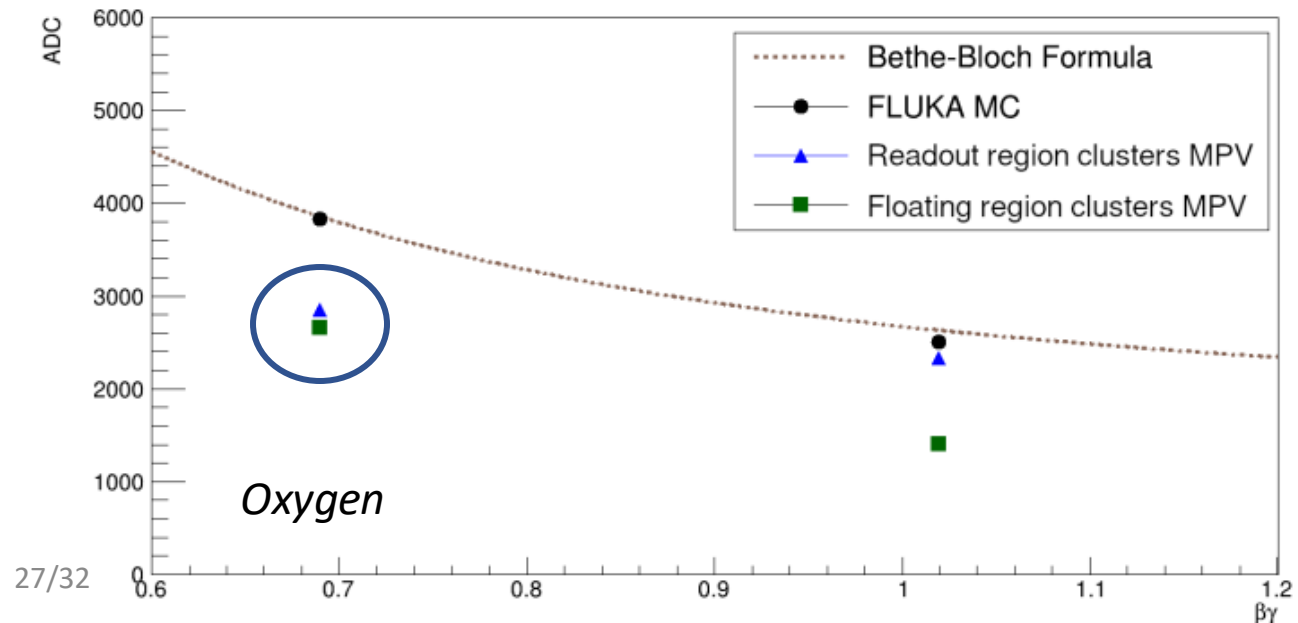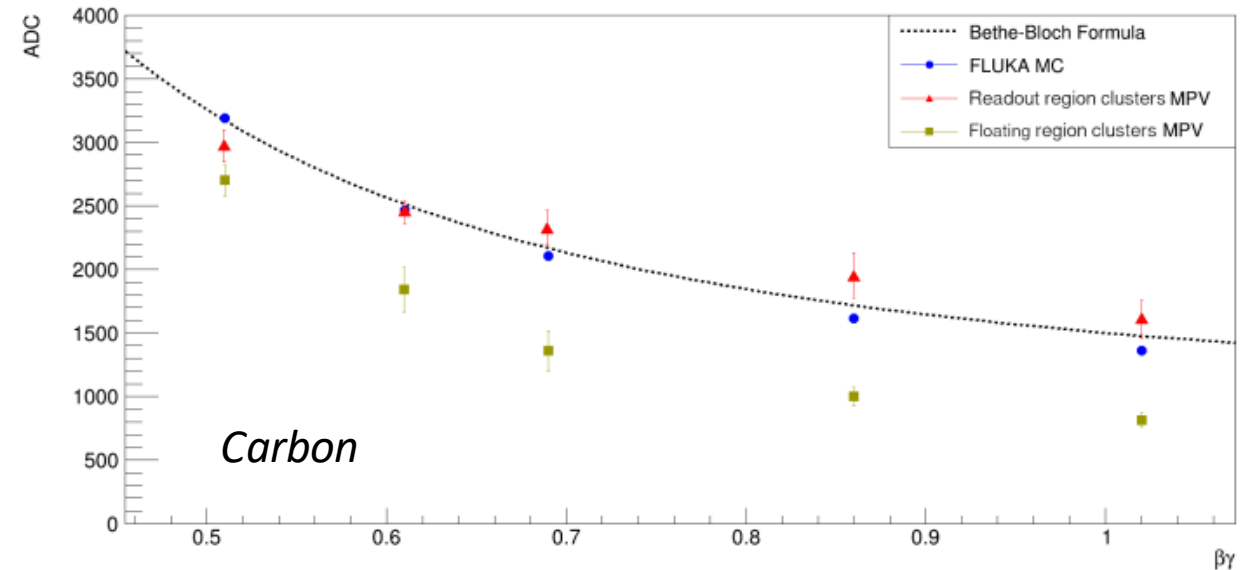# *Quick update on MSD*

