Update from Experimental Coordinator

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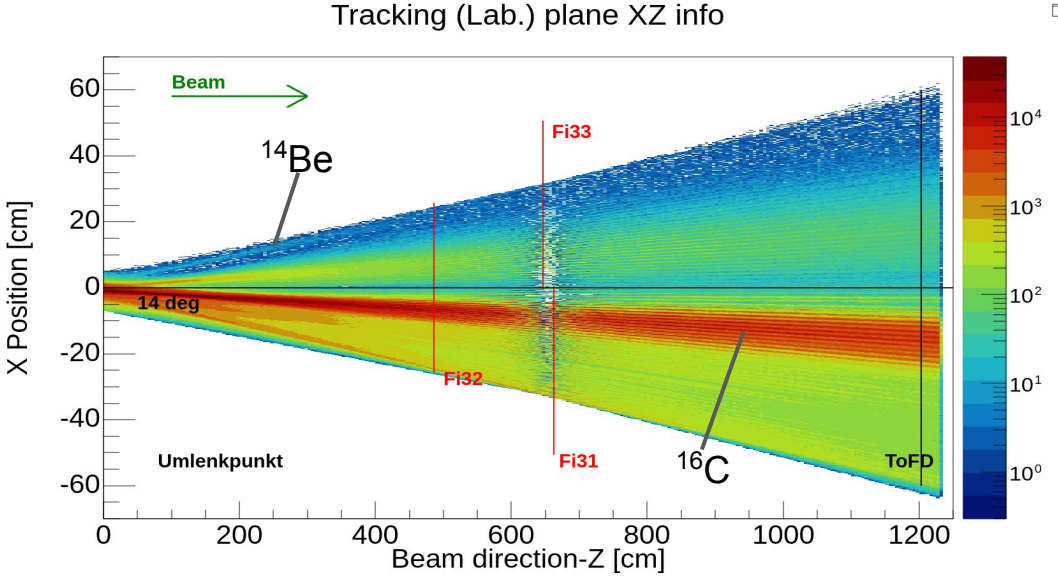
Update from 2022

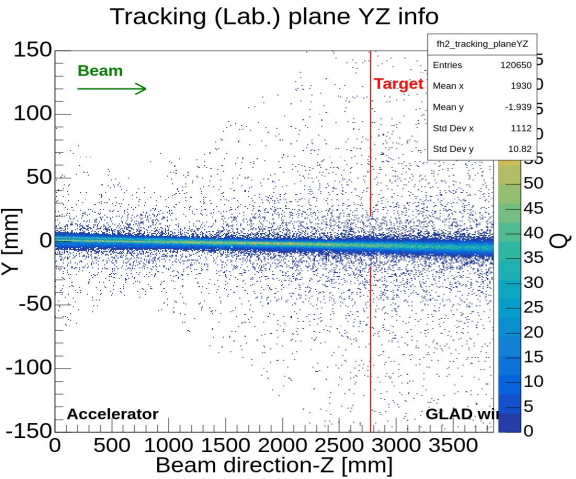
- 2 Experiments in 2022:
  - s522 - SRC
  - s509 - multi-neutron correlations at the dripline
- Ambiguous experiments
  - New detection systems
    - RPC
    - FOOT
  - New trigger configuration
    - (p,2p) CALIFA trigger
  - Branching of analysis tools
  - New graduate students

