GASPARD-HYDE-TRACE Workshop
Orsay January 23th-24th 2017
mechanical design

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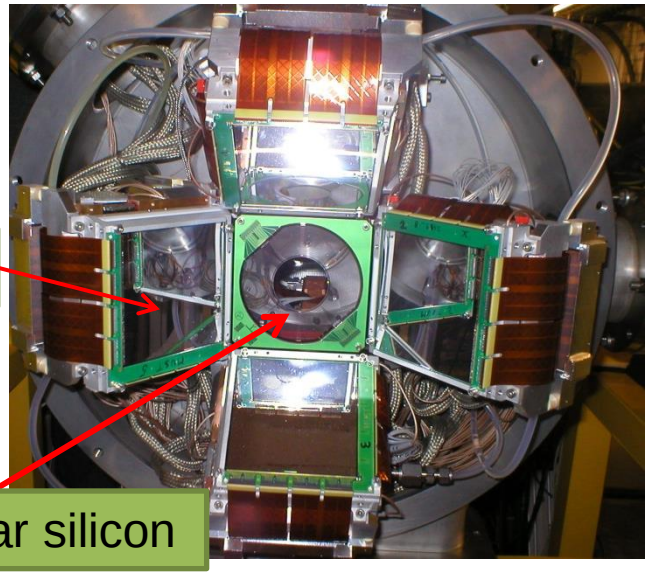
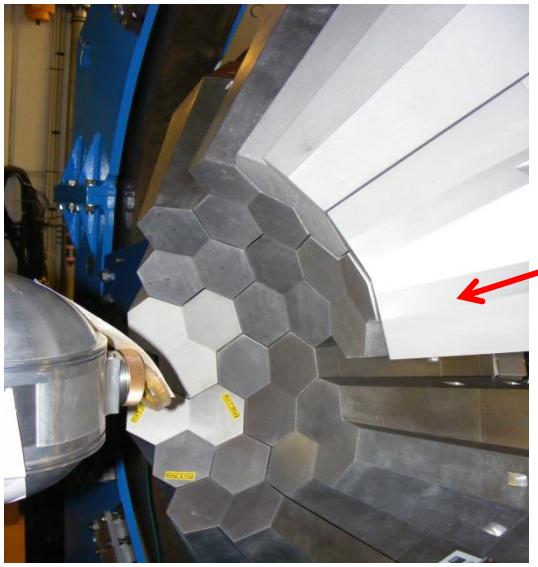
MUGAST detectors

"picture : Tiara backward assembly"

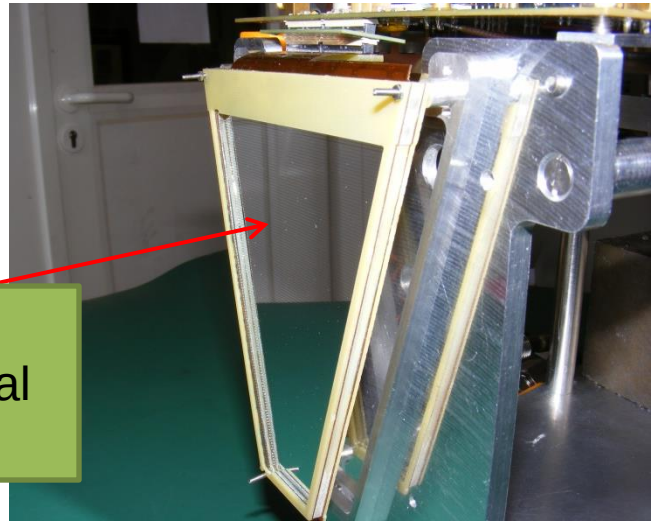


MUST 2

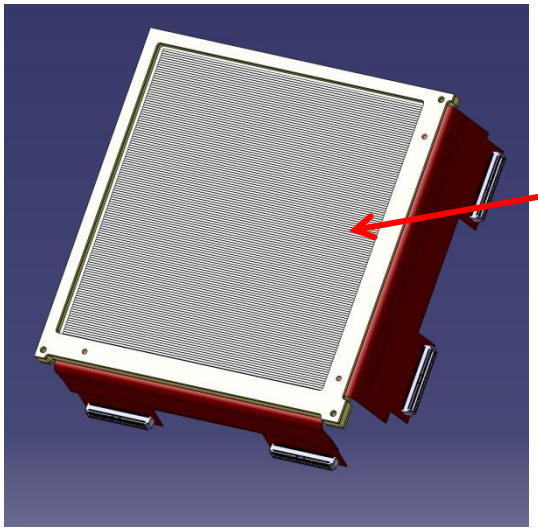
S1 annular silicon



AGATA



Gaspard trapezoidal silicon



Trace

MUGAST detectors setup

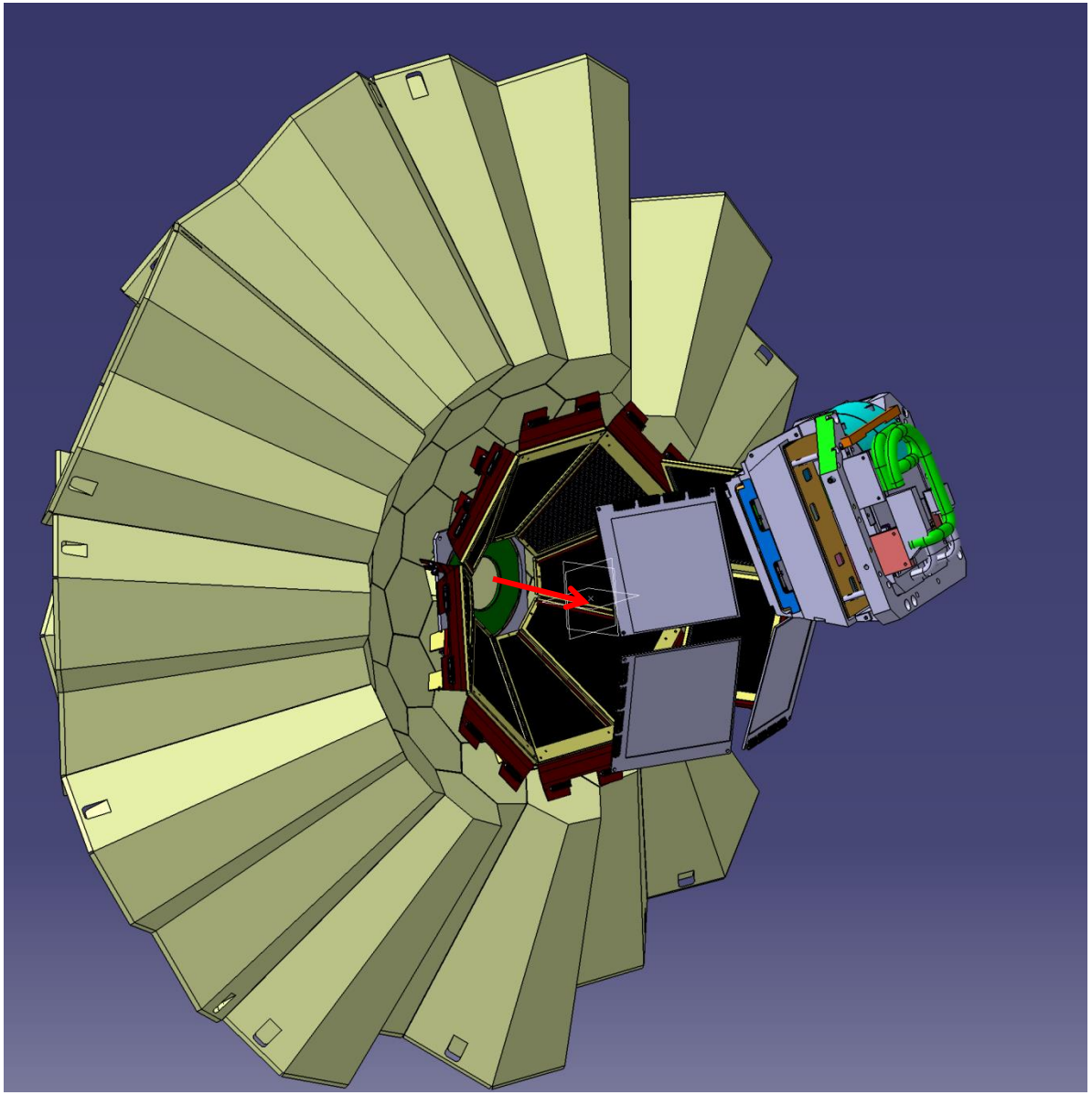
AGATA
Distance to the target = 180 mm (ring near the center)
Distance to the target = 200 mm (external ring)

