



- For the next future:**
- what is going to happen**
 - which kind of help is needed**
 - which development is necessary**

13 June 2018

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A lot of work has been done but there is a lot more still to do...

Different distances, materials and parameters for Intermediate Tracker (see talk by E. Spiriti)

Gap between scintillator bars (see talk by M. Morrocchi)

New geometry of calorimeter, plastic boxes,... (see talk by P. Cerello)

Different thickness of MSD, spacing, layout... (see talk by L. Servoli)

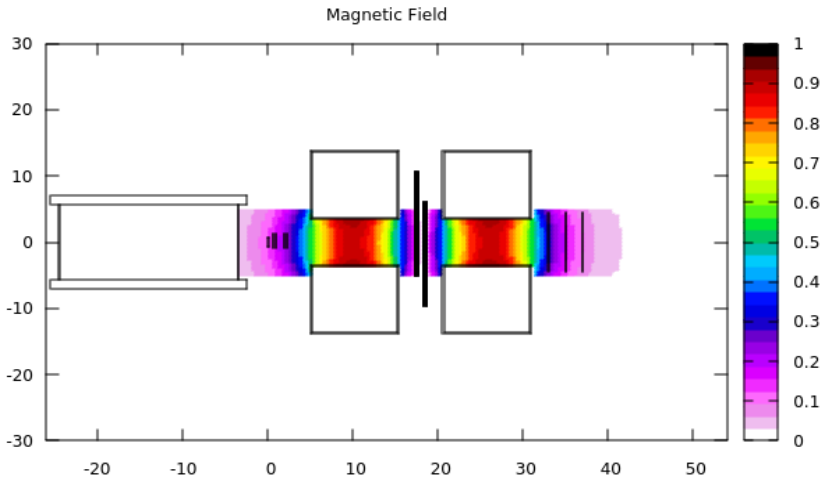
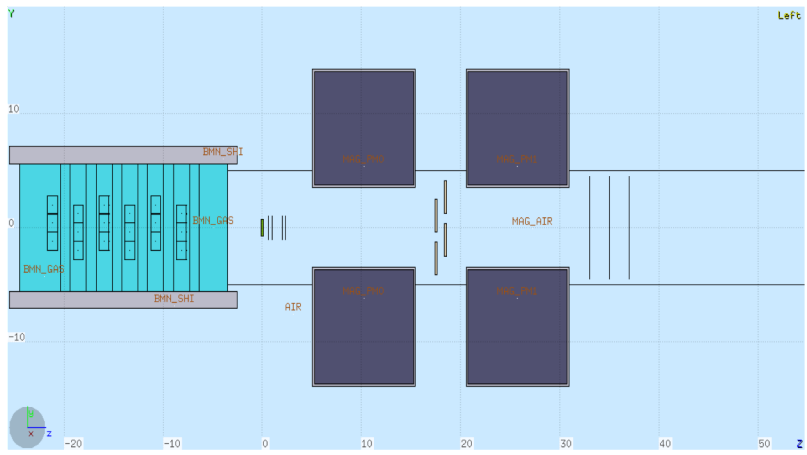
Soon we shall hopefully have a new magnetic system layout

...