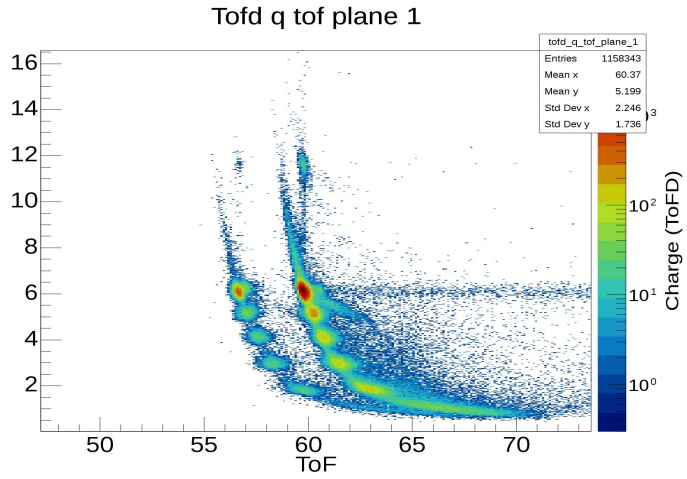
	Timeline			Test beam	Experiment
Items	May 2021	September 2021	January 2022	March 2022	May 2022
Configuration finalized					
Detector and Structure Inventory	Scint. and ½ FOOT + struc.	Sci and ½ FOOT + struc.	½ FOOT + struc.	2 FOOT missing, box modifications	
LOS/ROLU	Missing LOS scint.		LOS built		
MUSIC/MWPC			Installed into BL	Some issues w/ FW	
FOOT					Optimization needed
CALIFA	Optimization				
Fibers			Cooling system missing	Effect of mag. field	
TOFD	Missing scint. bars				
NeuLAND	Double-plane missing	Double-plane missing	Double- plane testing		
LH2 target	Components at GSI			Not available	
GLAD		Repairs	Ramped up again		
DAQ					
Online analysis					
-individual detectors				Analysis outside R3BParams dir	Some det. not integrate
-correlations				Only a few existed	
CALIFA 2p trigger			Mostly ready, needed to be tested	Ready, needed to be tested	
FRS information				Not available	

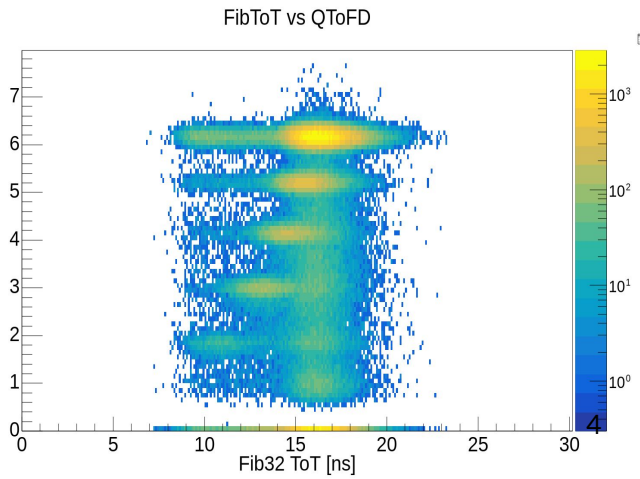
Experiment

- Limiting factor in experiment was SIS and FRS tuning, not R3B!