1 annular S1 (?) silicon
Distance = 125 mm
Angles : 159° - 169,2°

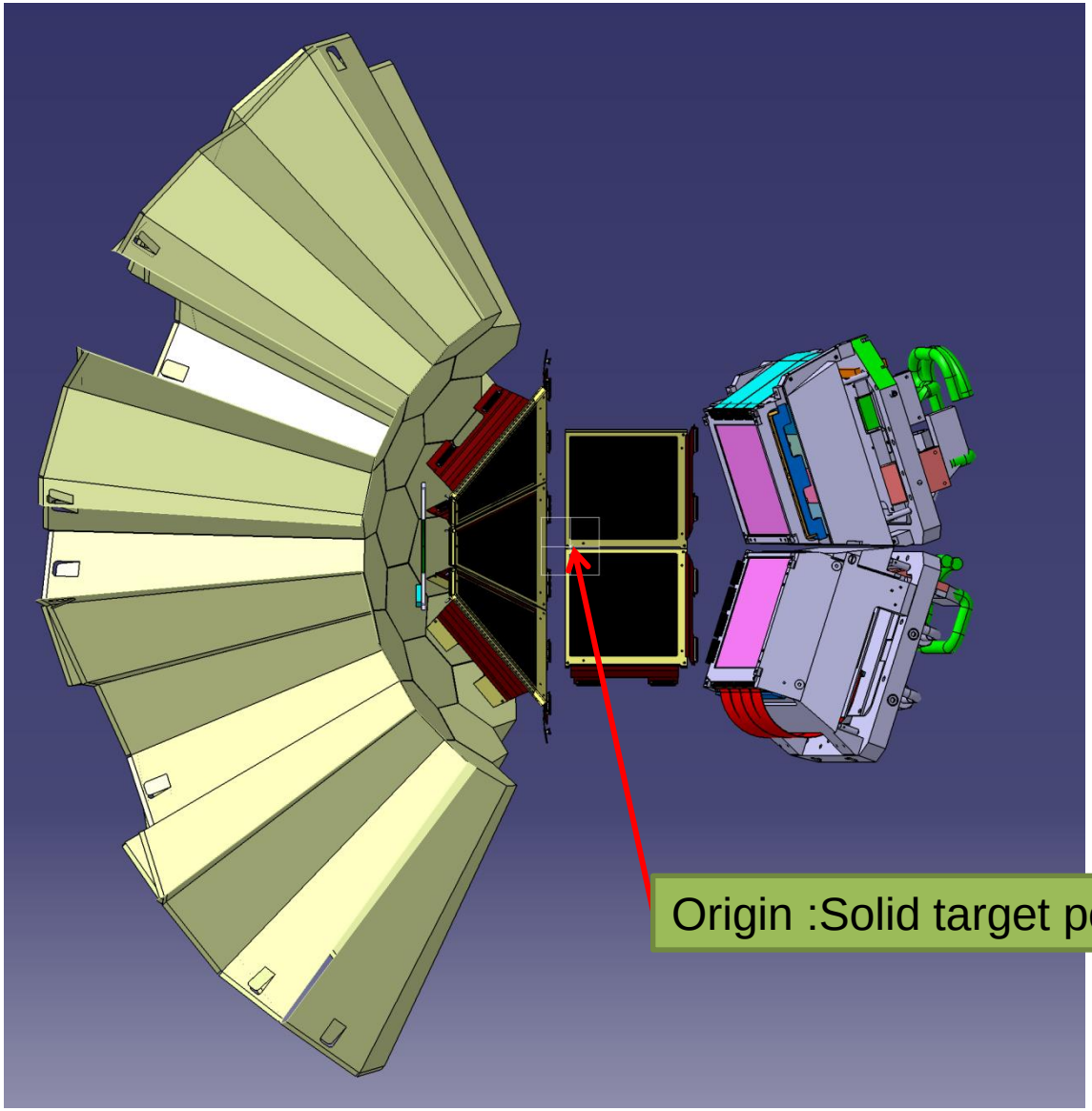
5 to 8 trapezoidal silicon
Distance = 105 mm (normale)
Angles : 104,2° - 155,2°

