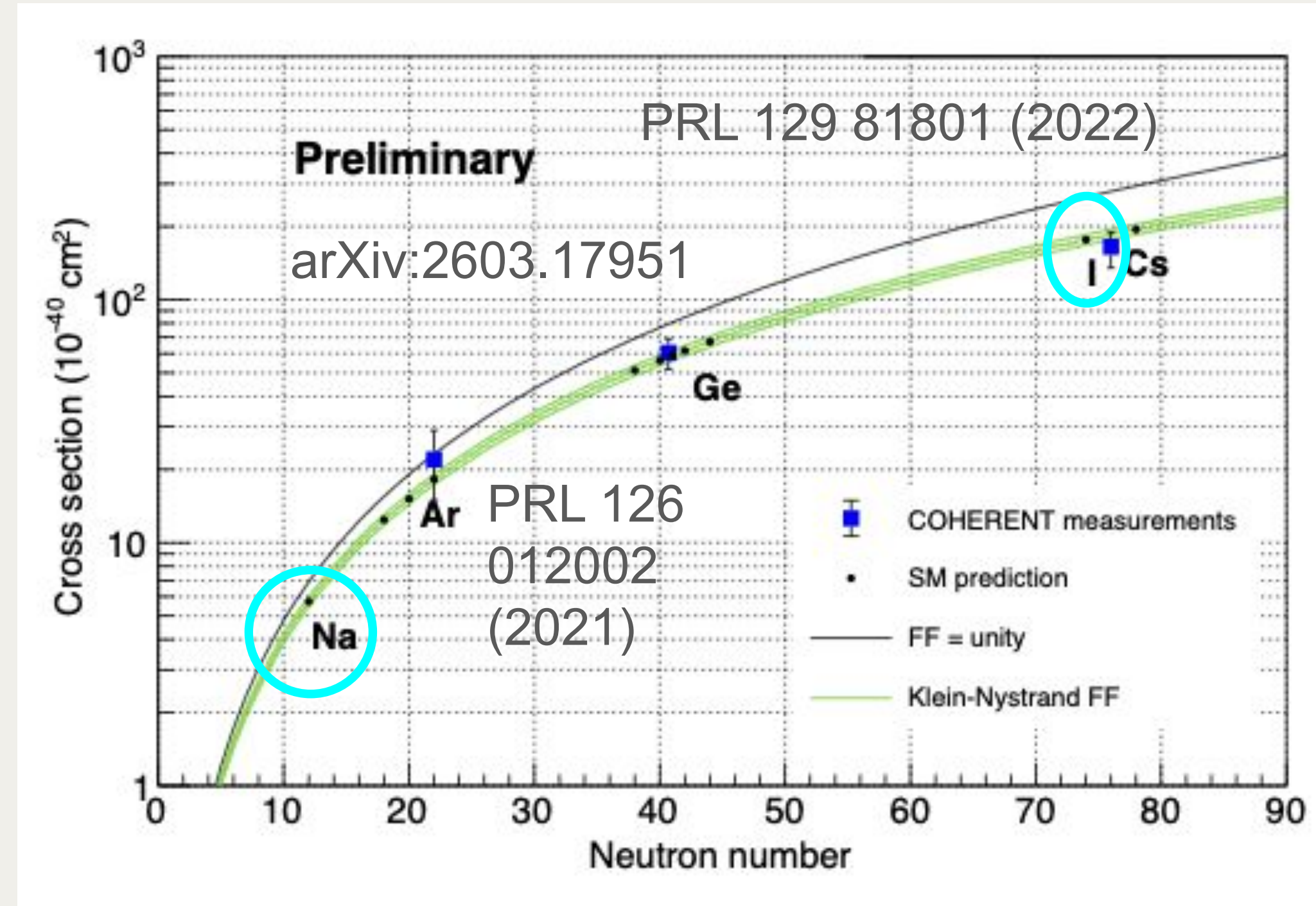
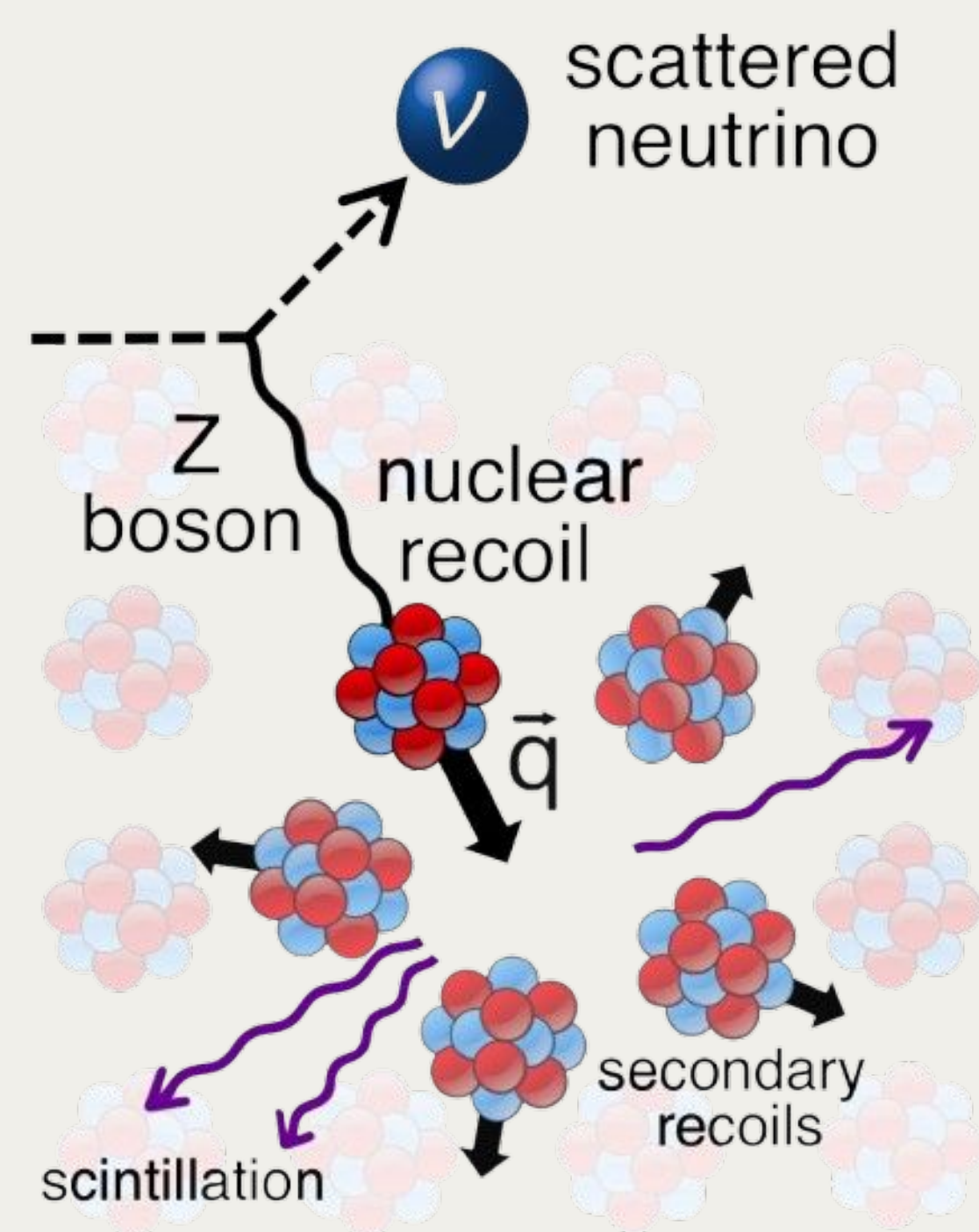