Man power with the proper training is insufficient. This is now a bottleneck

V14.2

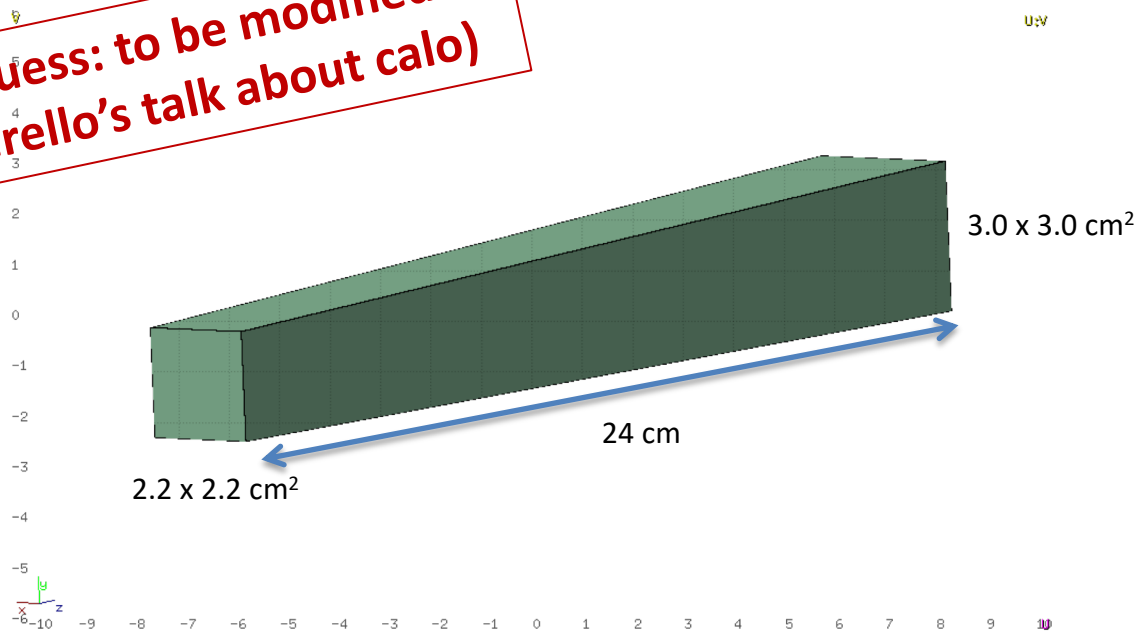
- Single magnet length 10 cm
- Center-to-center distance of magnetes: 15 cm, gap ~5 cm, as recommended after FOOT Mech Meeting
- ITR and MSD shifted downstream



It will be not like that
 Definitve design does not exist now
 However: there was confusion about length of magnetic material and mechanical length:
 Magnetic map is not fully consitent...
 Alumiinum cover will be different...

New BGO Crystals (truncated pyramid)

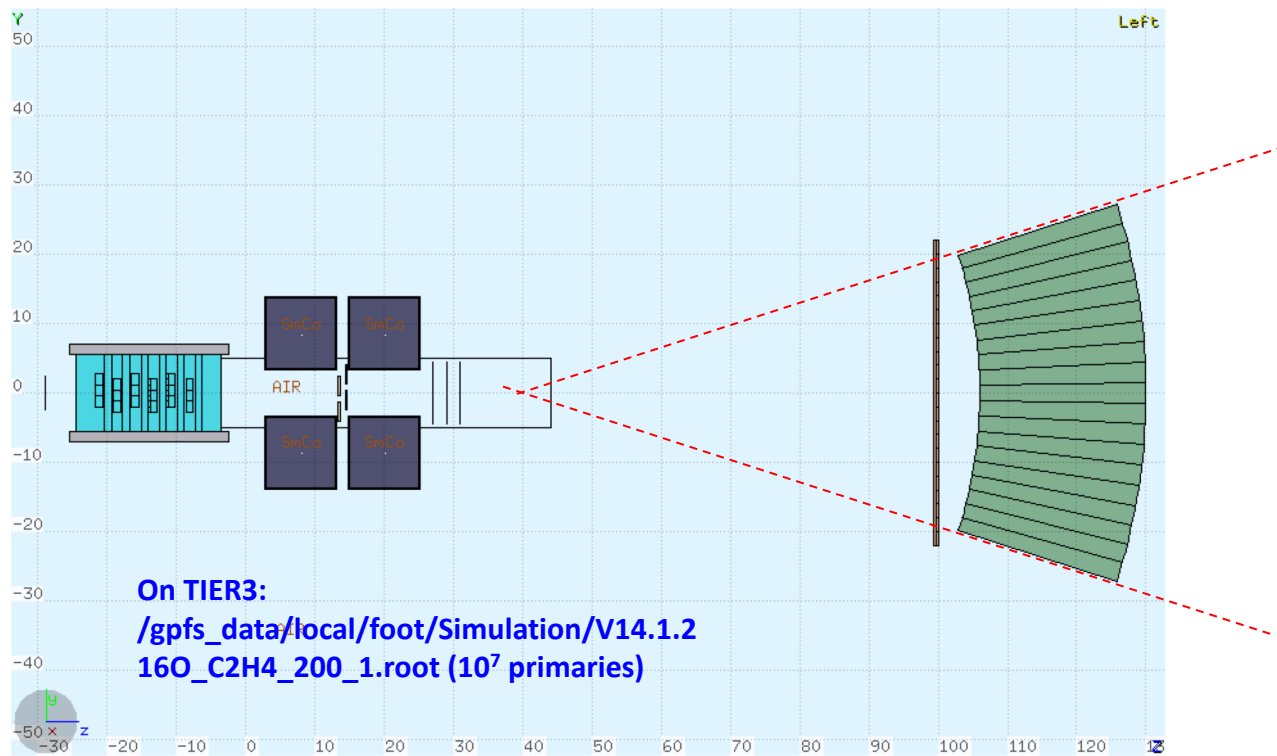
Initial guess: to be modified!!!
(see Cerello's talk about calo)