2 square silicon (TRACE)
Distance = 136 mm
Angles : 55,8° - 90°

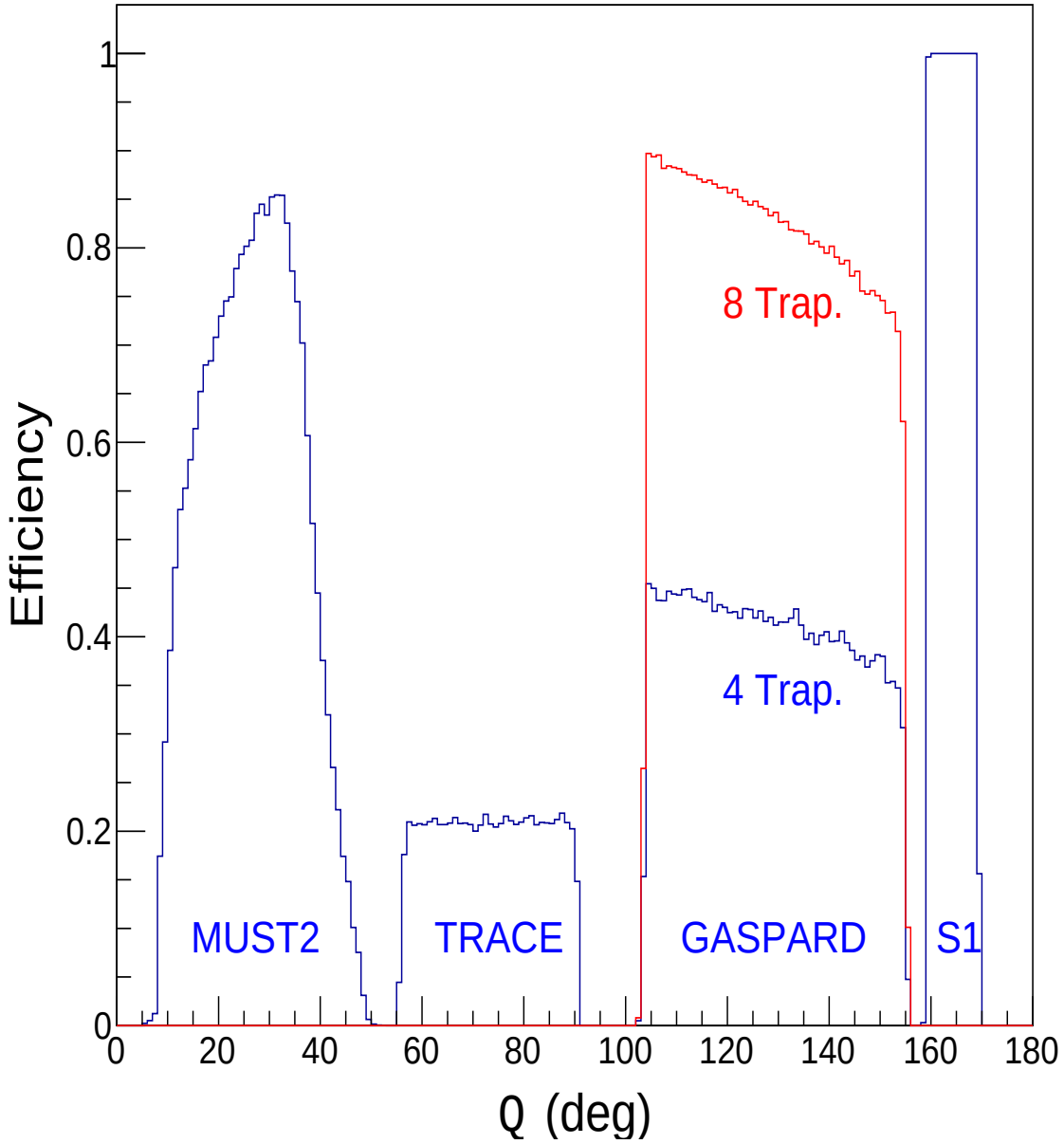
4 MUST 2
Distance = 180 mm
Angles : 7,5° - 50°



MUGAST detectors setup (cut view)

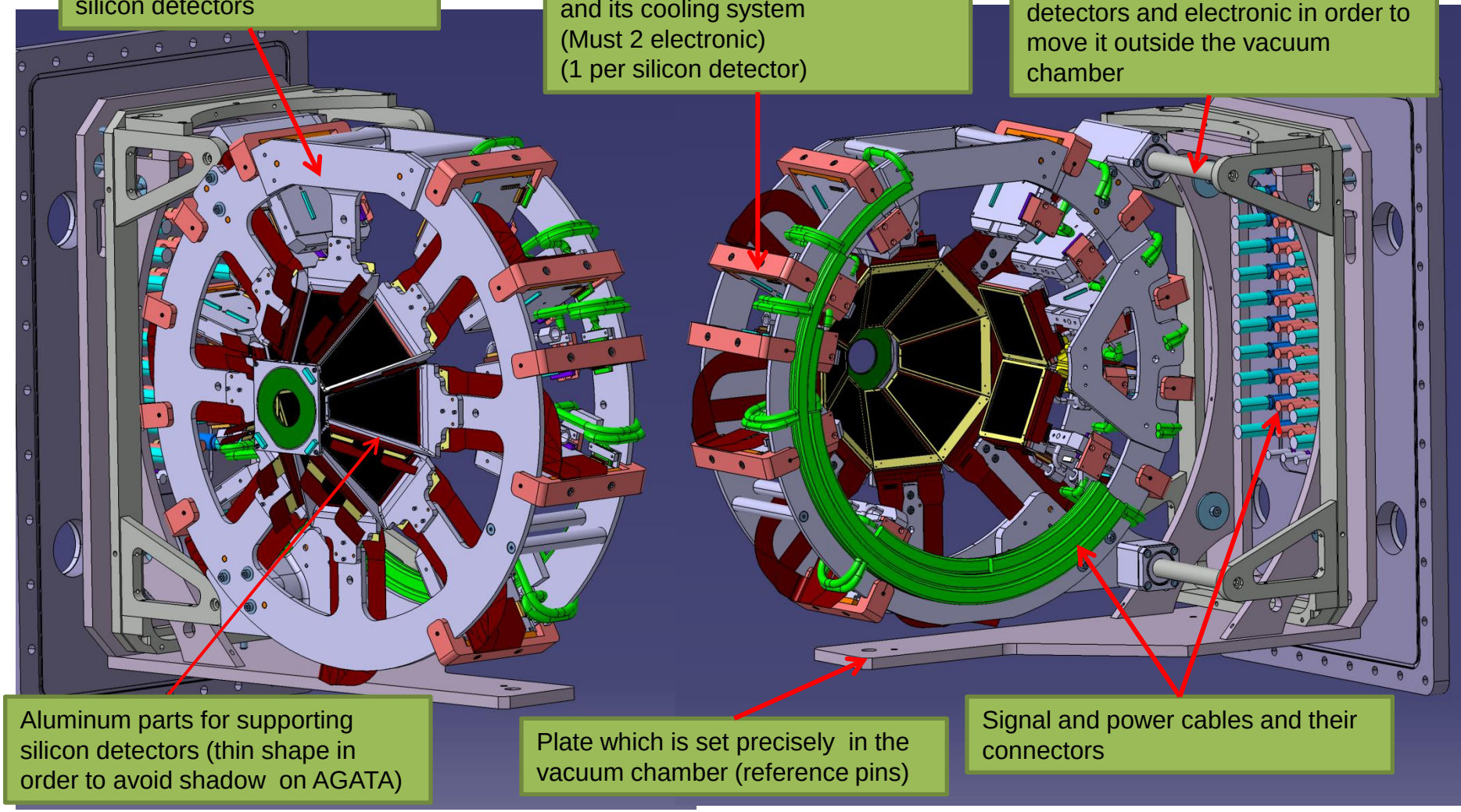


MUGAST detectors set-up
Angles/Efficiency (Freddy simulations)