*Gianluigi Silvestre*

01/02/2023

Tests on the readout chain

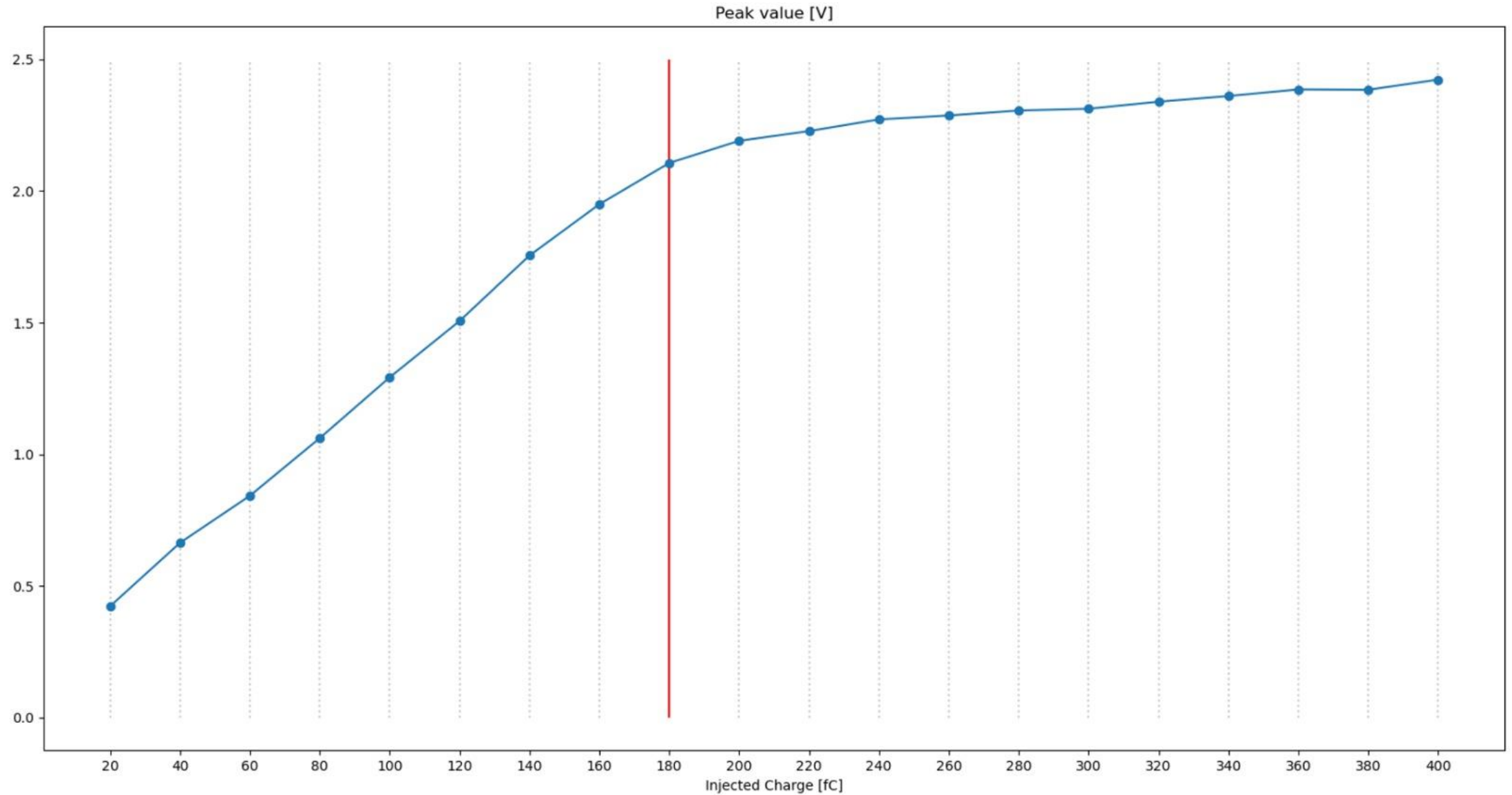# Data from Carbon and Oxygen

- Reconstructed clusters ADC comparison with FLUKA MC predictions

  - Good agreement for Readout region cluster

    - Down to 200 MeV/u for Carbon ions

    - For 400 MeV/u Oxygen ions

    - Discrepancies for the other energies for Carbon ions

- Data from 200 MeV/u Oxygen ions show a deviation from the predictions for both families of clusters