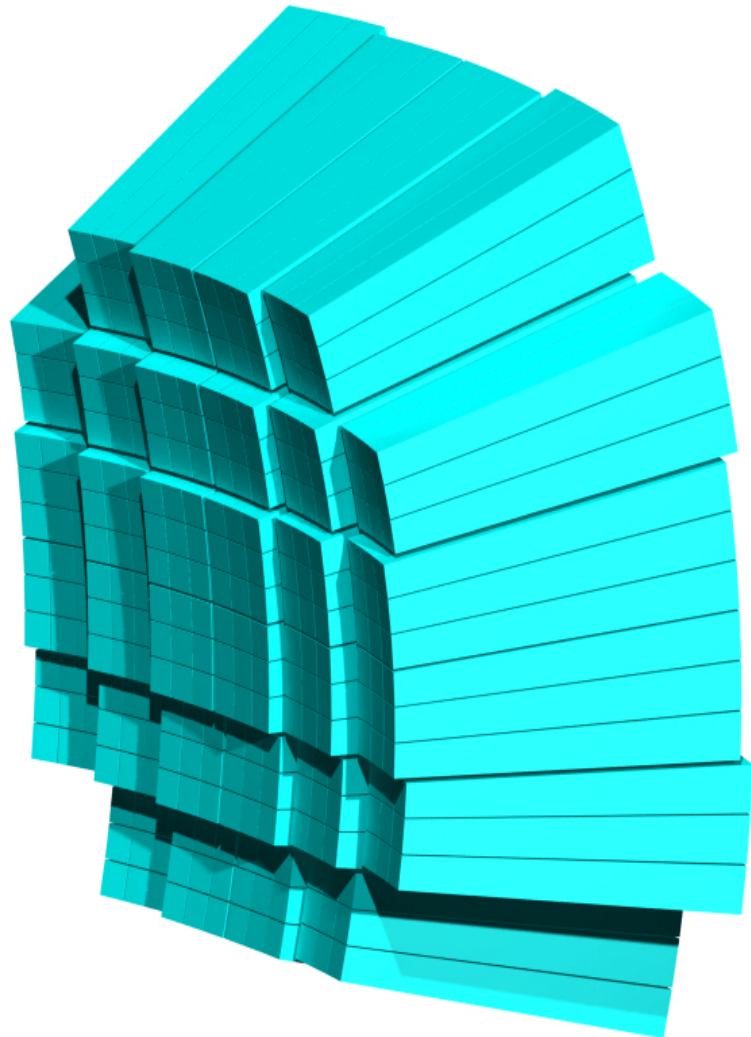
**More difficult job: it's not a simple body in FLUKA, it has to be built using planes with arbitrary orientation in space (PLA body).
Classes for SHOE not yet implemented!**

