The cosmic trigger for the Large Prototype

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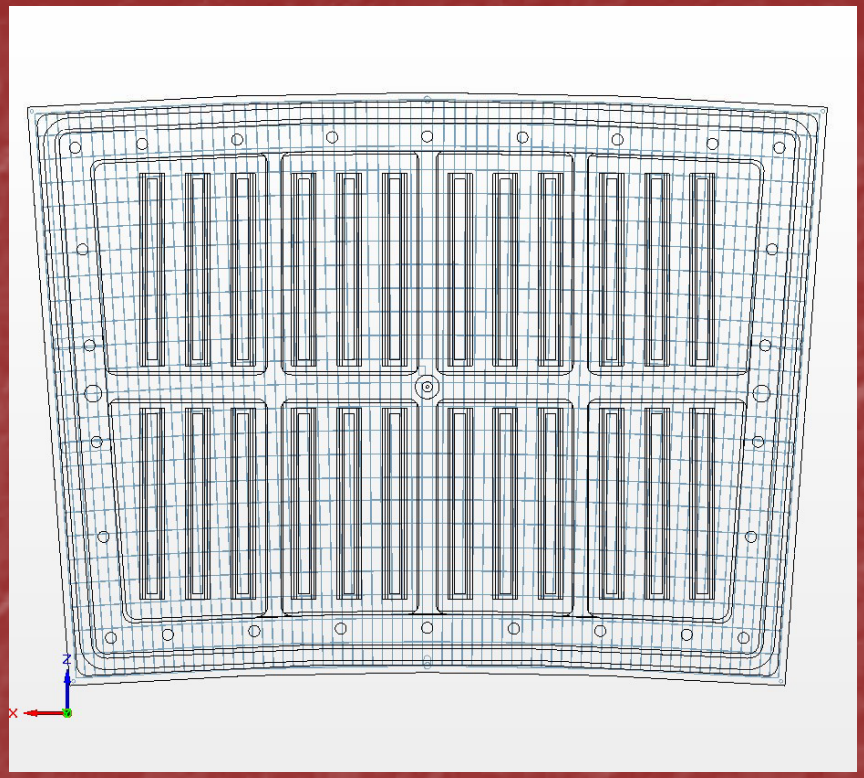
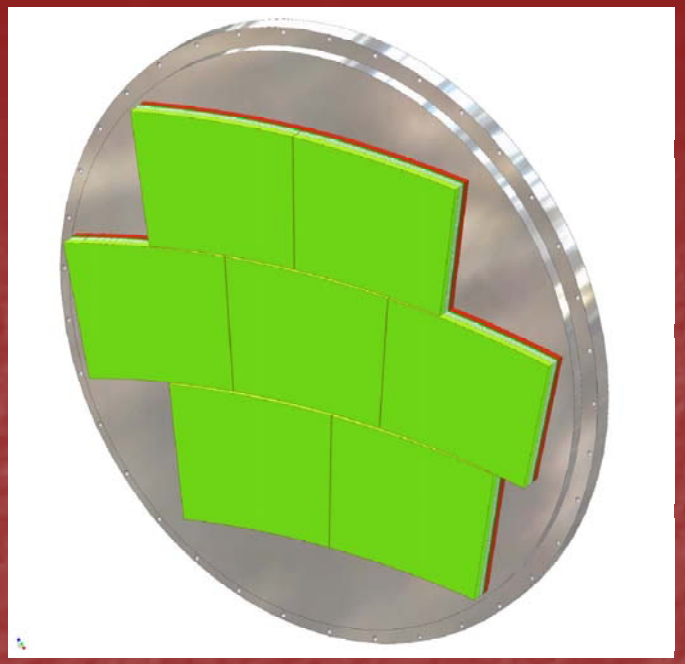
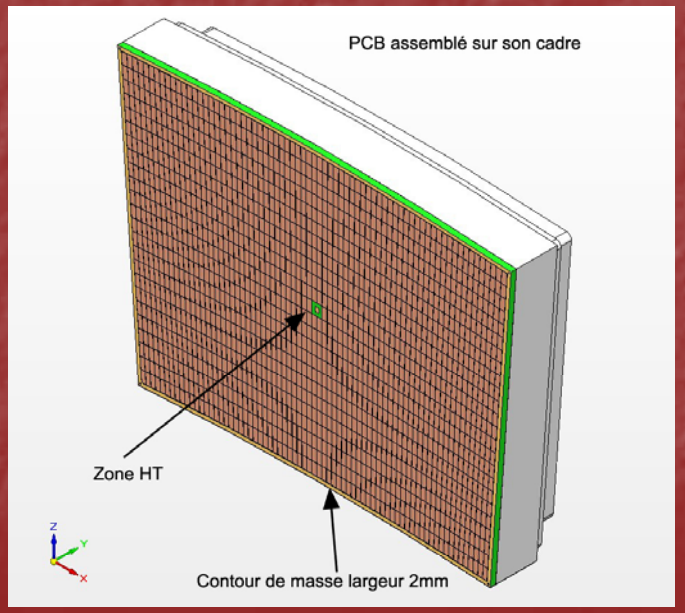
The Large Prototype







