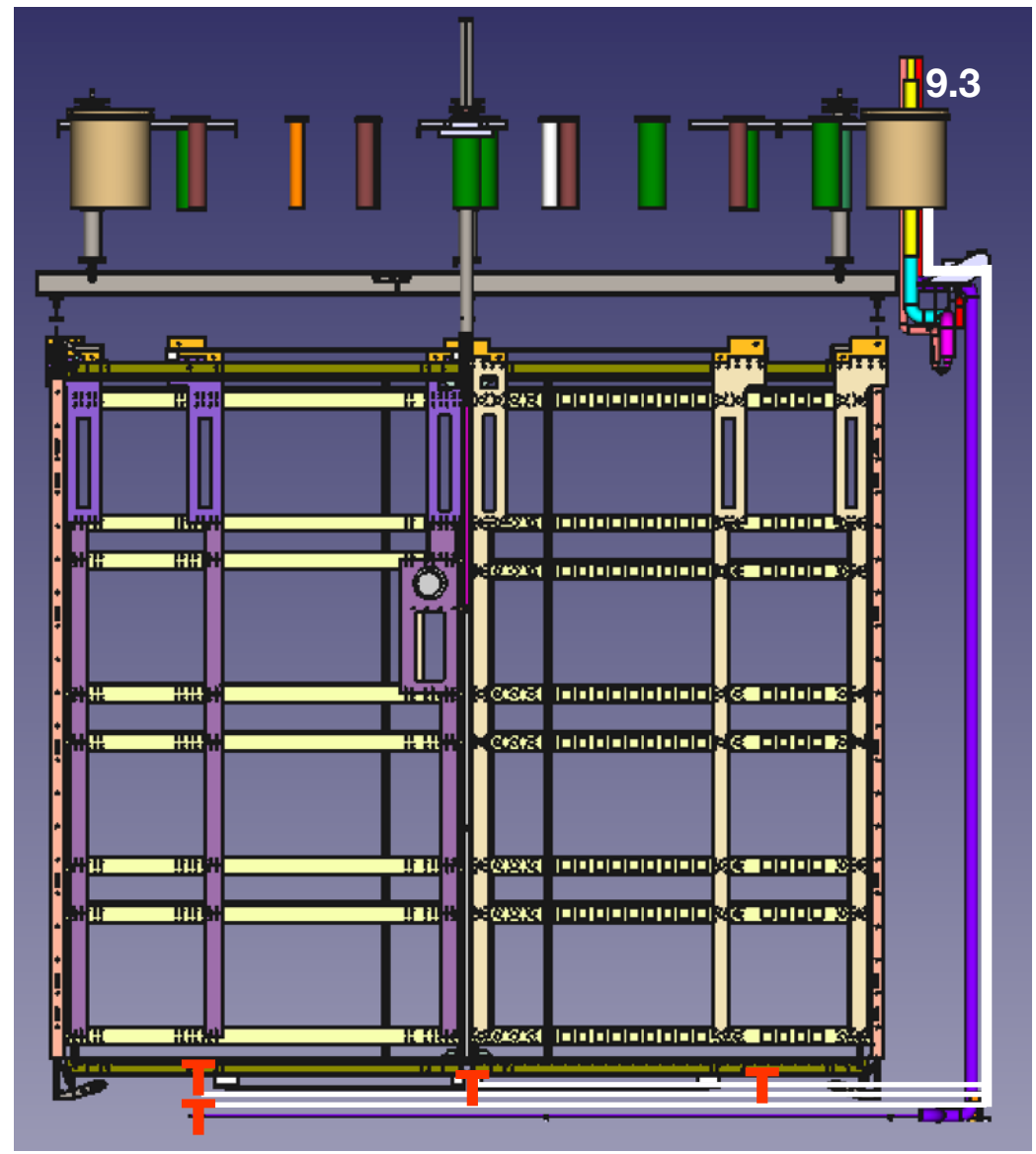
Sensor map and cabling

- Cables can run attached to the pipes all the way to port 9.3
- Pipes in purple, cables in white