# The Sodium Iodide neutrino Experiment at the Tonne scale

## [NaIvETe] at the SNS

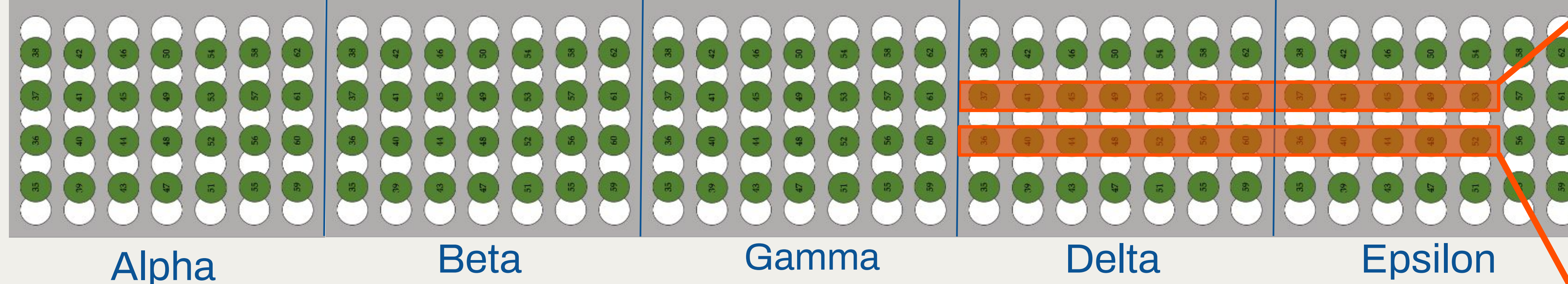
Jane O'Reilly for the COHERENT Collaboration