- Apparent charge loss dependence on the energy of the incoming particle

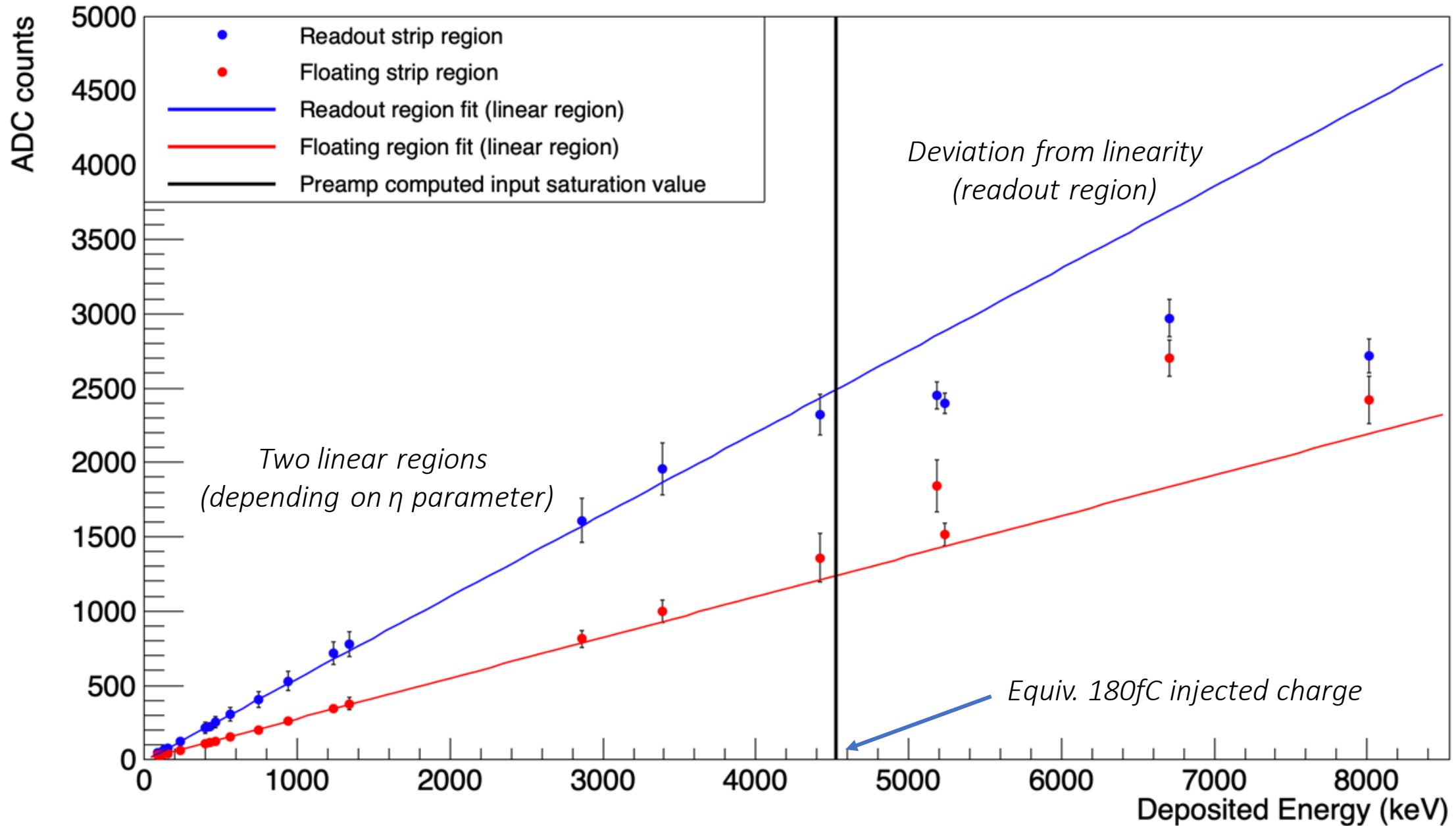- *Hypothesis: analog readout saturation for heavy ions*
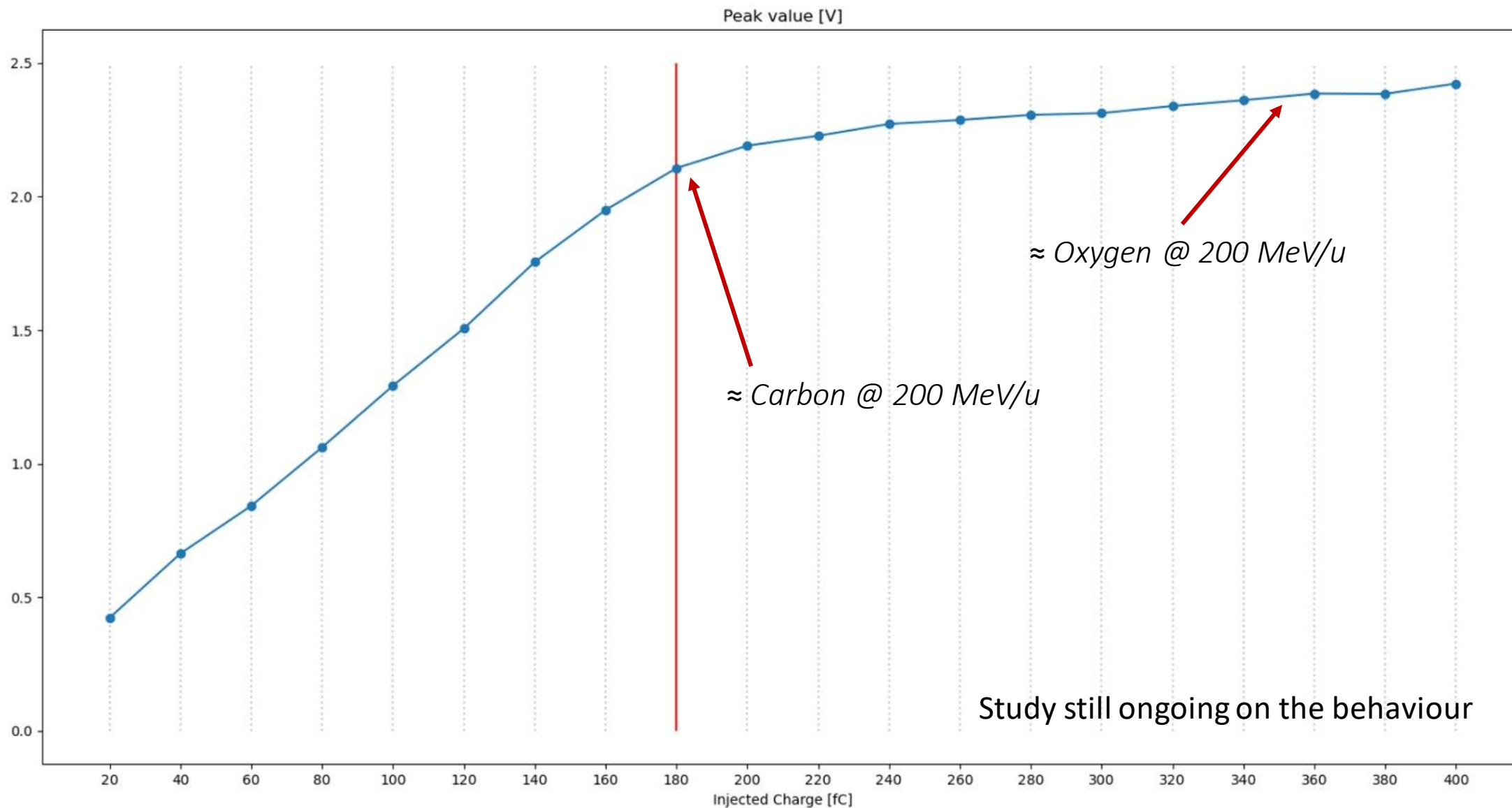
Tests on analog preamp/shaper ASIC