V14.1.2: very first implementation of new calorimeter design in FLUKA geometry

naif design

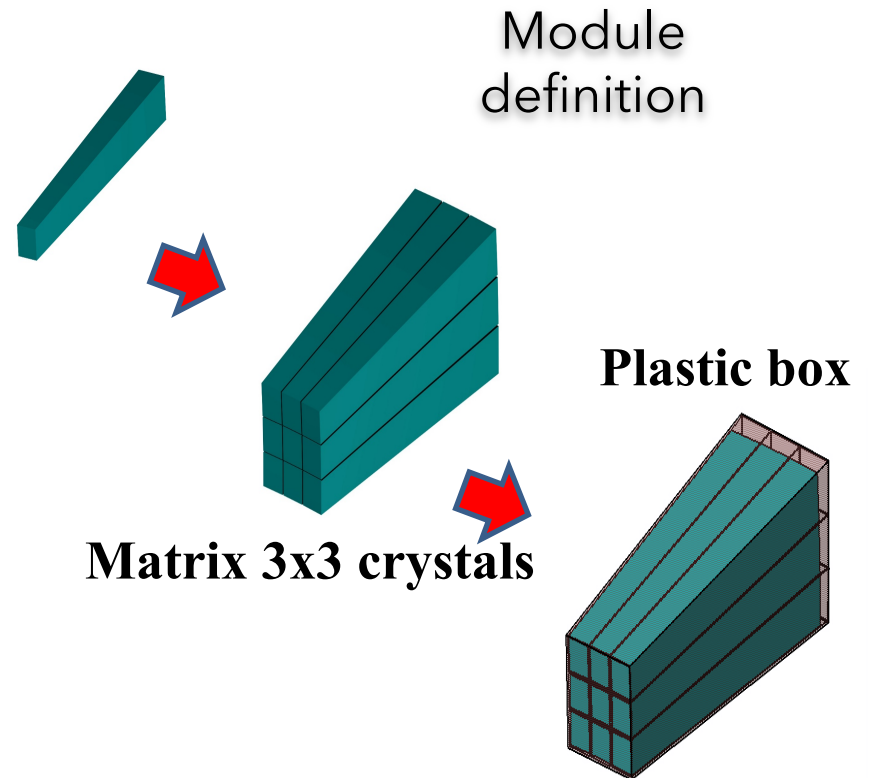


A more realistic layout (see slides at Coll. Meeting)

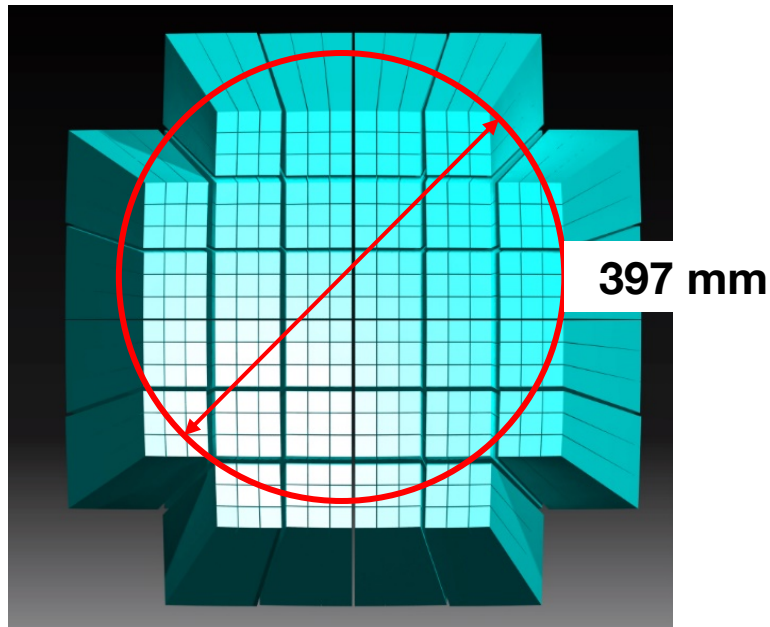


Calorimeter Modules layout

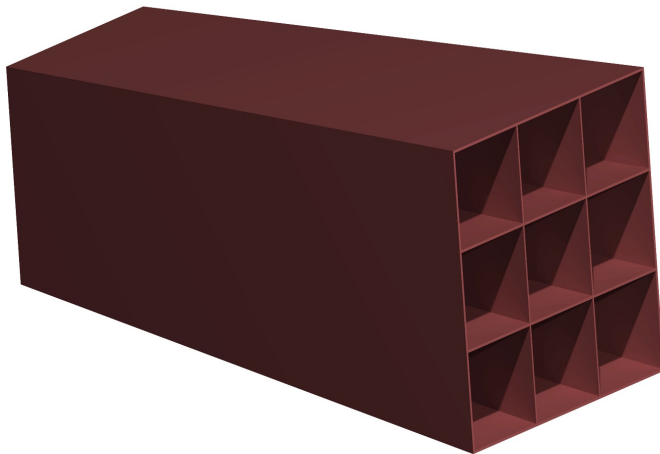
**arrangement of 32 modules
1 plastic box design**