### CEvNS at the SNS

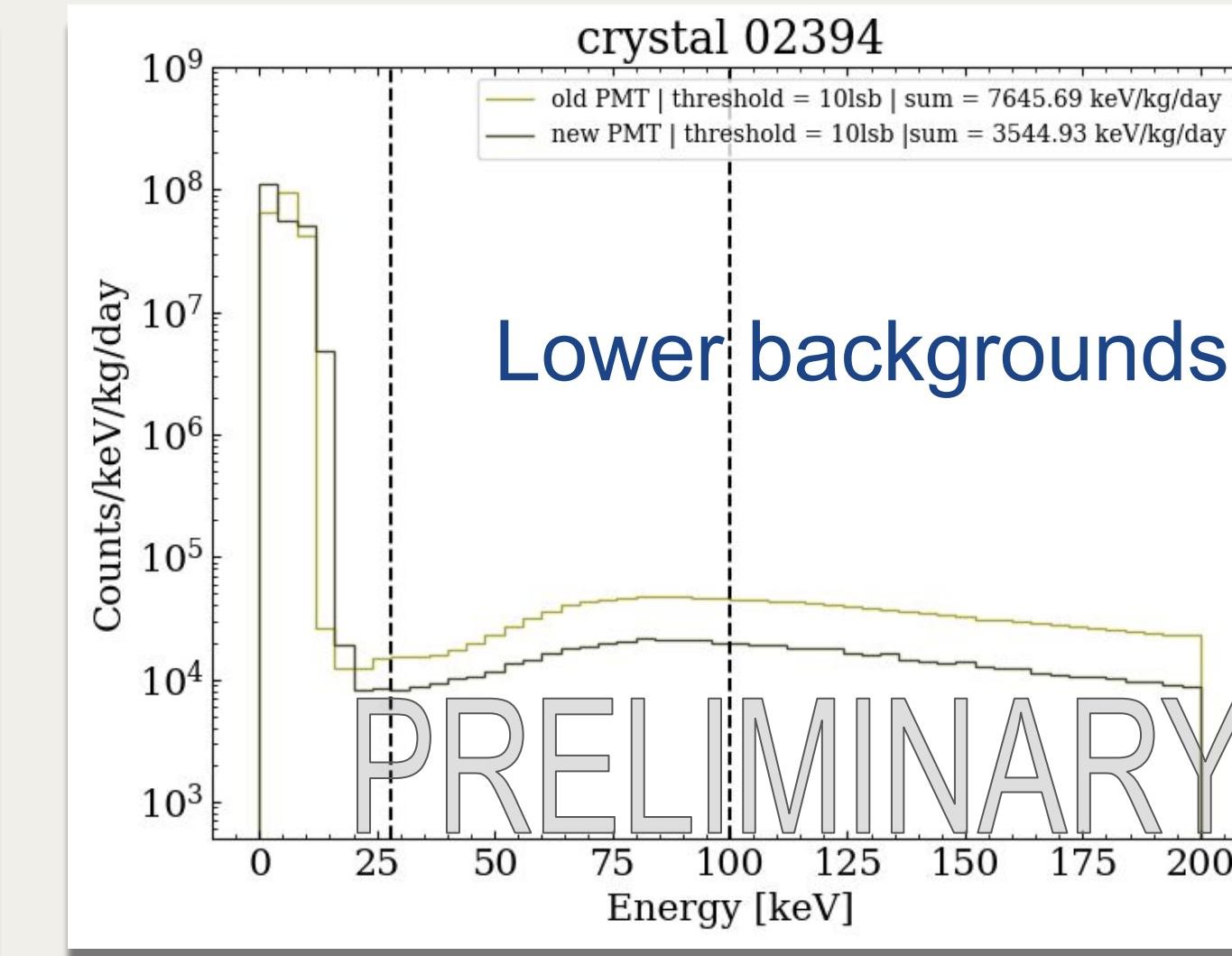