Analog ASIC shaper output for different test injected charged
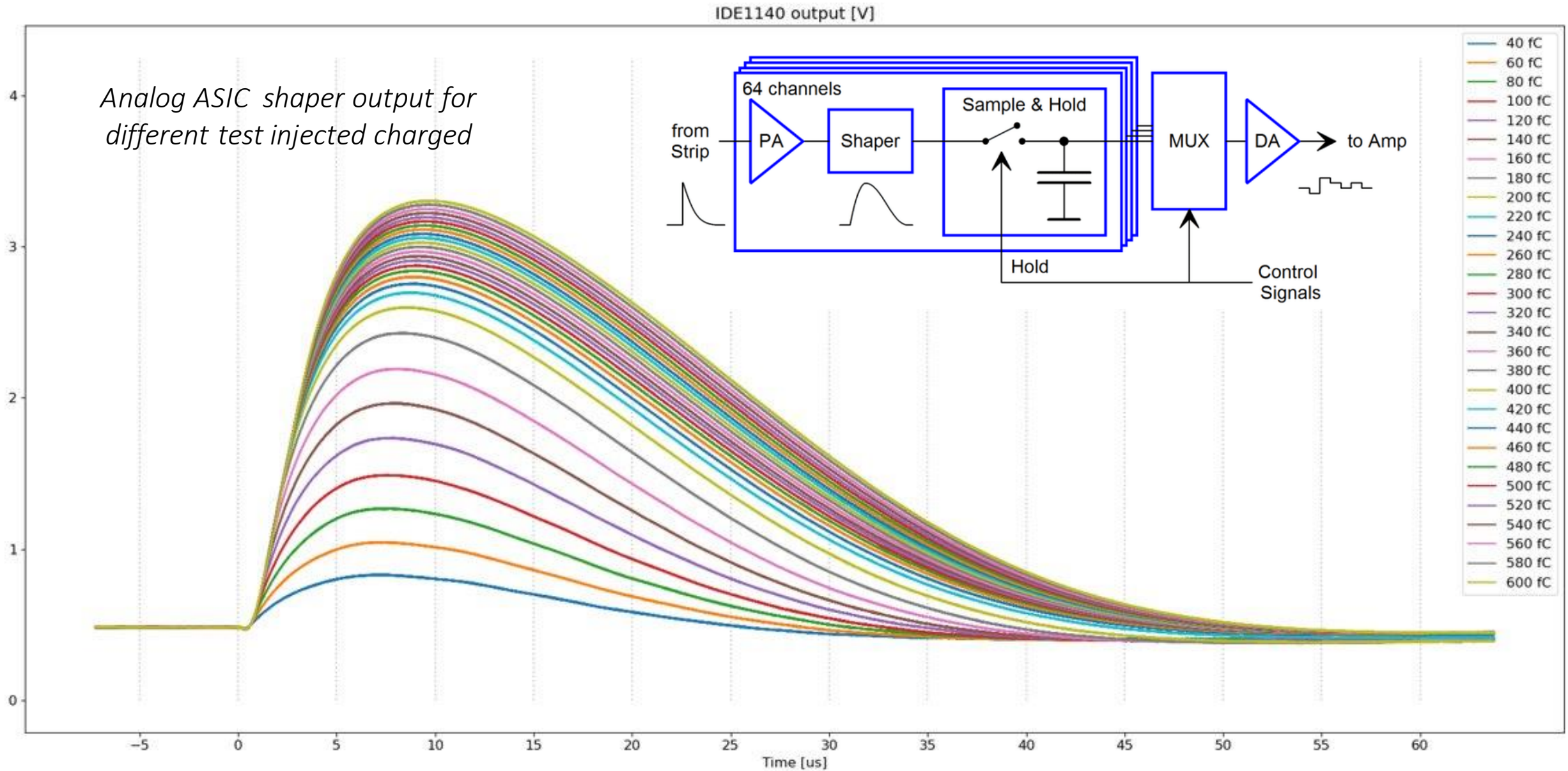
Tests on analog preamp/shaper ASIC