Modules layout - front view



Module case

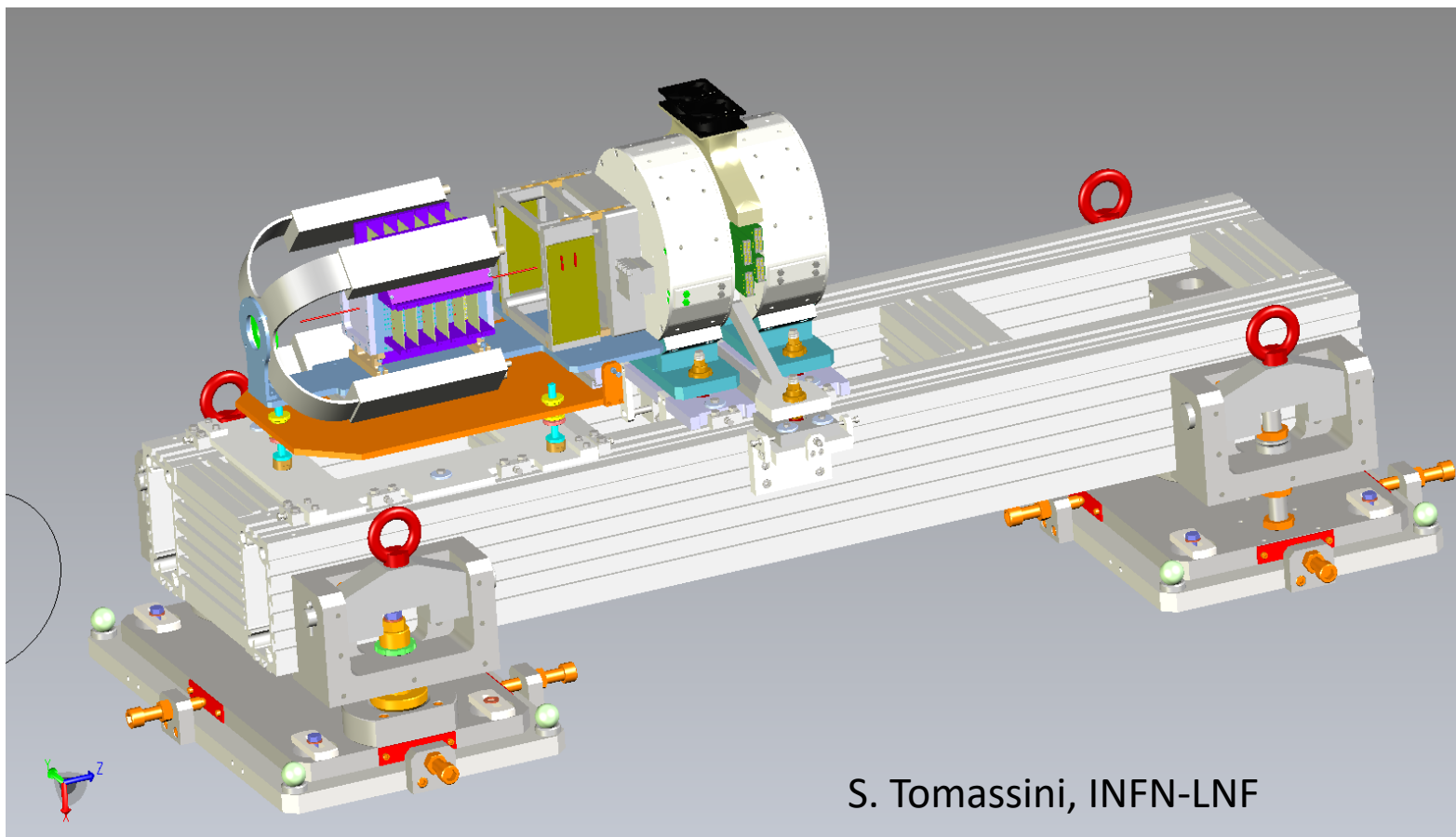


The box houses 9 crystals
ABS reinforced or similar material
 $E \approx 4$ GPa

Full mechanics around FOOT?