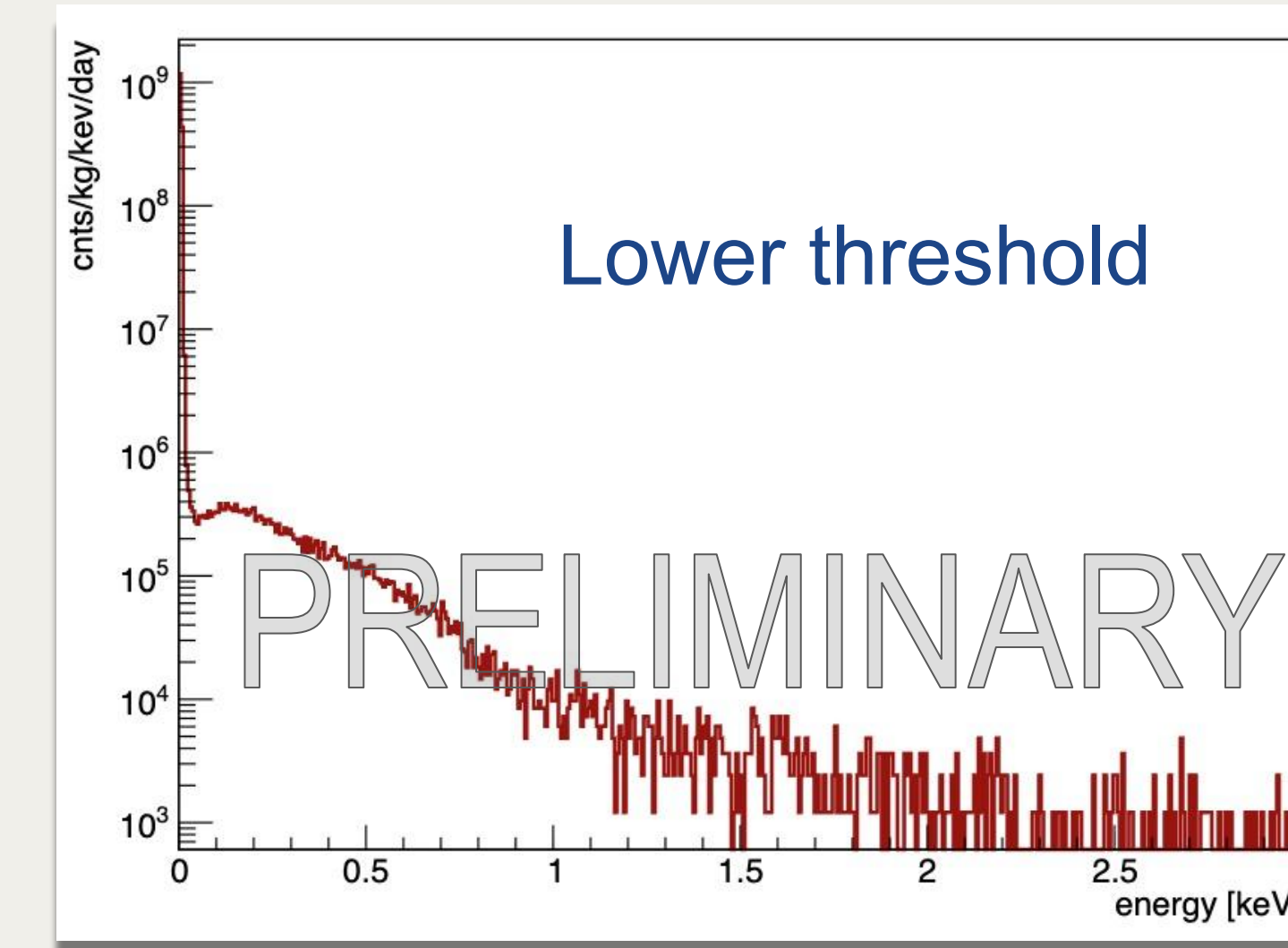