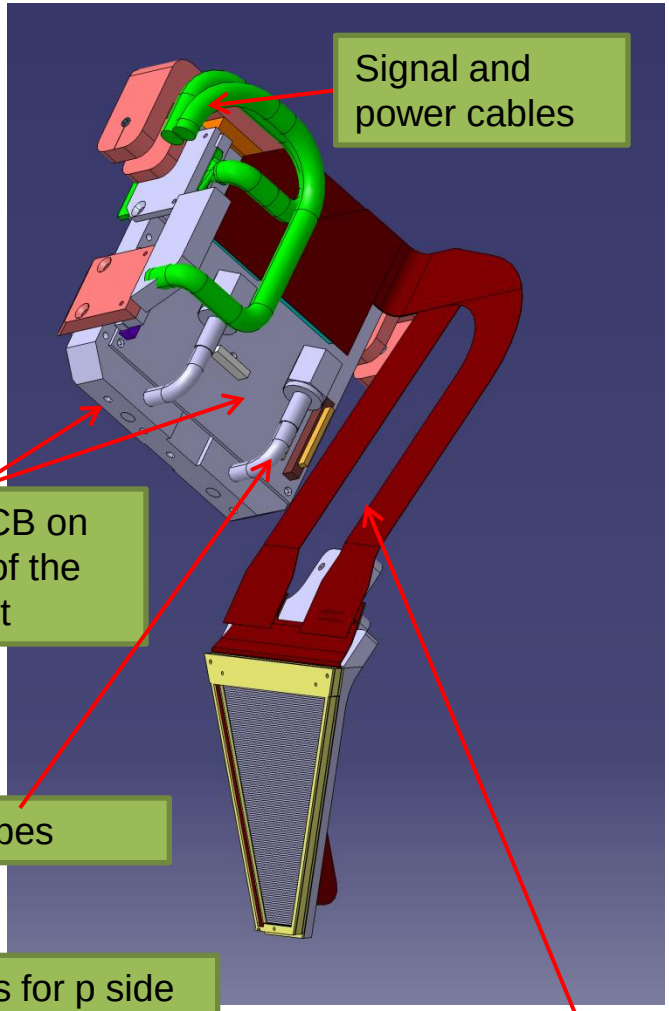


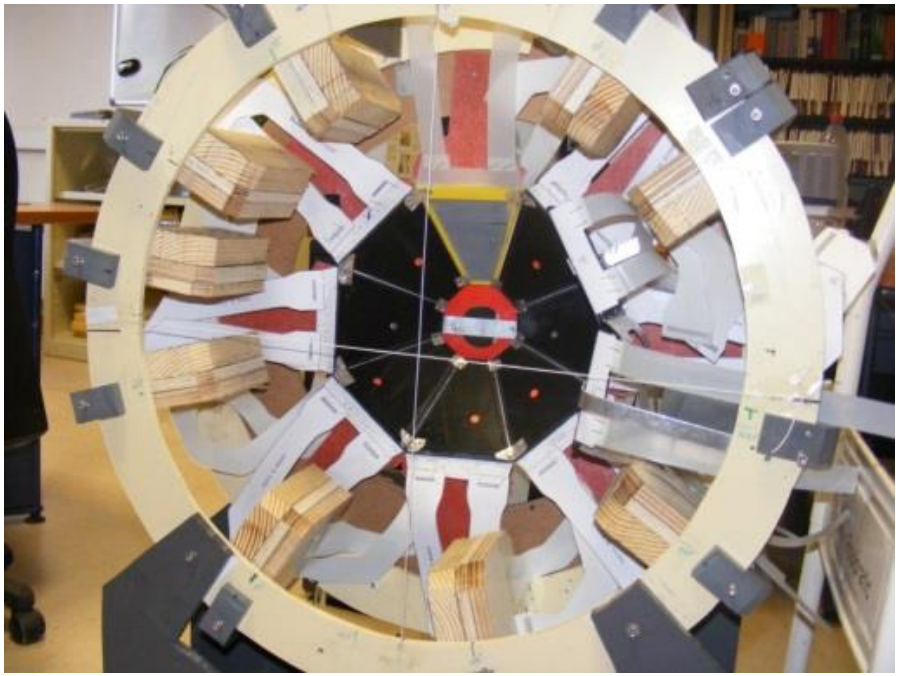
Mechanic design of this setup

1: Gaspard and Trace silicon detectors