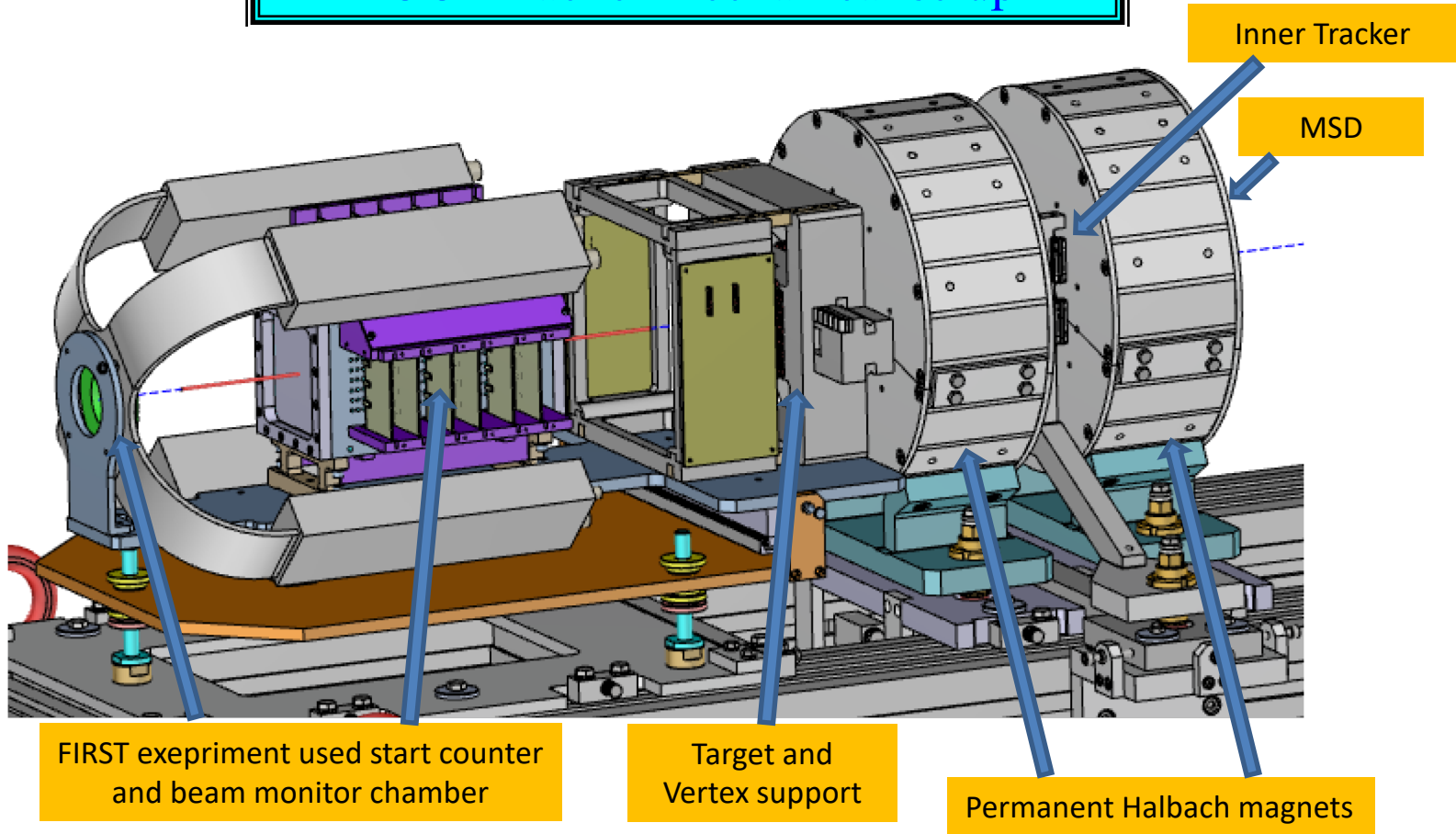
The (delicate) interaction + magnetic regions has a unique movable assembly (~ 150 kg x 150 cm)

Clone of a structure used to move aligned accelerator section for ELI European project