### Iodine Inner-Core Upgrade

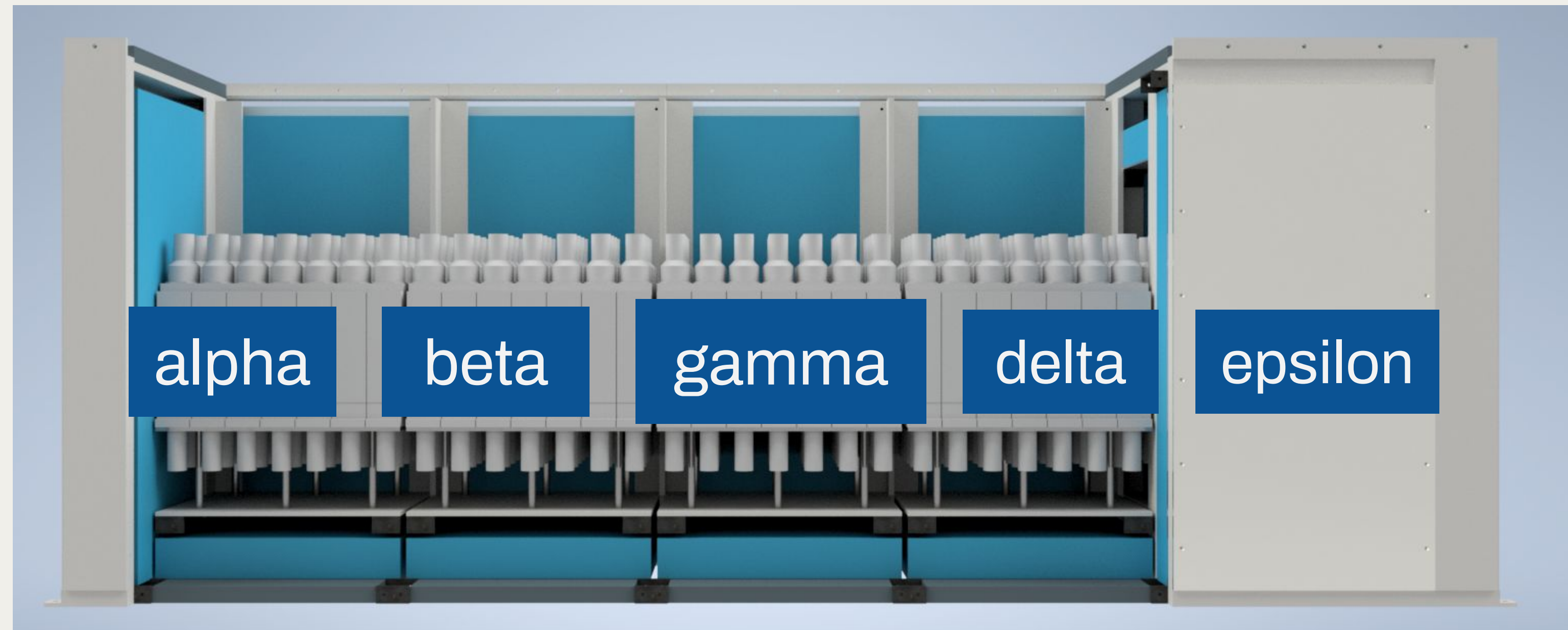
Top down view



Upgrade 24 NaI PMTs for 156kg of  $^{127}\text{I}$  CEvNS.