Kaptons to link silicon to MUFFEE

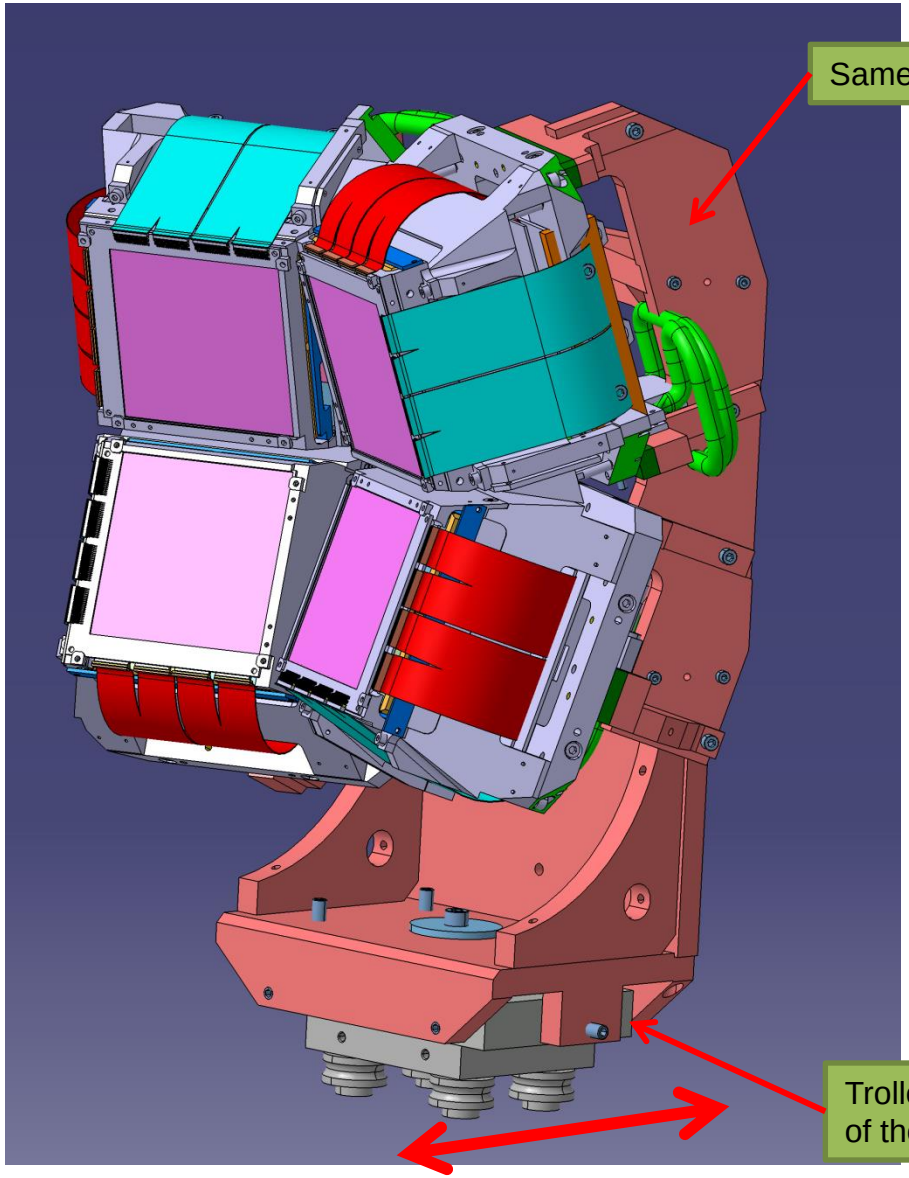




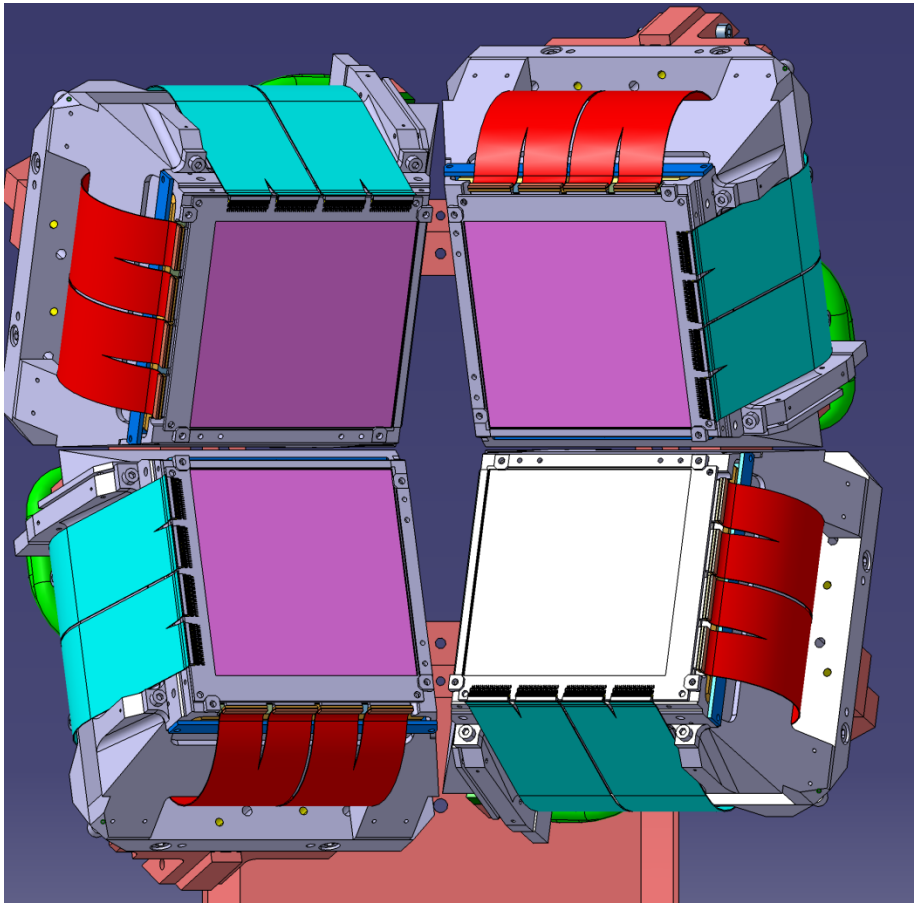
Moke-up in order to design precisely the kaptons