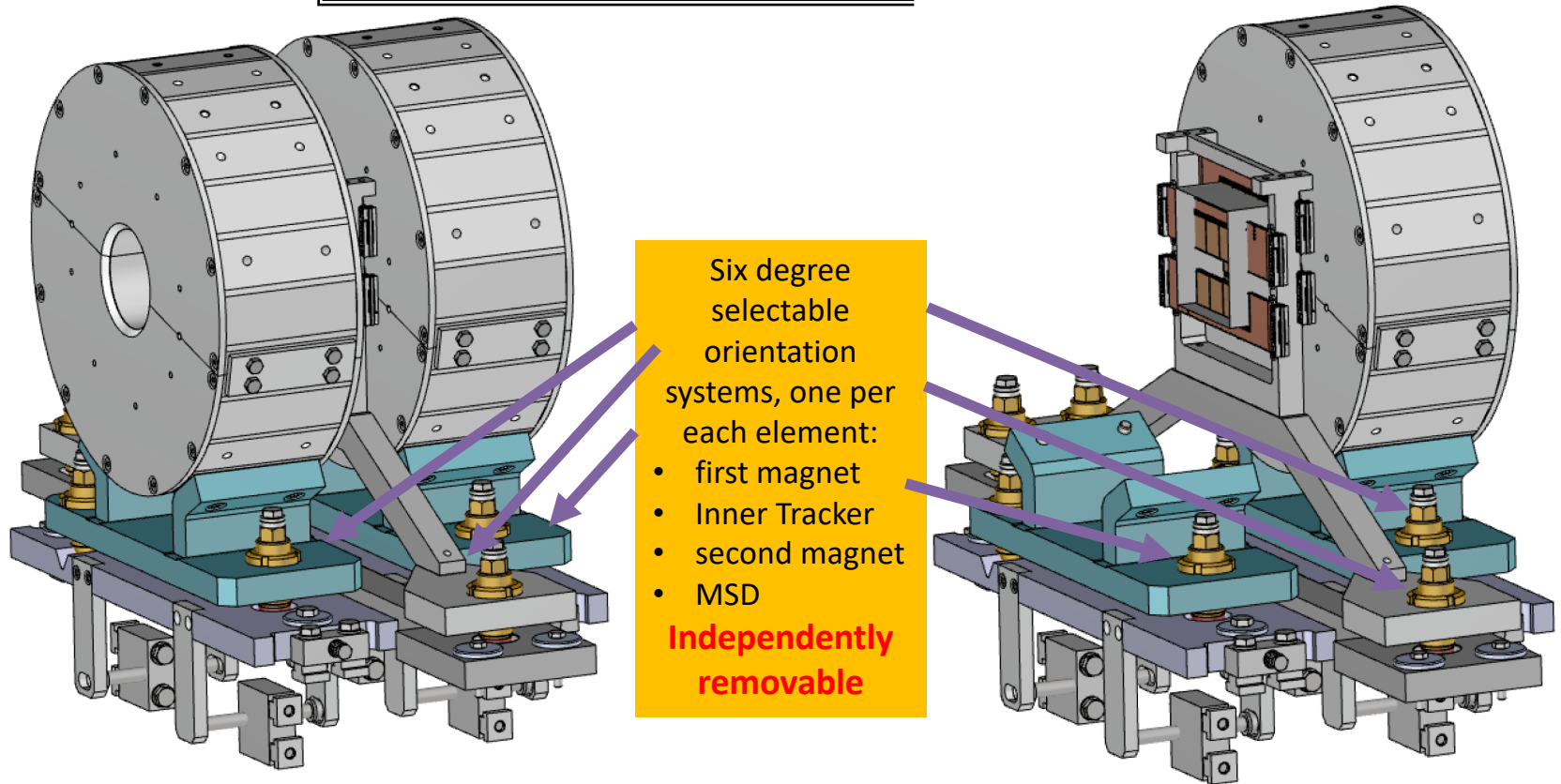


S. Tomassini, INFN-LNF

FOOT tracker mechanical setup



FOOT tracker mechanical setup



Bookkeeping

We need to be coordinated

There is a risk of forking

There is a risk of producing a variety of versions generating confusion

There is a risk of generate and propagate mistakes (geometry is the most probable issue)

How do we organize ourselves?

Some advanced topic

Our customized FOOT output of FLUKA is not complete...

Example: we realized that we do not record the residual nuclei after a collision..

This requires work on user routines (and in particular on `mgdraw.f` + `UpdateCurrentParticle.f`). This cannot be shared...