### NaIvETe



63 crystals/module x 7.7kg/crystal x 5 modules = 2.4 tonnes of NaI (378kg of Na + 2086kg of I)

#### CEvNS

$^{23}\text{Na}$

ROI: ~3-10keV

Light target

Test  $N^2$

Odd nucleus

$^{127}\text{I}$

ROI: ~0.5-3keV

Complementary to CsI

Separate out  $^{127}\text{I}$

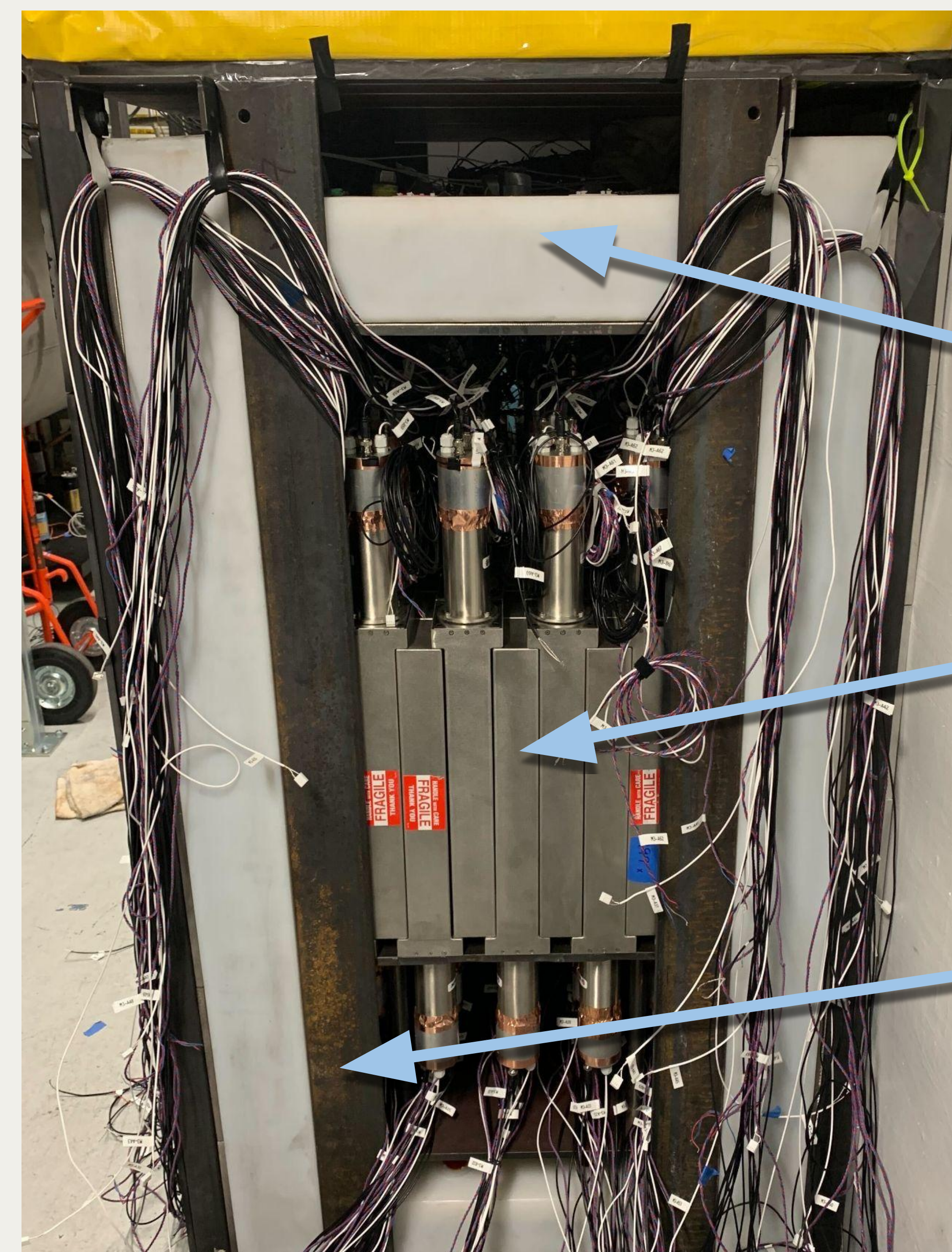
#### Charged-current

$^{127}\text{I}$

ROI: ~10-55MeV

Continue measurement from NaIvE

PRL 131, 221801 (2023)



Water shielding

Interlaced NaI crystals

Steel module