Elephant in the room - 2023

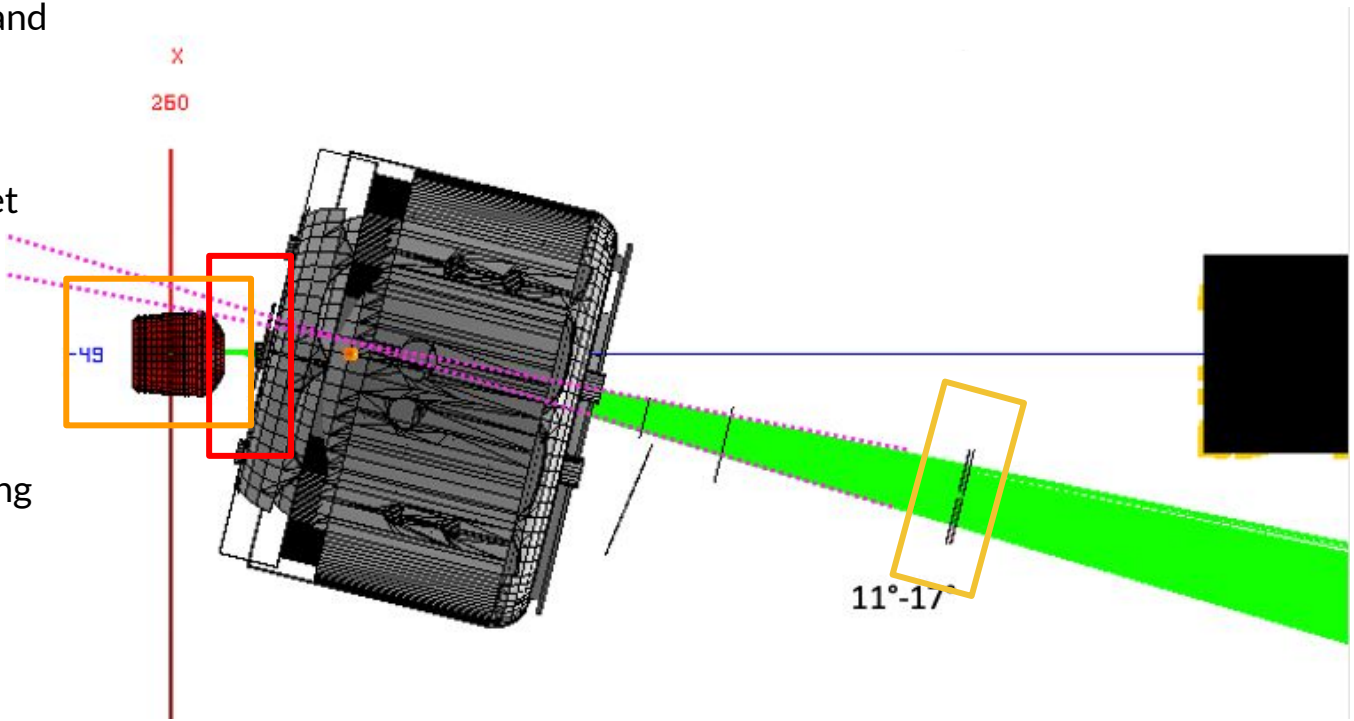
- No physics experiments in 2023
  - If beam, most likely engineering runs
- Allows for reassessment and optimization
  - Detectors
  - DAQ
  - Software
- Evaluation of future physics

Points of emphasis

1.) Between target and GLAD

2.) Around the target

2.) New TOFD cabling



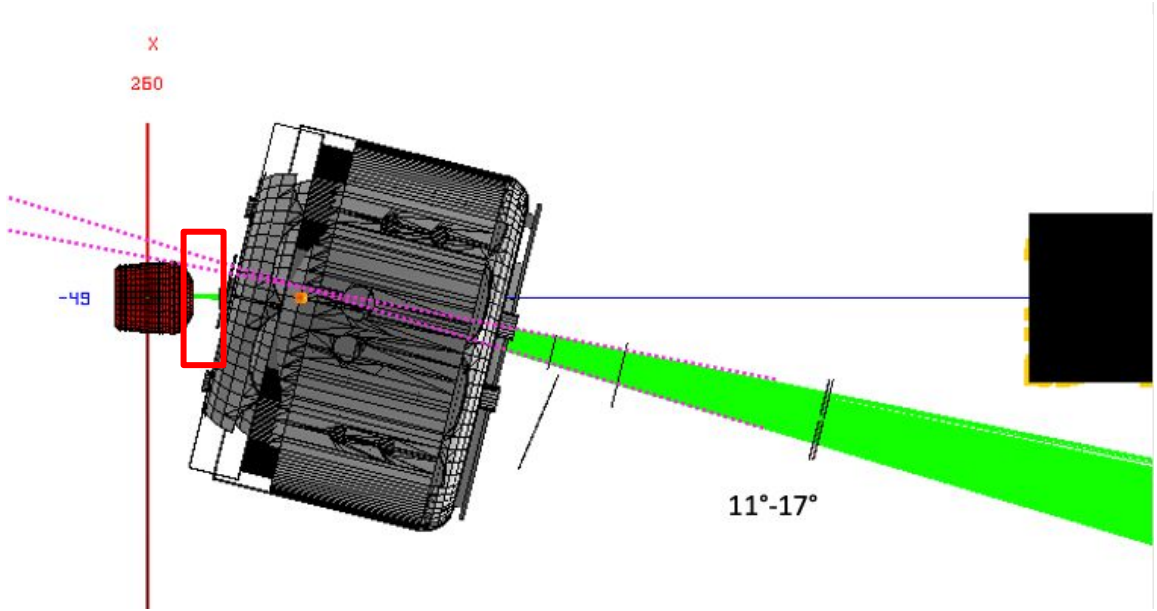
Between target and GLAD

What do we need?