Deposited energy vs reconstructed clusters

Tests on analog preamp/shaper ASIC

Peak value [V]

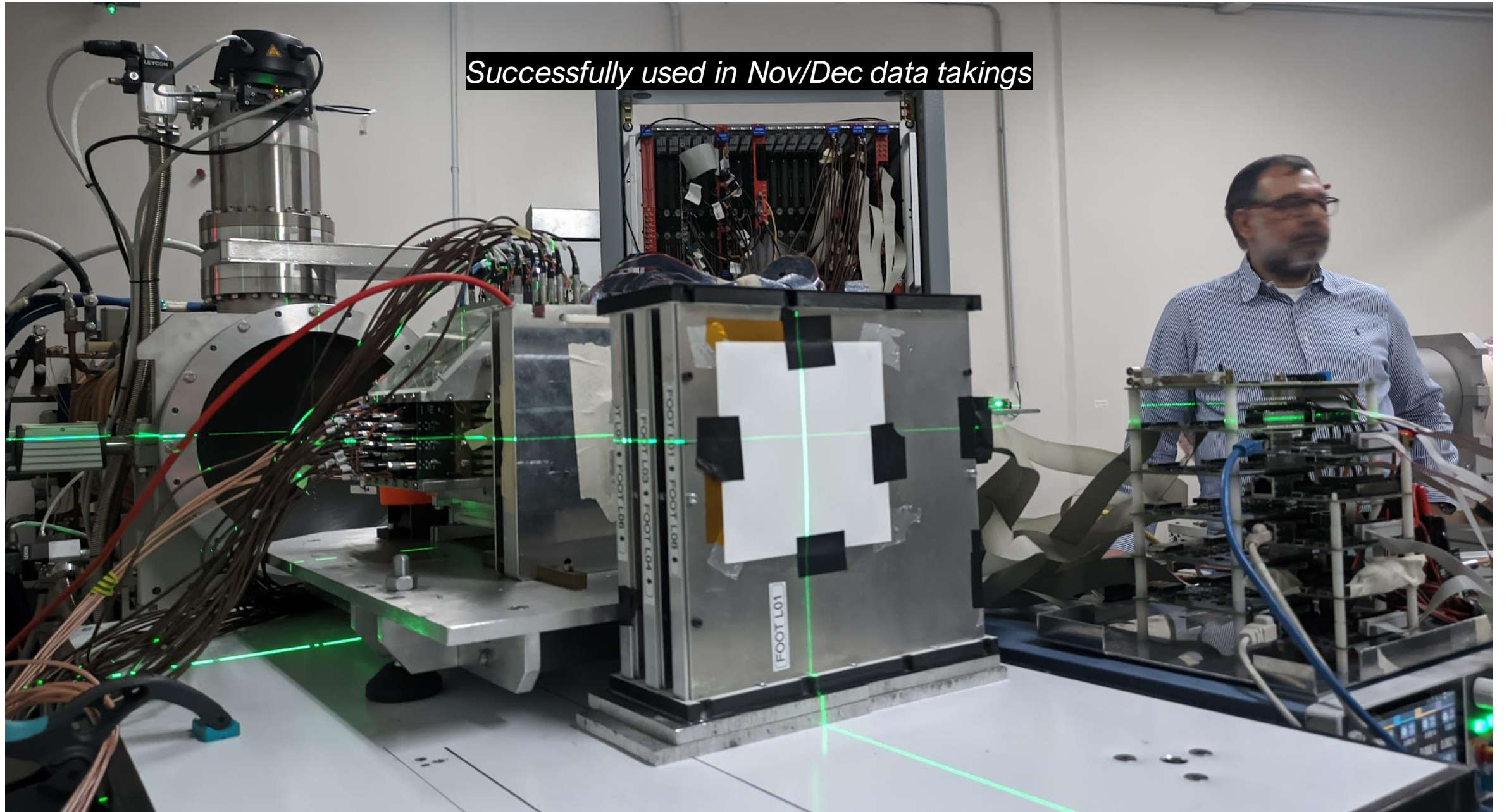