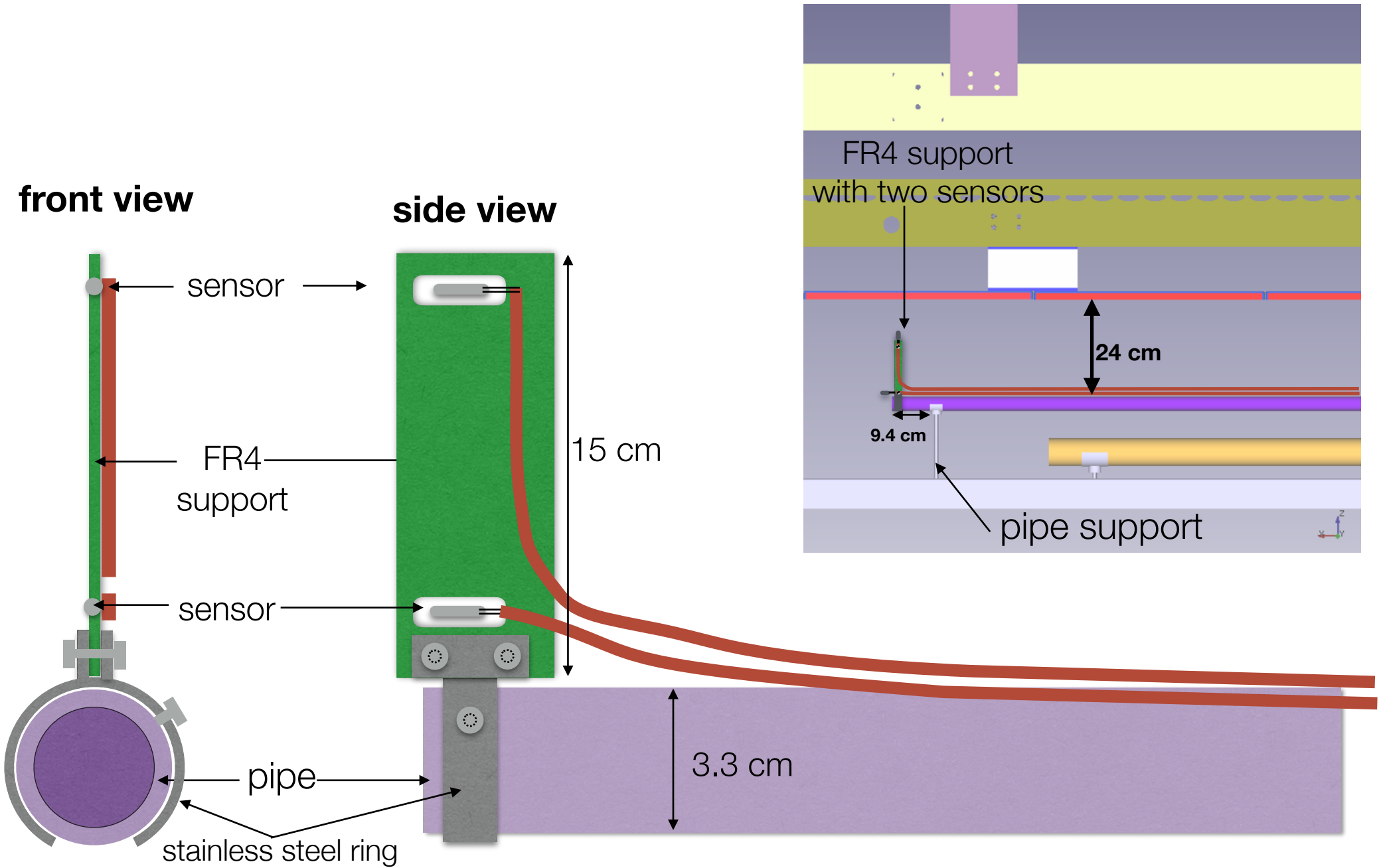
TOP view



SIDE view

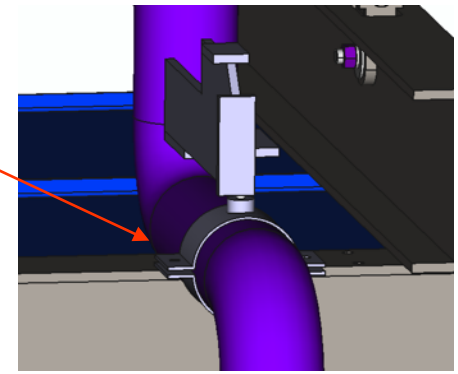


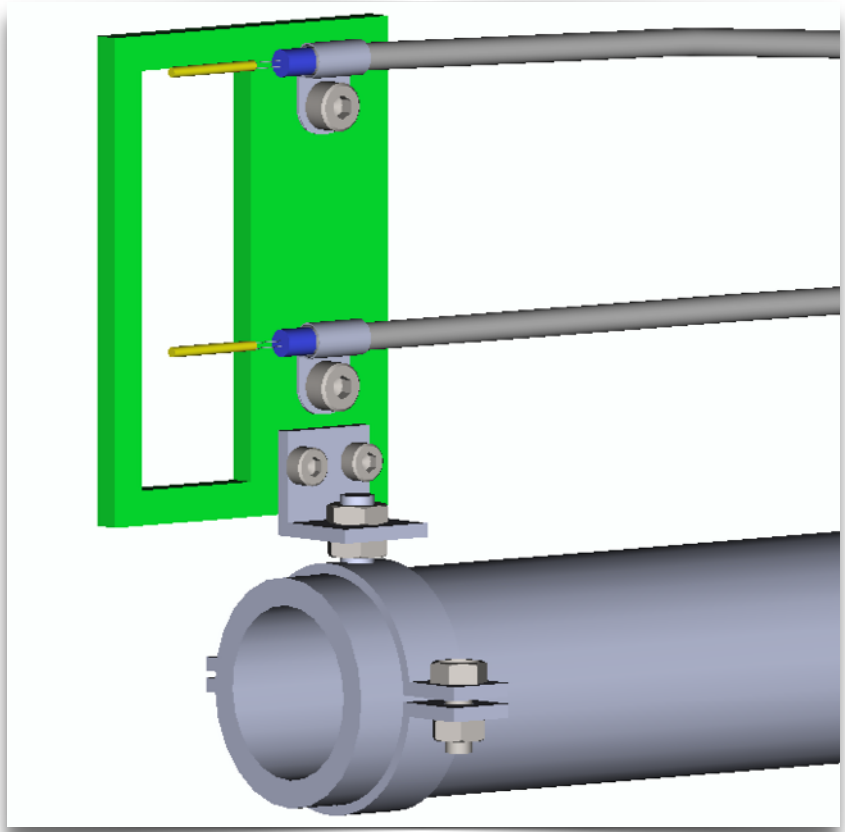
Conceptual design

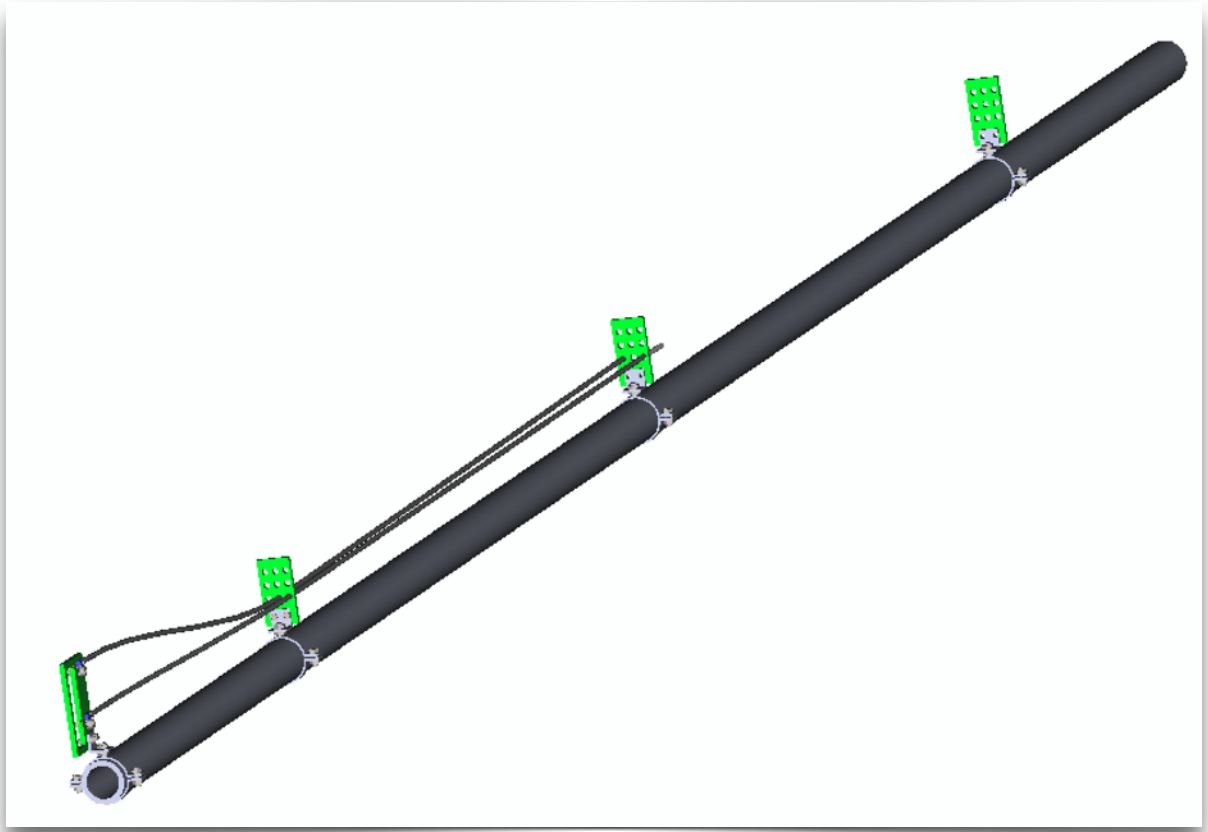


Preliminary 3D model

- We could use a similar system to the one used to hold the pipes
- All those elements must be ready by August
- Installation will happen in september