Mechanic design to get this setup

2: MUST 2



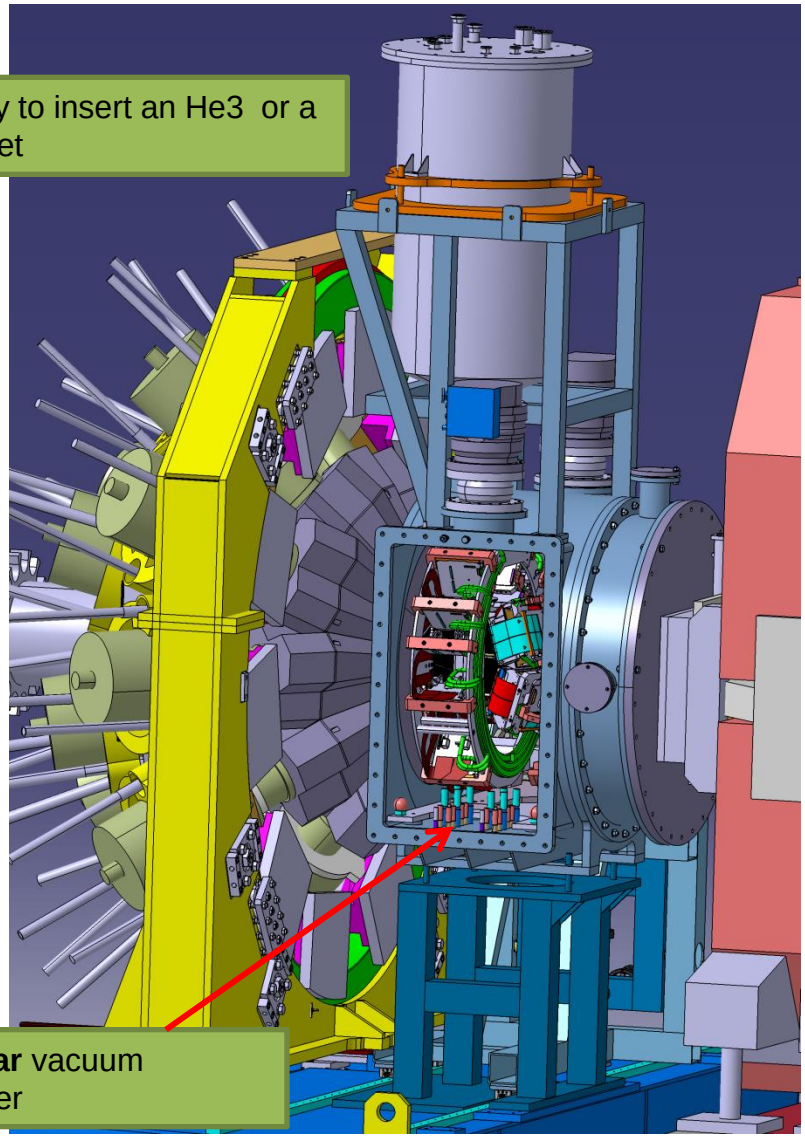
Same support than Tiara forward set-up



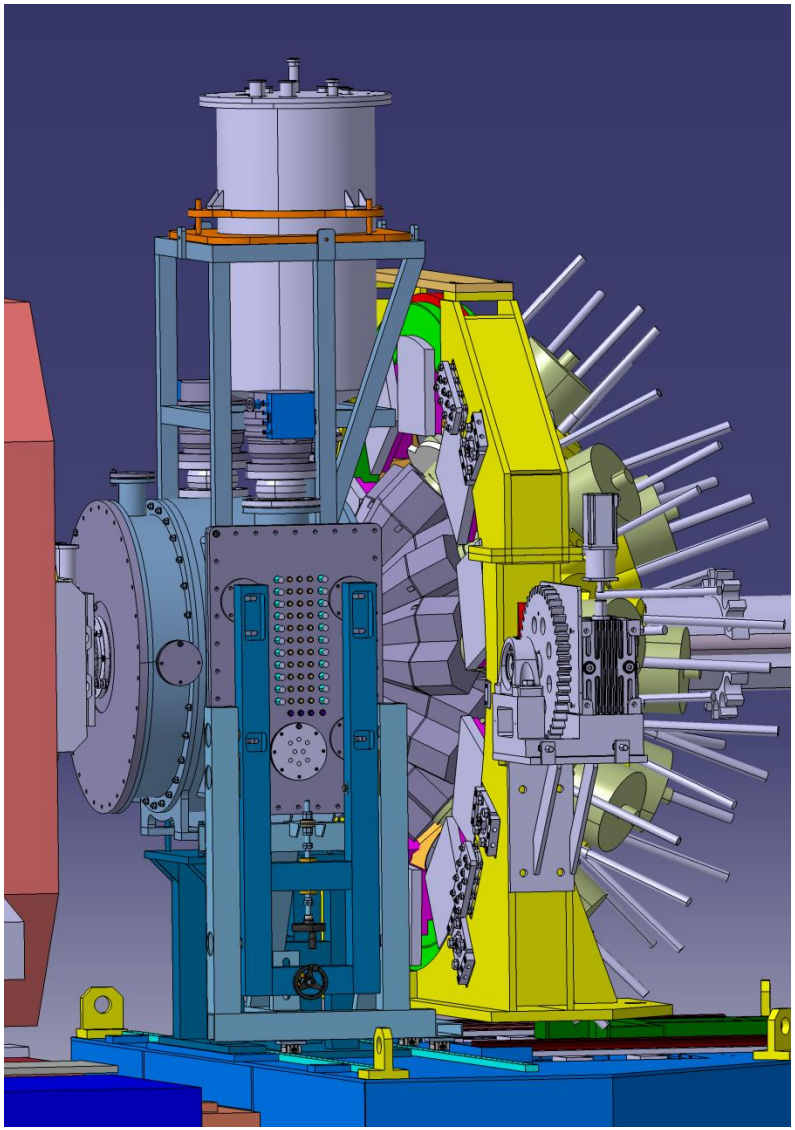
Trolley for moving the 4 detectors in order to permit the exit of the silicon detectors and its electronic outside the chamber

General design of MUGAST /VAMOS

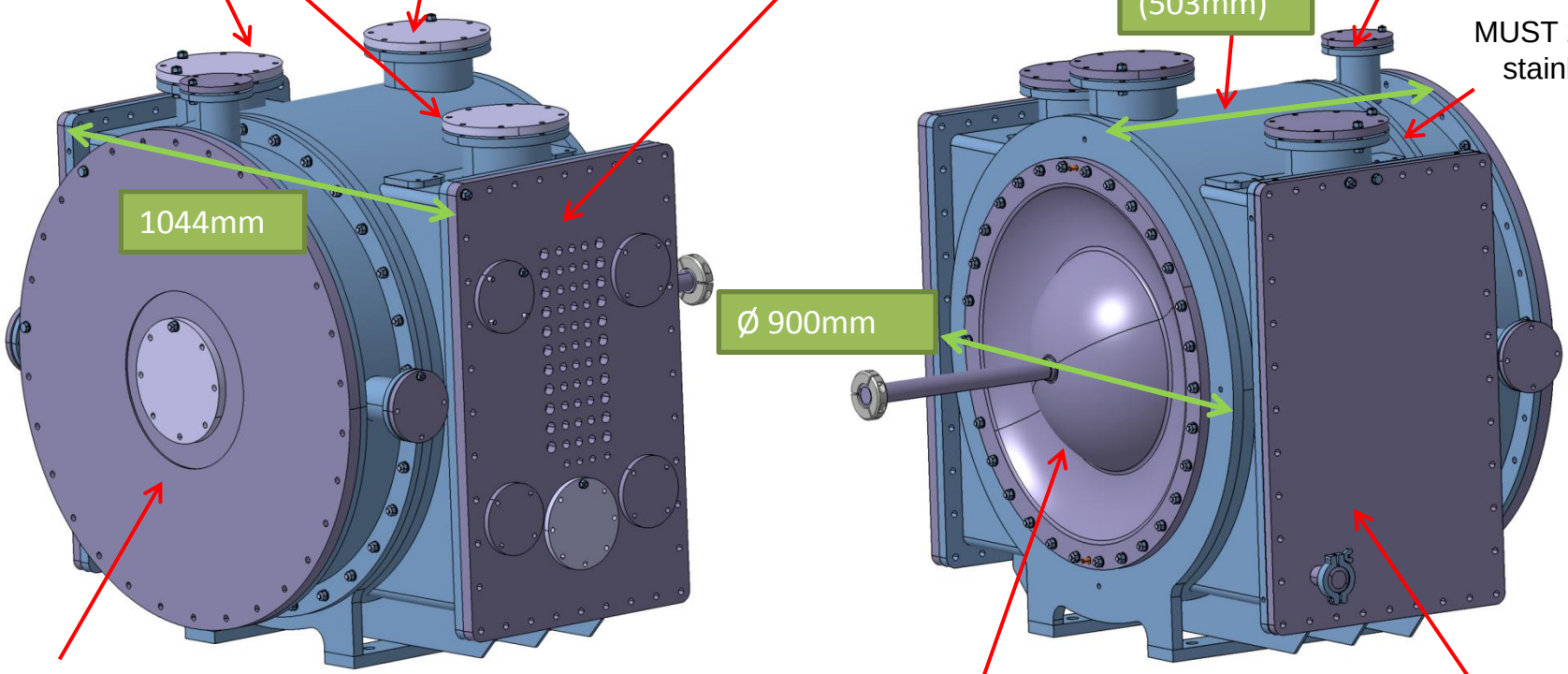
Possibility to insert an He3 or a solid target