Cosmics in March 08

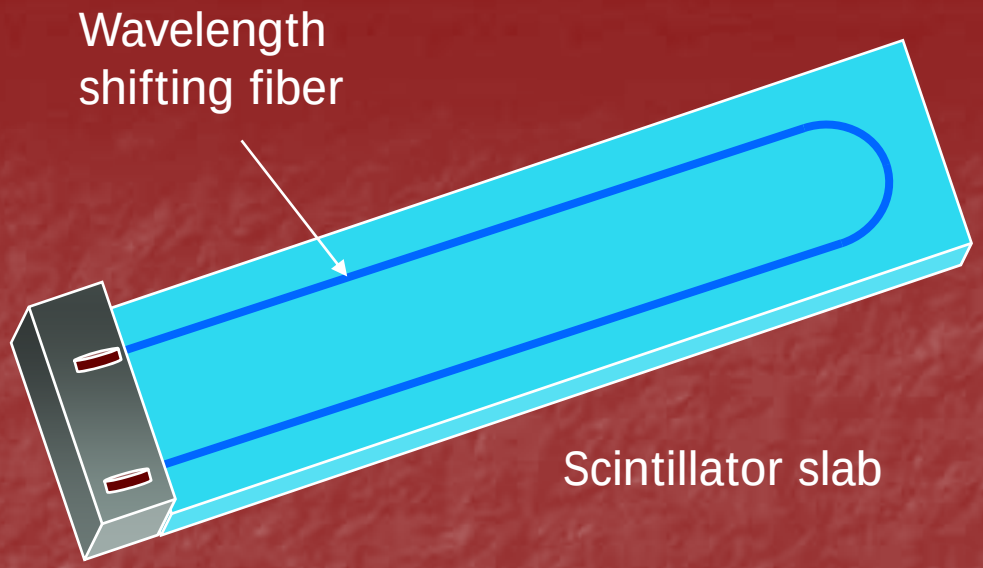
Beam summer 08

7 panels mid 09

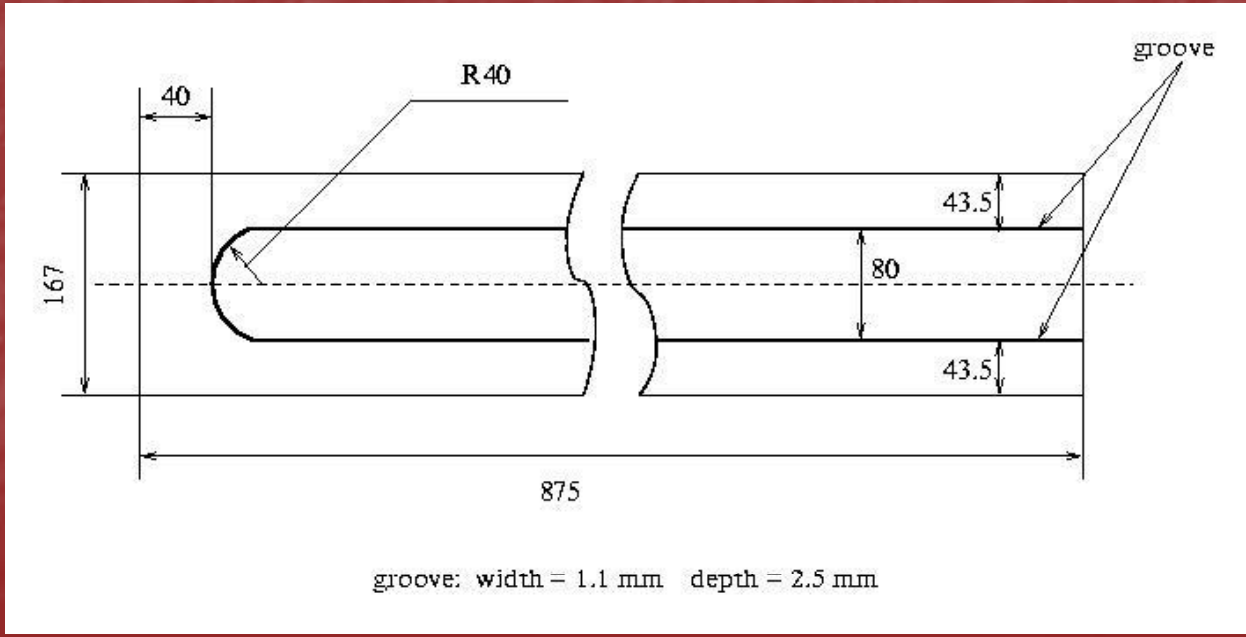
RECENT CHANGES

Go to U-shape fiber groove

Slab width changed to 167 mm (better extrusion)