- Charge identification?
- Position identification?
- What angular distribution does one have?

Options:

- MUSIC + MWPC
- mini-TOFD + fibers
- only fibers
- DSSSD Si detector



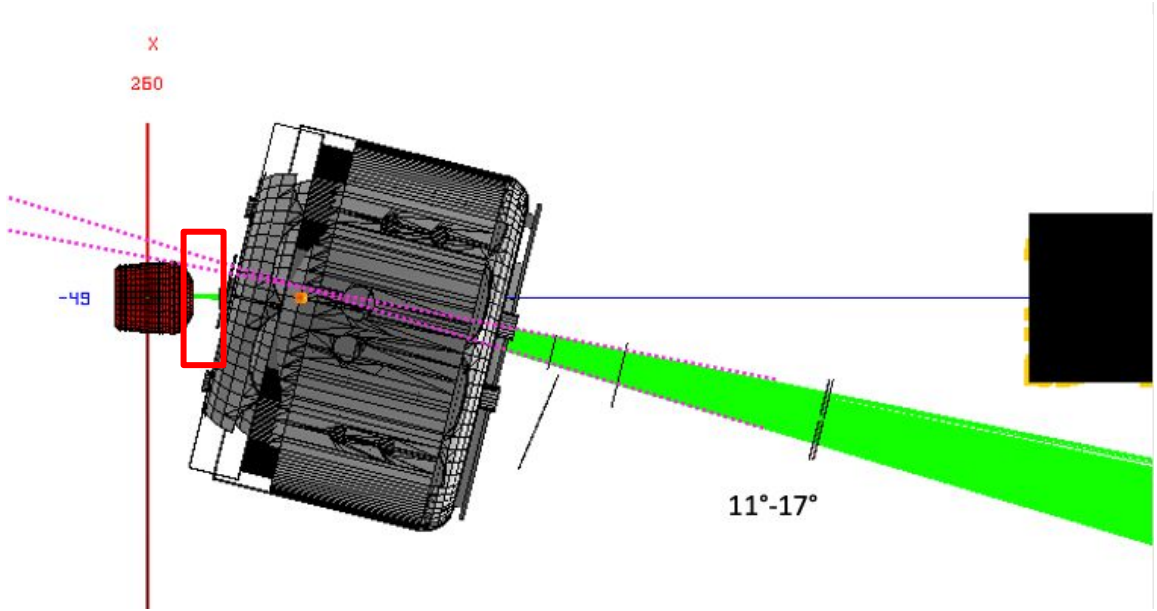
Around the target

Modified FOOT?

Future FOOT replacement?

What are the limitations of CALIFA? How can we compensate for this?

What do we need?



DAQ!!!

There is no requirement to become Bastii, Hans or Håkan

- Being able to work maneuver the DAQ
- Assemble own standalone DAQ (no major debugging is required)
- Work comfortably within EPICs framework

Software support

- Additional personnel for R3BRoot development
- Additional personnel for detector calibration optimization
  - Personnel for writing and managing test cases
  - Requirements for what the test cases should contain
- Merging of current code
  - Special care to experiment specific modifications

Focus on Documentation and Training

- Documentation:
  - Update wiki pages
  - Need to assess what we need
- Bridge the gap particularly for new members of the collaboration
  - R3BRoot week
  - DAQ, slow control, etc sessions
  - Detector and electronics sessions
- **Essential for the success of our students and collaboration**

Recommendations for future experiments

- Spokesperson is in charge of everything
  - Ask all the questions
- Seeking out expertise as early as possible
  - More expertise on detector systems needed
- Start preparation early
  - At least 6 months in advance for existing detectors
    - 18 months for non-existing detectors
  - Set up should be finalized by summer R3B Collaboration Meeting
- To Do lists
- Regular updates from all WGs
  - Phase-0 meetings
- Need for test beams for new detectors
  - Either at GSI or other facilities
- Status reports of detectors or devices after experiments
  - Participation and analysis of last experiment

Thank you for your attention!
Questions?