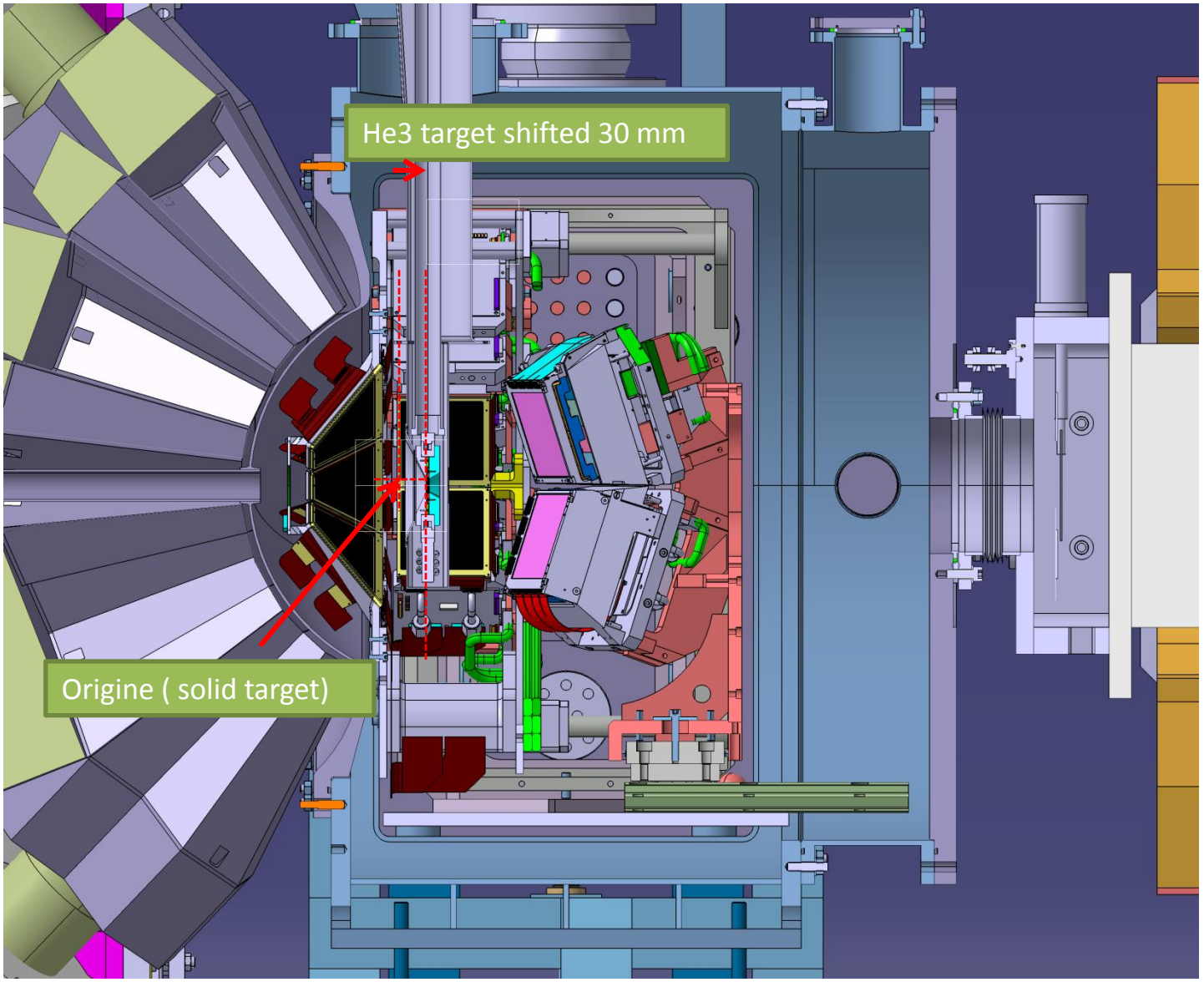
Modular vacuum chamber



Vacuum chamber assembly



General design of MUGAST/VAMOS cut view

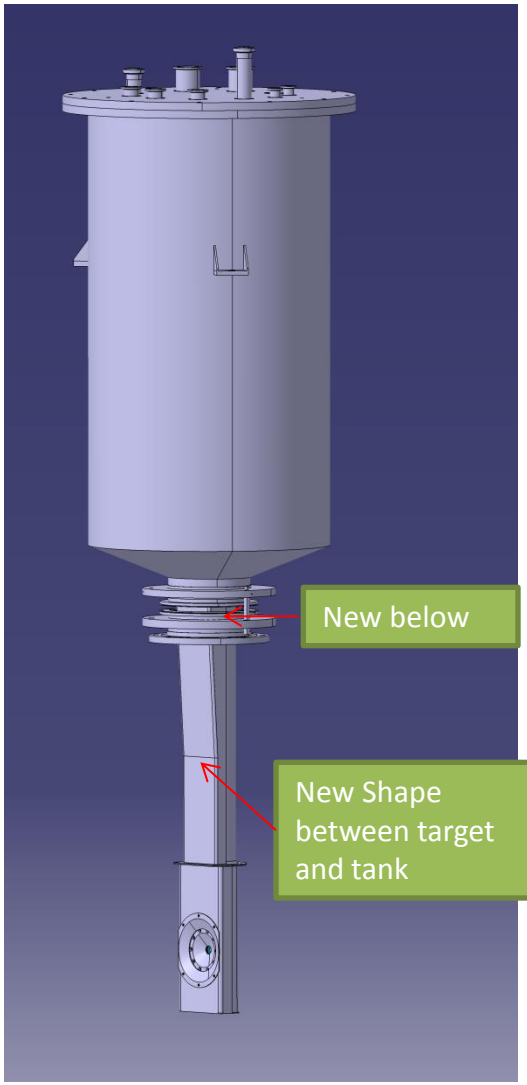


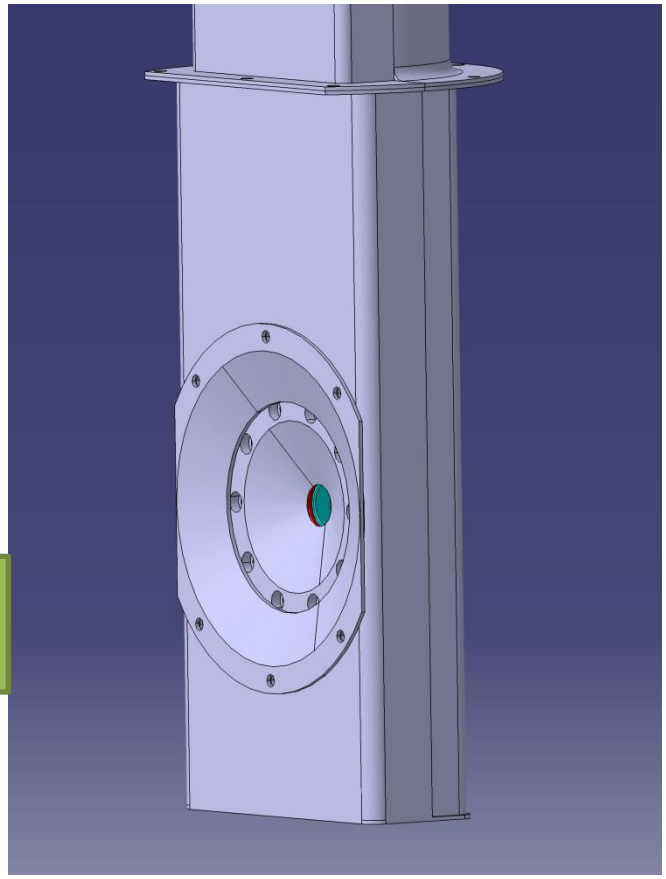
He3 target

1) Vacuum tests have been made in its original design : OK