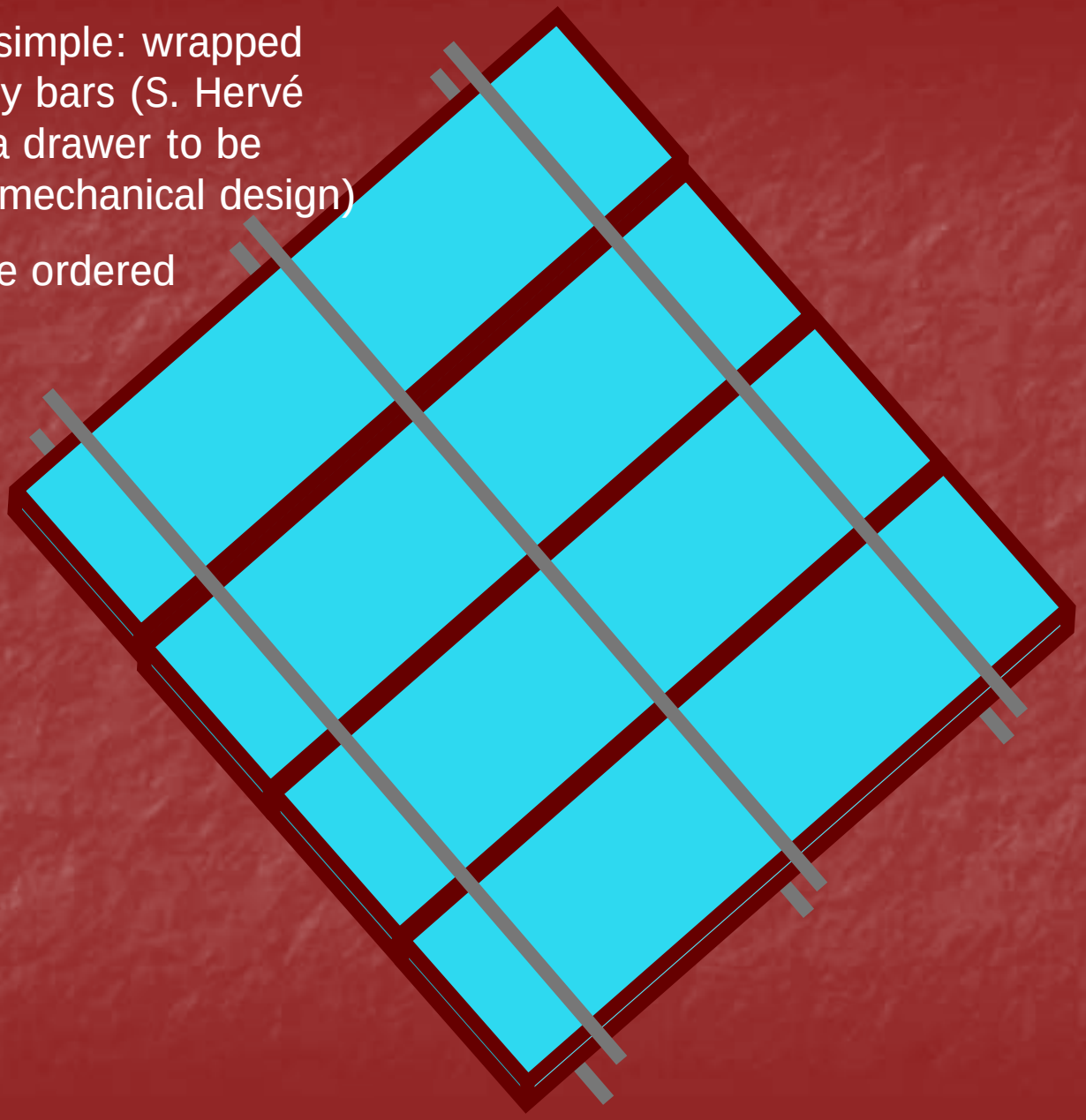


Y. Kudenko



Mechanics can be simple: wrapped slabs maintained by bars (S. Hervé for the wrapping, a drawer to be indentified for the mechanical design)

Tyvec diffuser to be ordered



Present layout:

12 slabs (+ 3 spare)

Many possible combinations, for instance:

1 top + 1 bottom : central region of central panel

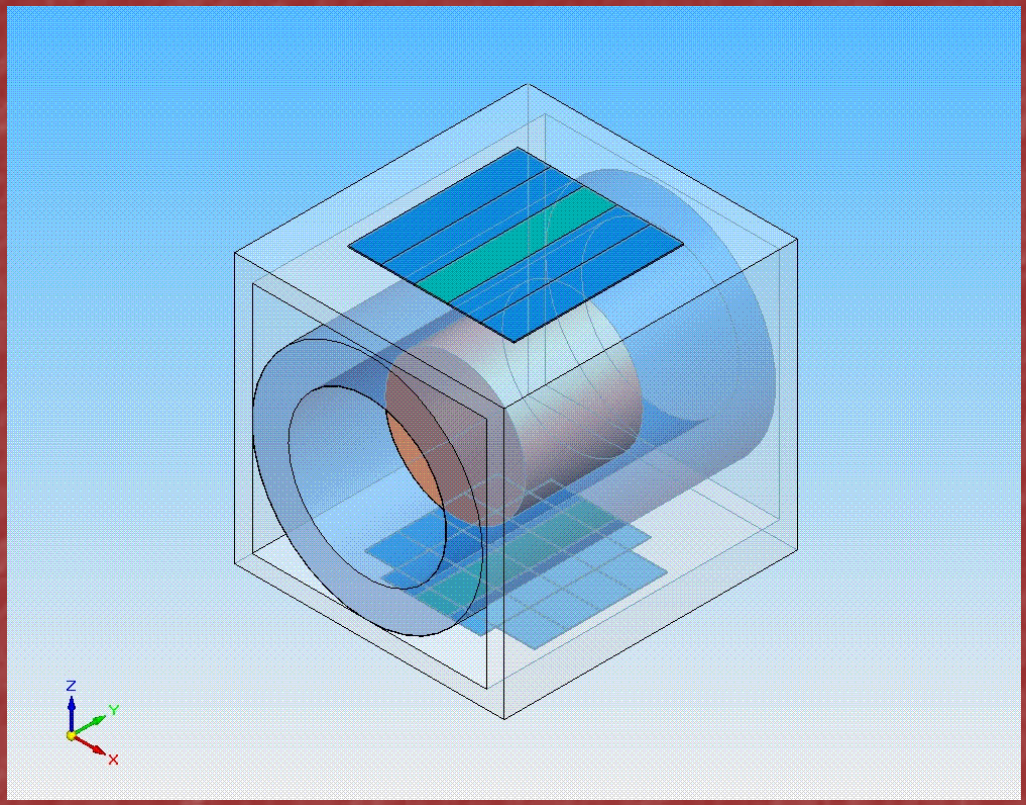
3 top + 1 bottom : radial tracks on central panels

3 top + 3 bottom : vertical tracks on most of the central region

Requires a ‘bridge’ to support the magnet and its movement system.