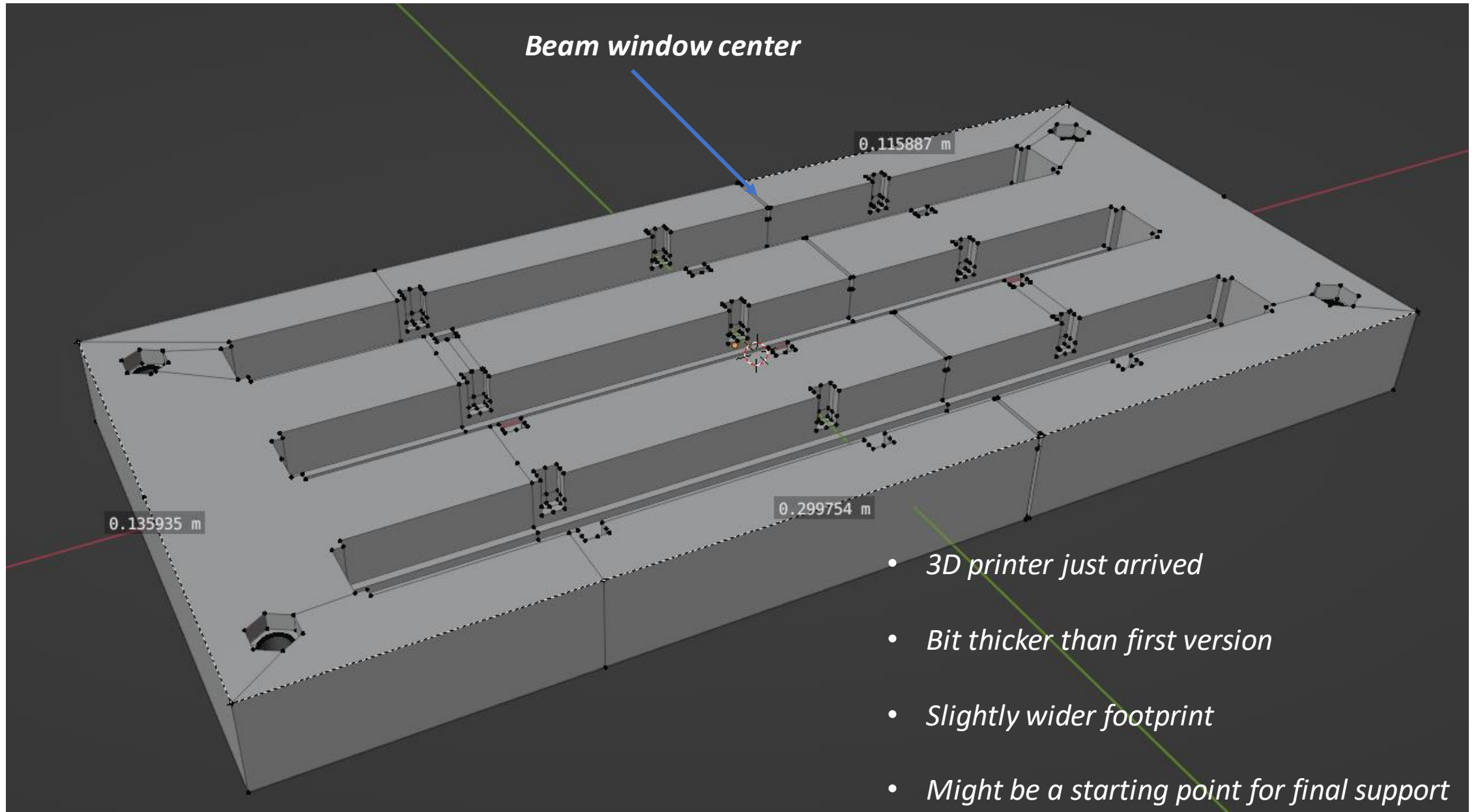≈ Oxygen @ 200 MeV/u

≈ Carbon @ 200 MeV/u

Study still ongoing on the behaviour

Injected Charge [fC]

