Setup OREO/e+BOOST

T9 beamline - Week 23-25

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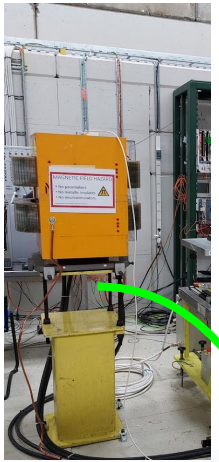
Beamtest goals

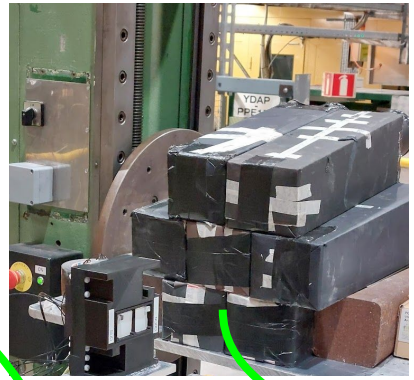
OREO

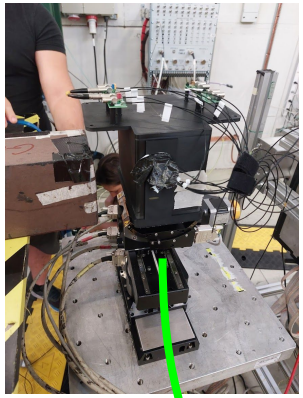
- Test a **full prototype** of a oriented crystal based electromagnetic **calorimeter**
- Longitudinally segmented
  - First layer (~ 5 X_0): 3x3 matrix of **oriented crystals**
  - The **remaining part** (~ 10 X_0) is a 3x3 matrix of the same material, but the crystals are **non oriented**
- After proving that it is possible to **glue together** different crystals keeping them **interalignd**, a full prototype has been realized.

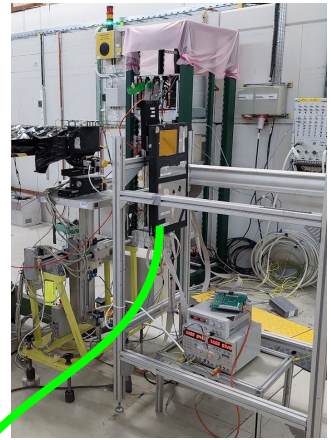
e+BOOST

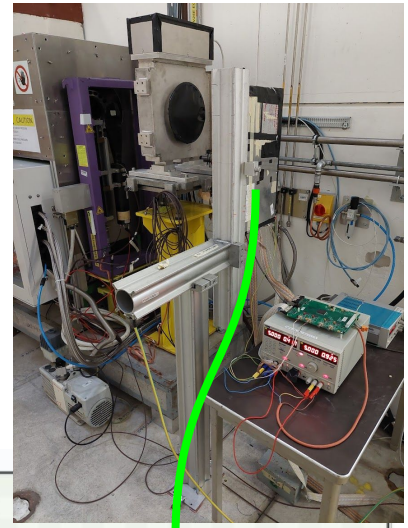
- Test of different crystal samples for an **oriented crystal based intense positron source**
- - Test of different **Hybrid Source configurations** to be compared with the amorphous (conventional) case

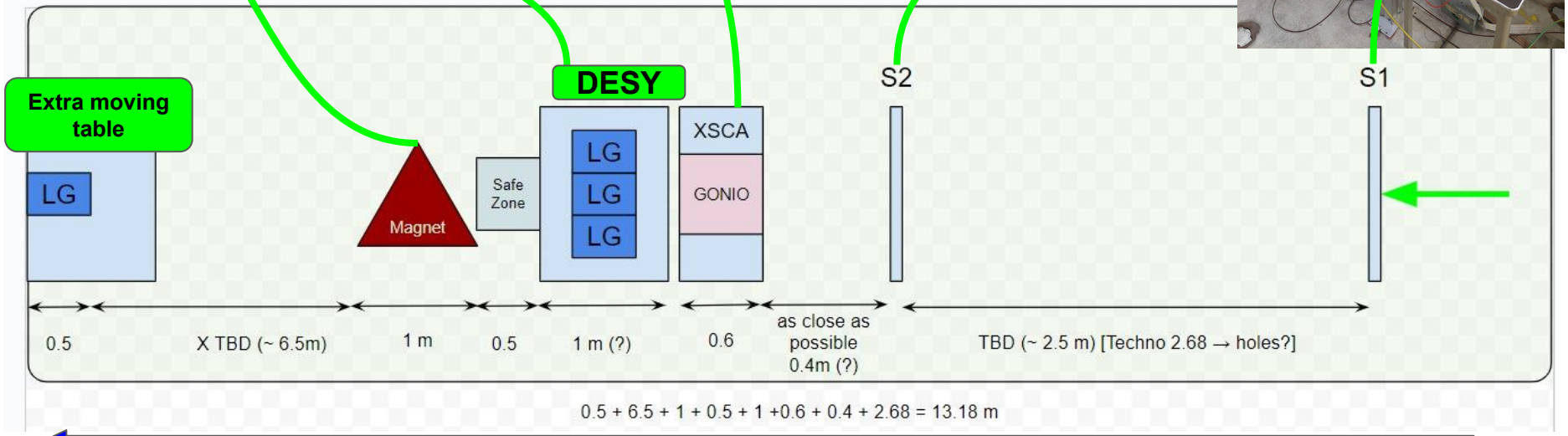












BEAM DIRECTION

Beamline equipment required (1)

- **Rack** for installing two crates
- **Bolts** for fixing BC1 right after XCET48
- **Bending magnet** installed 7m before the end of the beamline
  - Check where we used to install last year, whether is or not the same (but it should not…)
  - Check setup layout to better understand the distance wrt the end of the beamline
- 1 **XSCA table** for the crystal samples
- 1 **Desy table** for the 7 Lead Glass electromagnetic calorimeter (~ 350 kg)
- 1 extra moving platform at the end of the beamline, to install a single lead glass (~ 50 kg).
  - It can be either an XSCA or a Desy, it’s not that relevant
  - This way we can switch between the two setups without the need of the crane to move the aforementioned Desy table

Beamline equipment required (2)

- XCET44 and XCET48 **signals** directly in **experimental area** (not in control room and then through the patch panel) in order not to introduce too much delay
- A couple of **ordinary tables** (the ones that are usually in the experimental area are perfectly fine for DAQ pc and for organizing the material
- Few **rubber cable glands** for routing signal cables from detectors to the rack
- Few **lead bricks** (10 cm along one direction) to support the 7 Lead Glass layout (check 2nd pic of layout slide)

- BC2 does not require additional bolts, as it will be installed on a self-supporting table made of bosh rails

Beam required

- **Tertiary focussed beams** in the **1-6 GeV/c** range as the one used in the past years by STORM/Techno-CLS/OREO are the main configuration we'd use to run
- A secondary **mixed hadrons beams** of **8/10/12/15 GeV/c** may be useful to acquire some points at higher momenta
- A **6 GeV/c wide beam** with parallel optics may be useful in the preliminary alignment phase to ease the centering of the crystals wrt the beam
- A beam with a high percentage of MIPs (which can be, of course, any of the secondary beams)

Thanks for your attention

If you have any questions, I’m here!

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