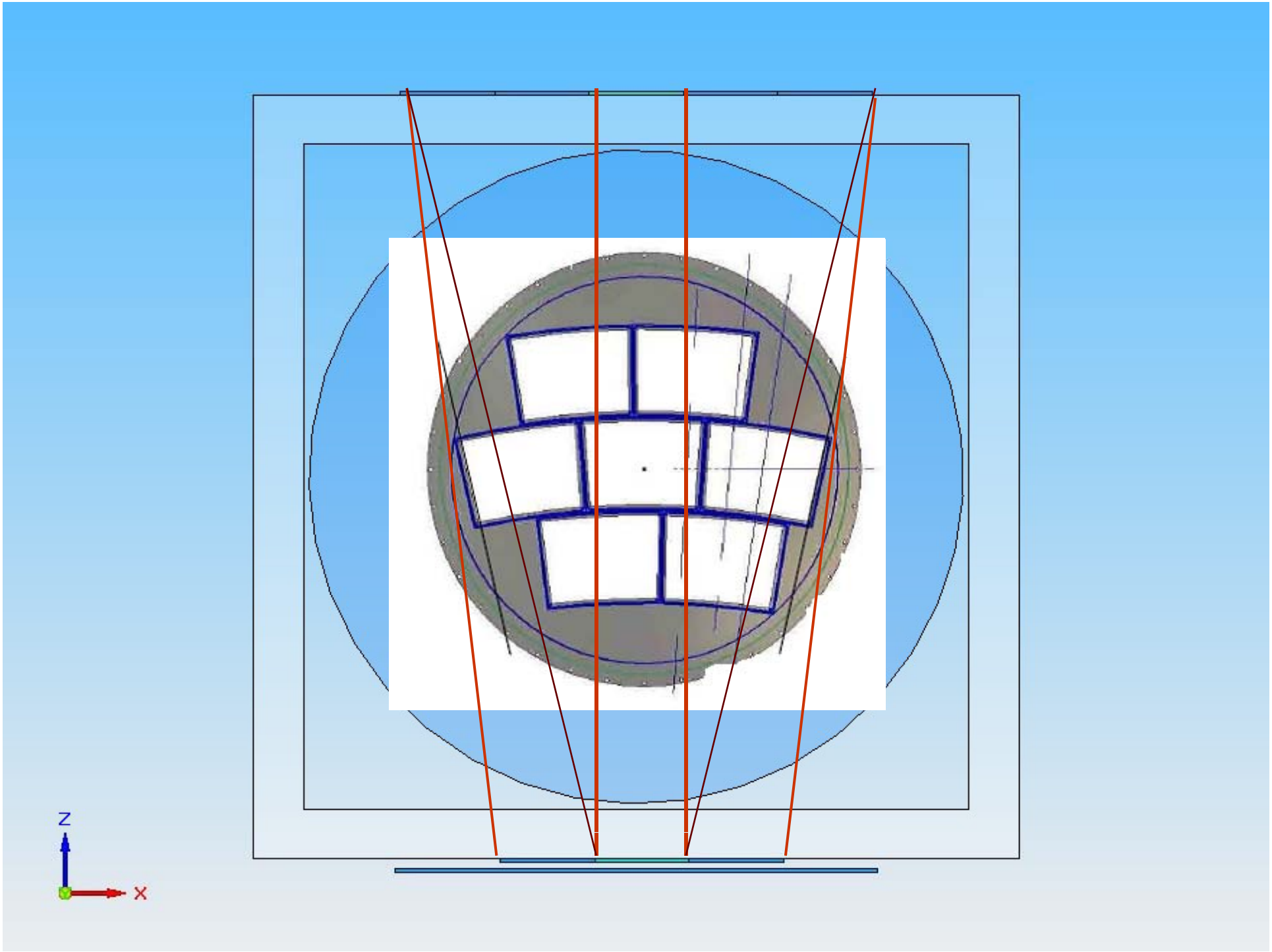
Mechanics to be discussed on site

5 slabs on top



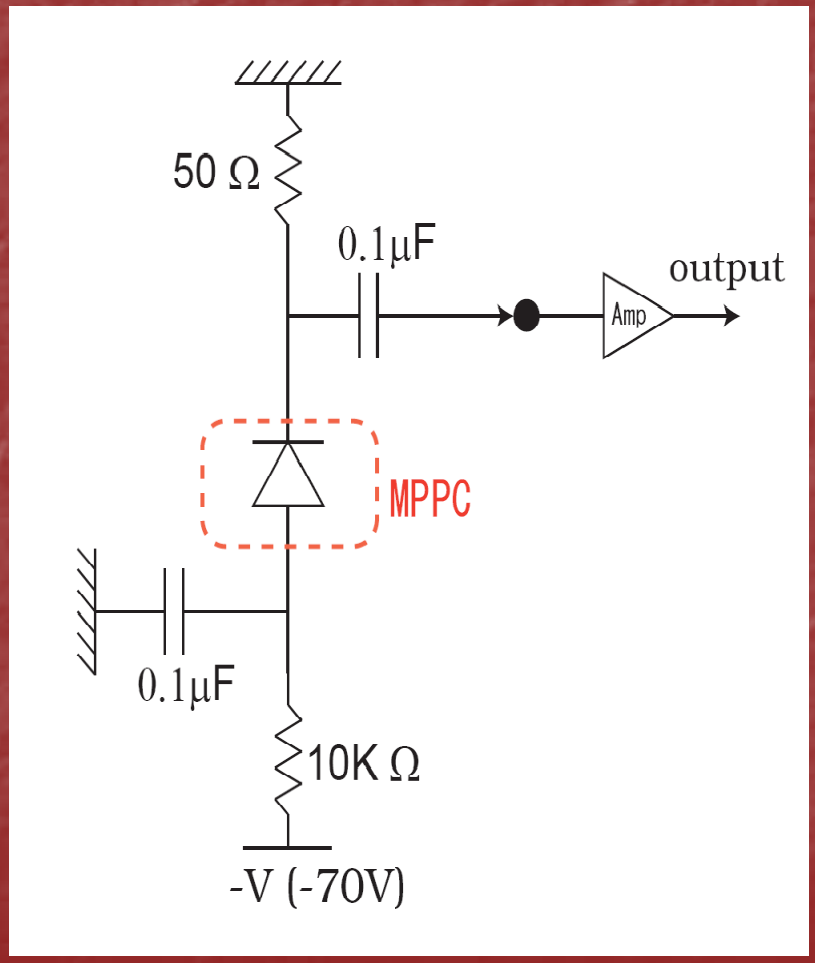
3 slabs at bottom

+4 perpendicular to limit the triggers to the detector length


Z
X

First step : hands on MPPC

- Build a box with 1MPPC and one diode and a readout circuit (T. Chaminade, S. Turnbull)
- Advices from J-Ch Vannel (Polytechnique), H. Kuroiwa and Y. Kato, and KEK/IPNS R&D



Second step : choose supplies

- Must be accurate and stable, low-ripple, especially around 70 V. Candidates:
  - Keithley 2612, Keithley 237
  - Modules from NIKHEF (Jos Steijger) in a Caen SY527 crate (K.Delmeht). But maybe not accurate enough
- Need also 24 channels of PMT amplifiers (if long signal cables possible) and discriminators, coincidence units

Third step : design readout and temperature control (J.-M. Reymond)

- 3 parts top, bottom parallel, bottom perpendicular.
- In each box: thermistance, peltier device
- In a central place : controler
- Design mechanics, system, cables
- Light-tightness vs accessibility

Conclusion and plans

- Need a robust system: temperature control
- Characterize MPPC, decide on supplies, Finalize design.
- Slabs delivered from mid-January
- Wrapping in Saclay 2 weeks after
- Installation in February or March
- Connexion to DAQ in March