Mechanics

First 3D printed support
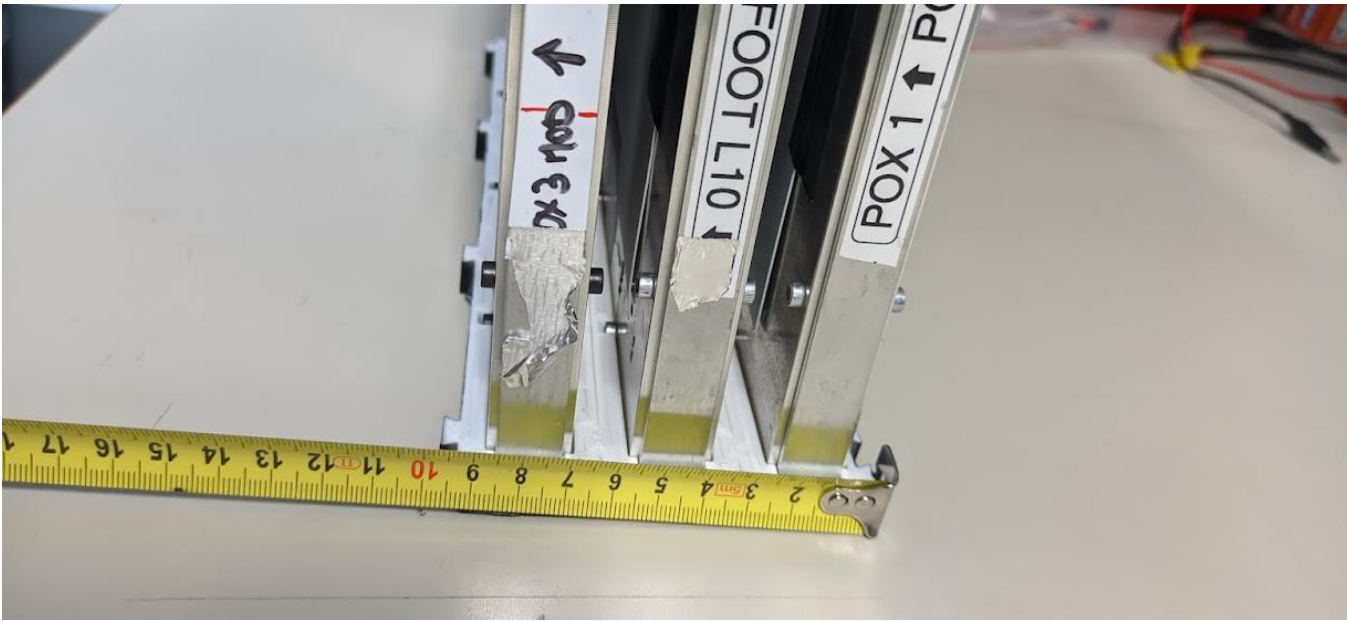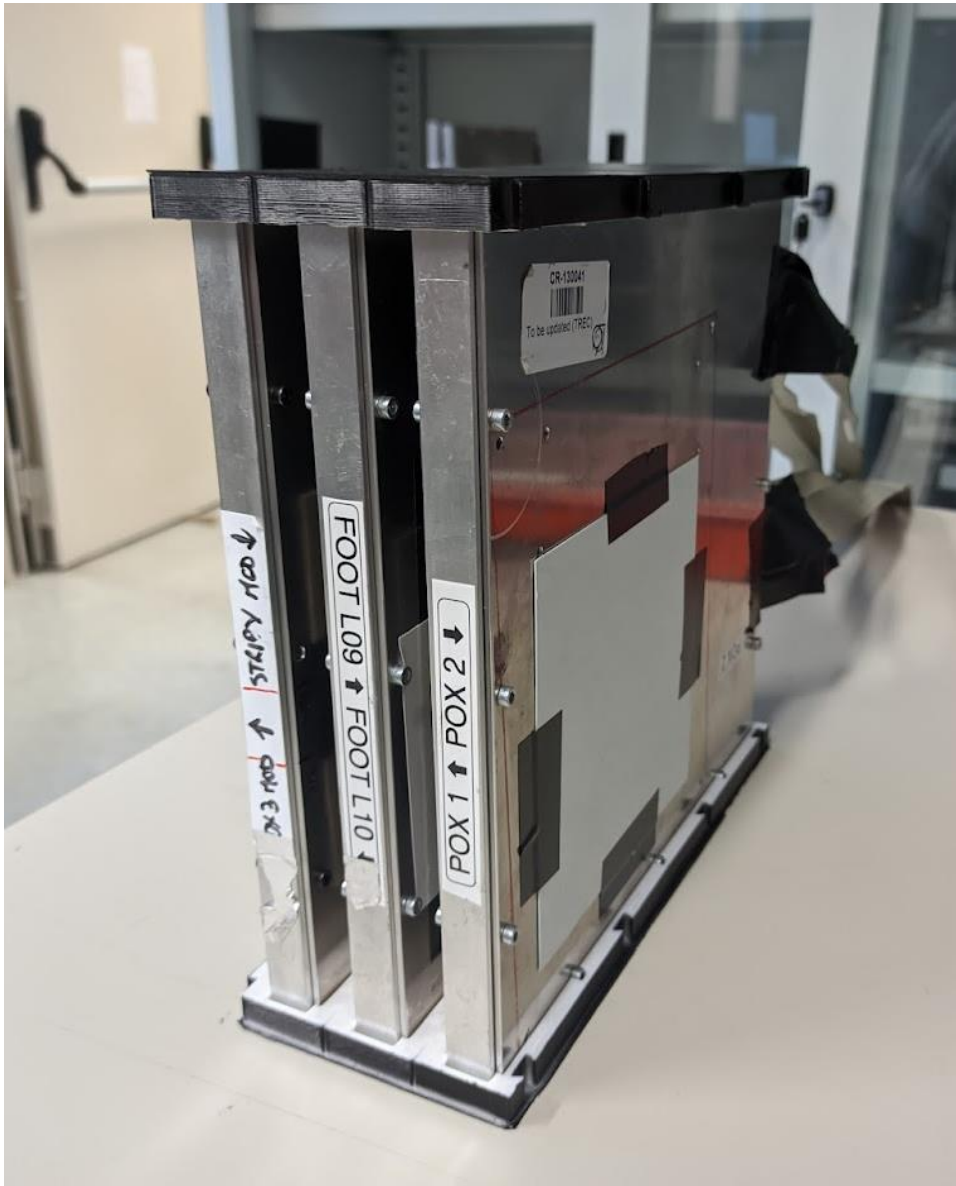
Successfully used in Nov/Dec data takings

New 3D printed support (W.I.P.)