Sensor support for calibration

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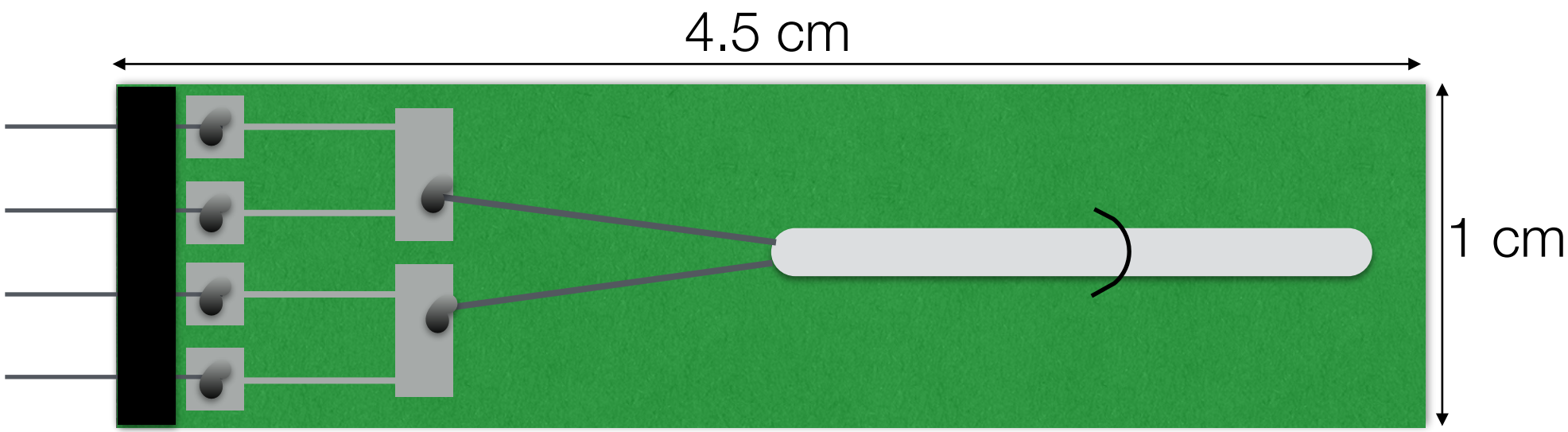
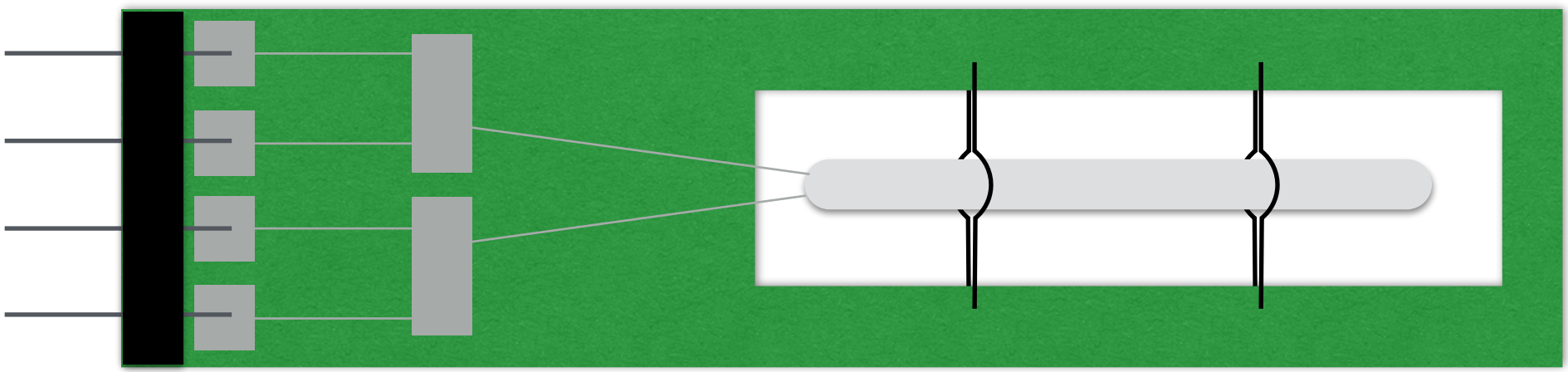
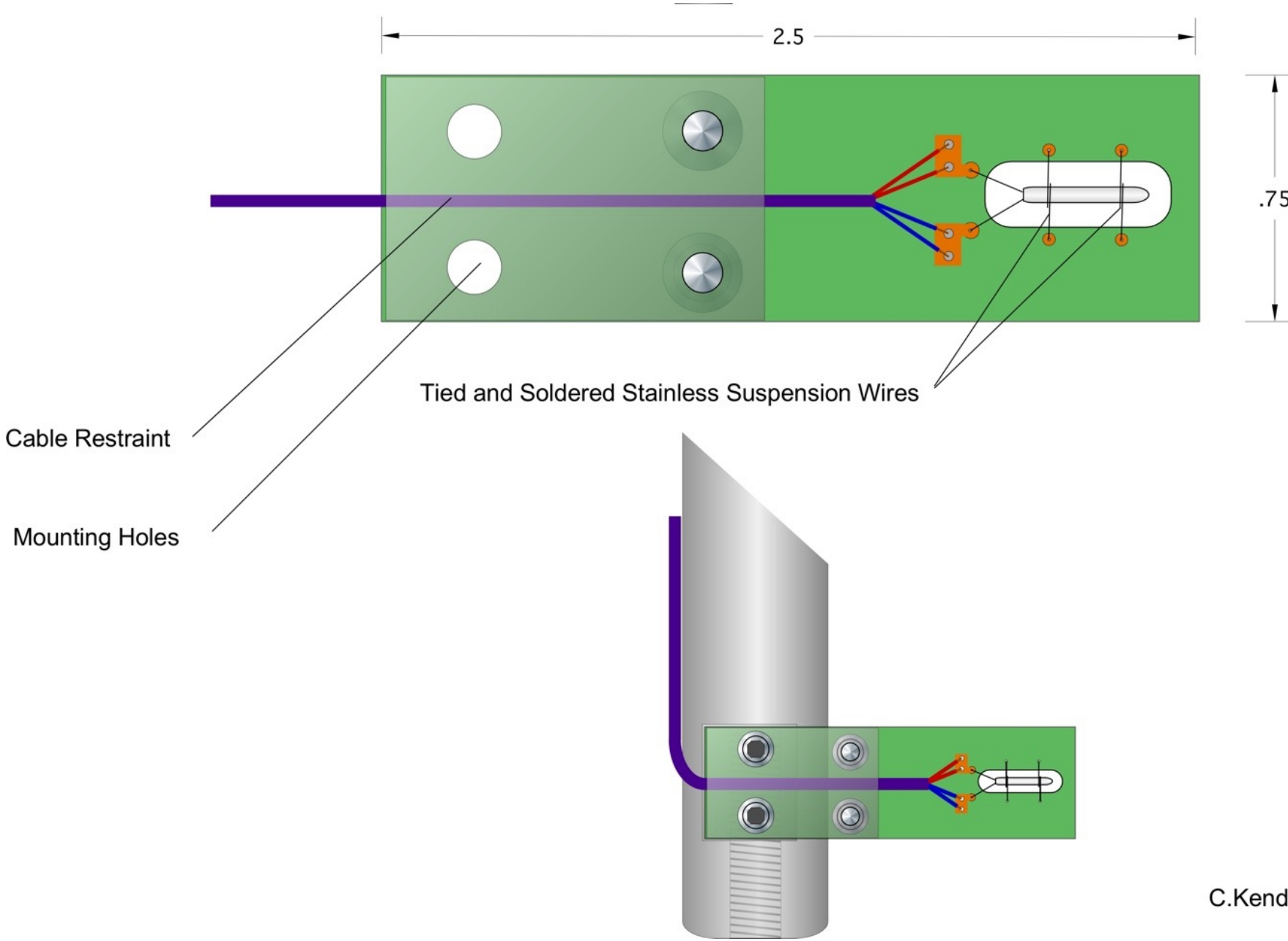


Final sensor support

- Is it absolutely necessary to solder the sensor directly into final cables ?
  - Not obvious. It seems that the 4-wires readout is really powerful
- Can we imagine a similar little support to be plugged-in once cables and big sensor's supports are installed (both for T´gradient and other sensors) ?
  - This would be great: less risks, allow exchanging sensors, etc



Hawaii's plans



C.Kendziora 3.14.17