Beam window center

0.115887 m

0.135935 m

0.299754 m

- *3D printer just arrived*
- *Bit thicker than first version*
- *Slightly wider footprint*
- *Might be a starting point for final support*

"Quick" 9h test print from yesterday
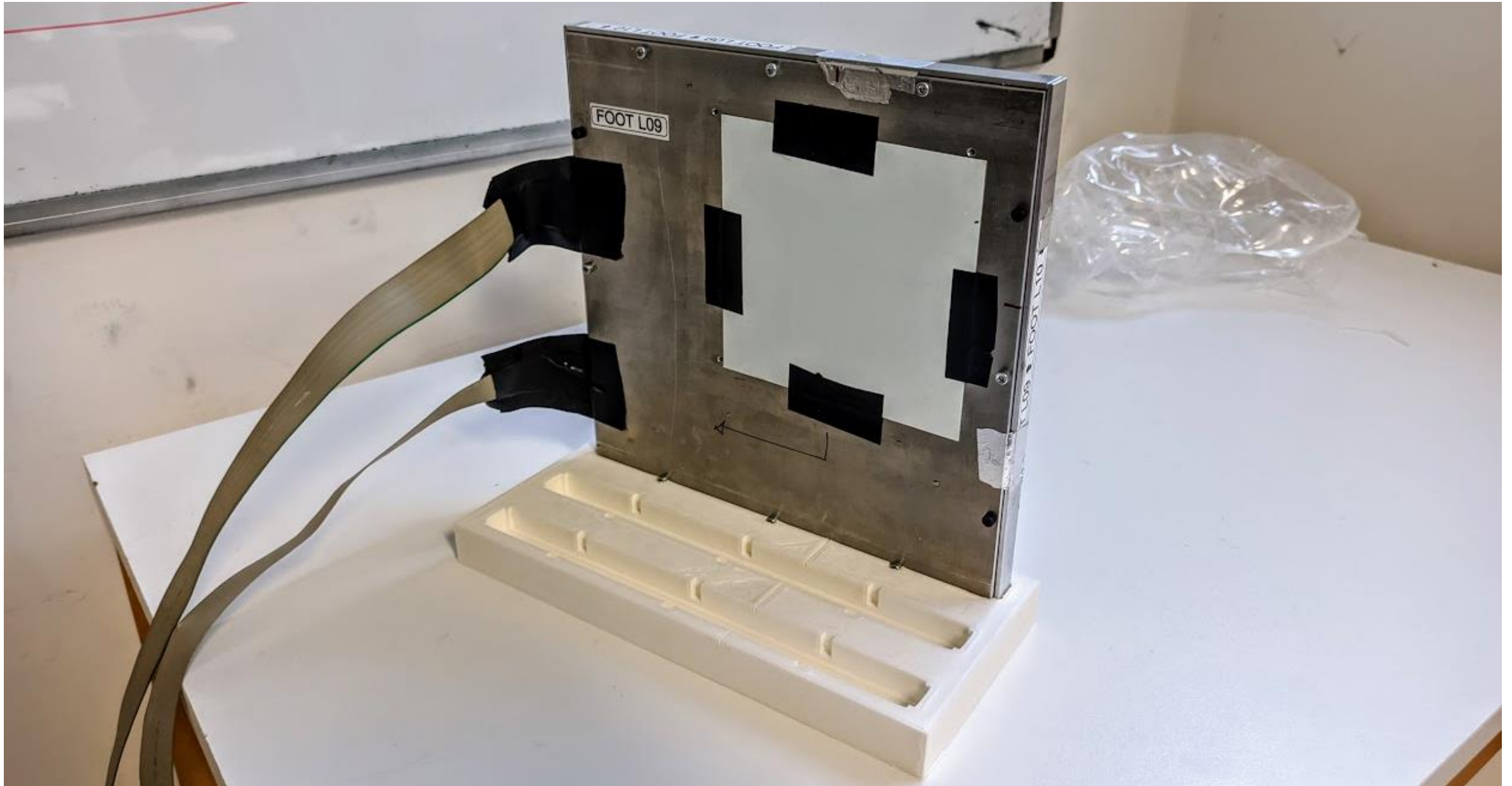
New 3D printed support (W.I.P.)

Beam window center

0.115887 m

What's the biggest footprint we can use?

Is ≈ 2cm gap between the boxes good enough for the final mechanics?

0.135935 m

0.299754 m

- 3D printer just arrived
- Bit thicker than first version
- Slightly wider footprint
- Might be a starting point for final support