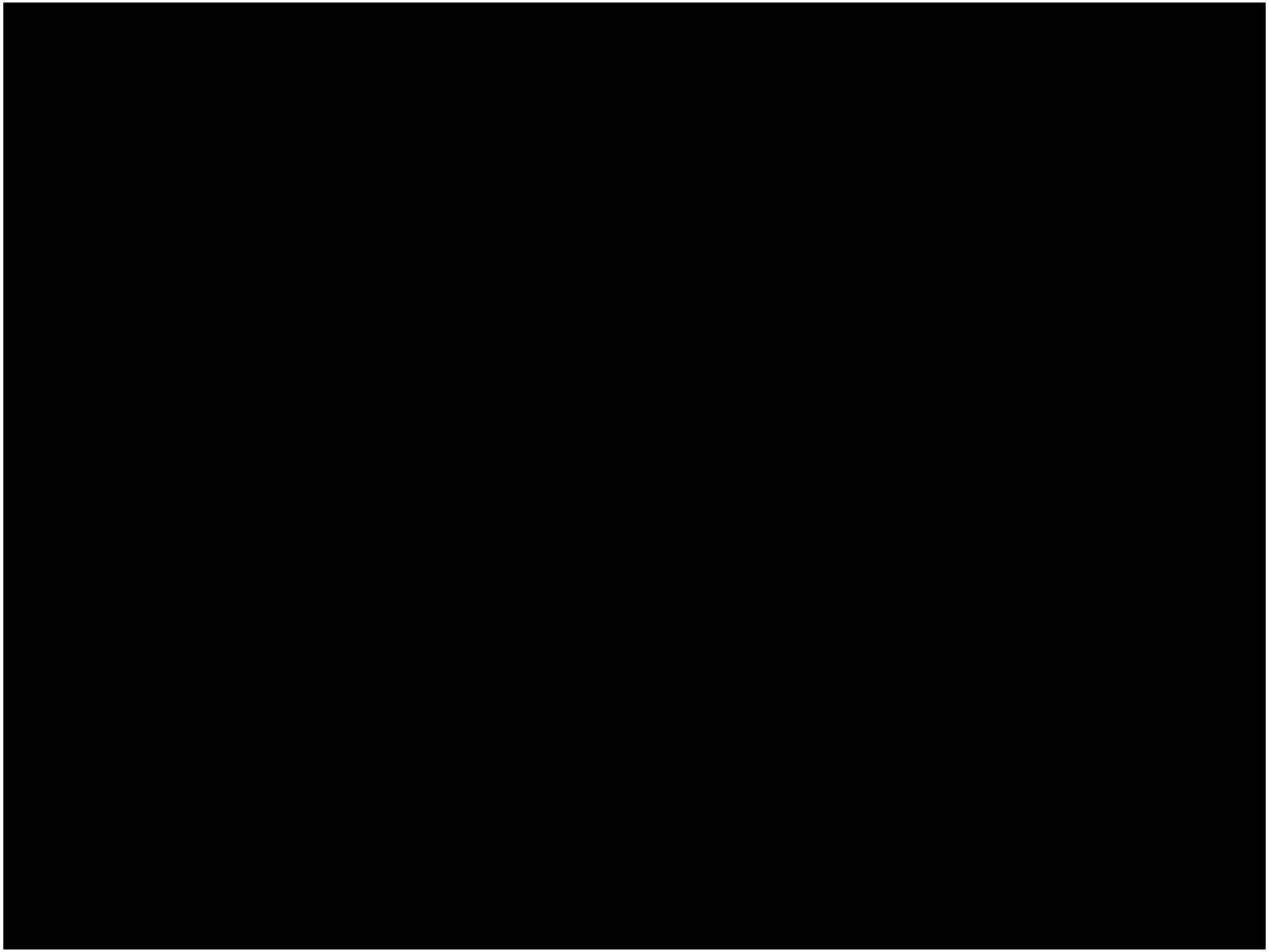
2) Next step : Thermal test

3) Has to be modified for MUGAST reaction chamber use (shape , below)



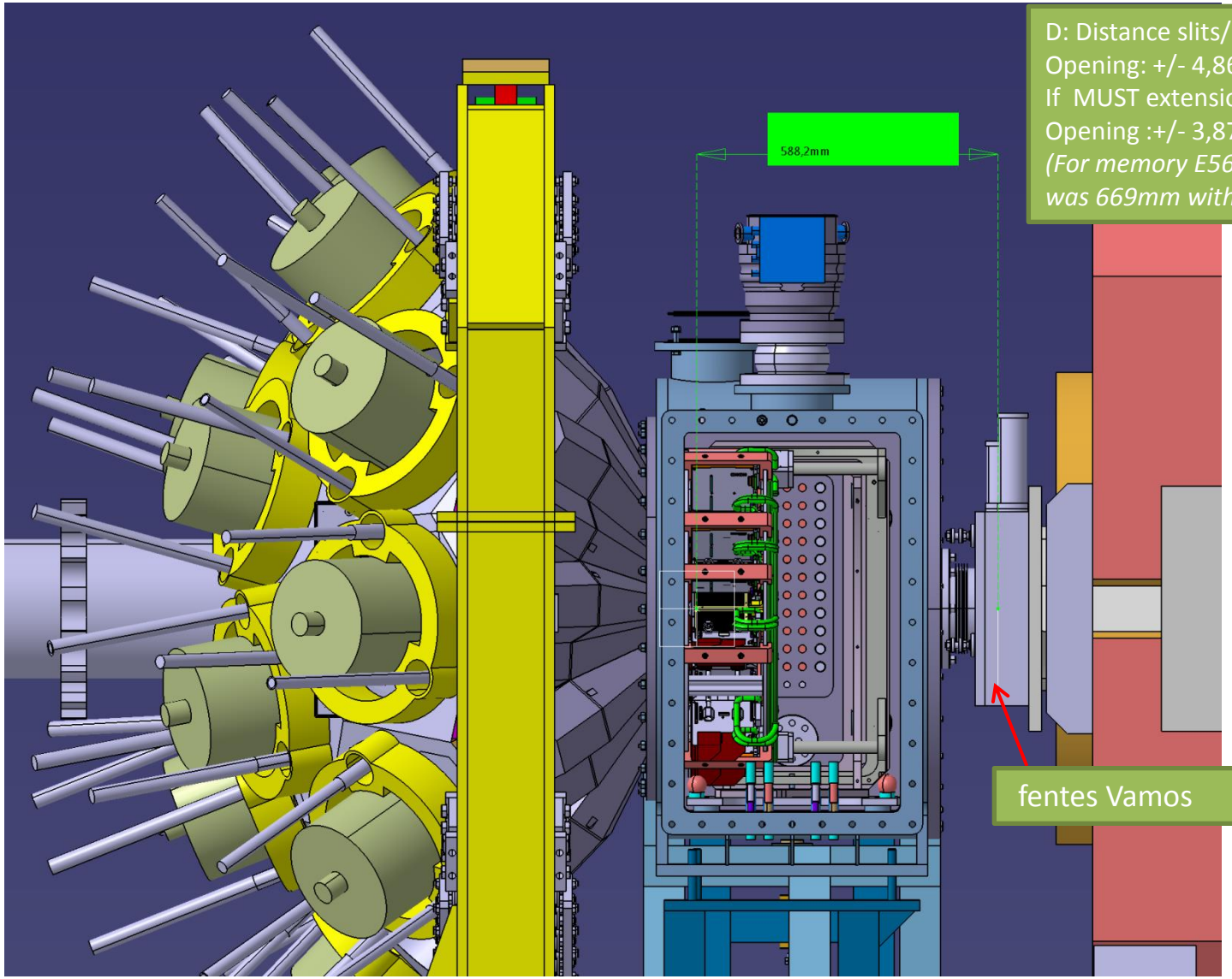


Detectors movements for access



Other mounting possibility with this reaction chamber

1)Mounting without MUST

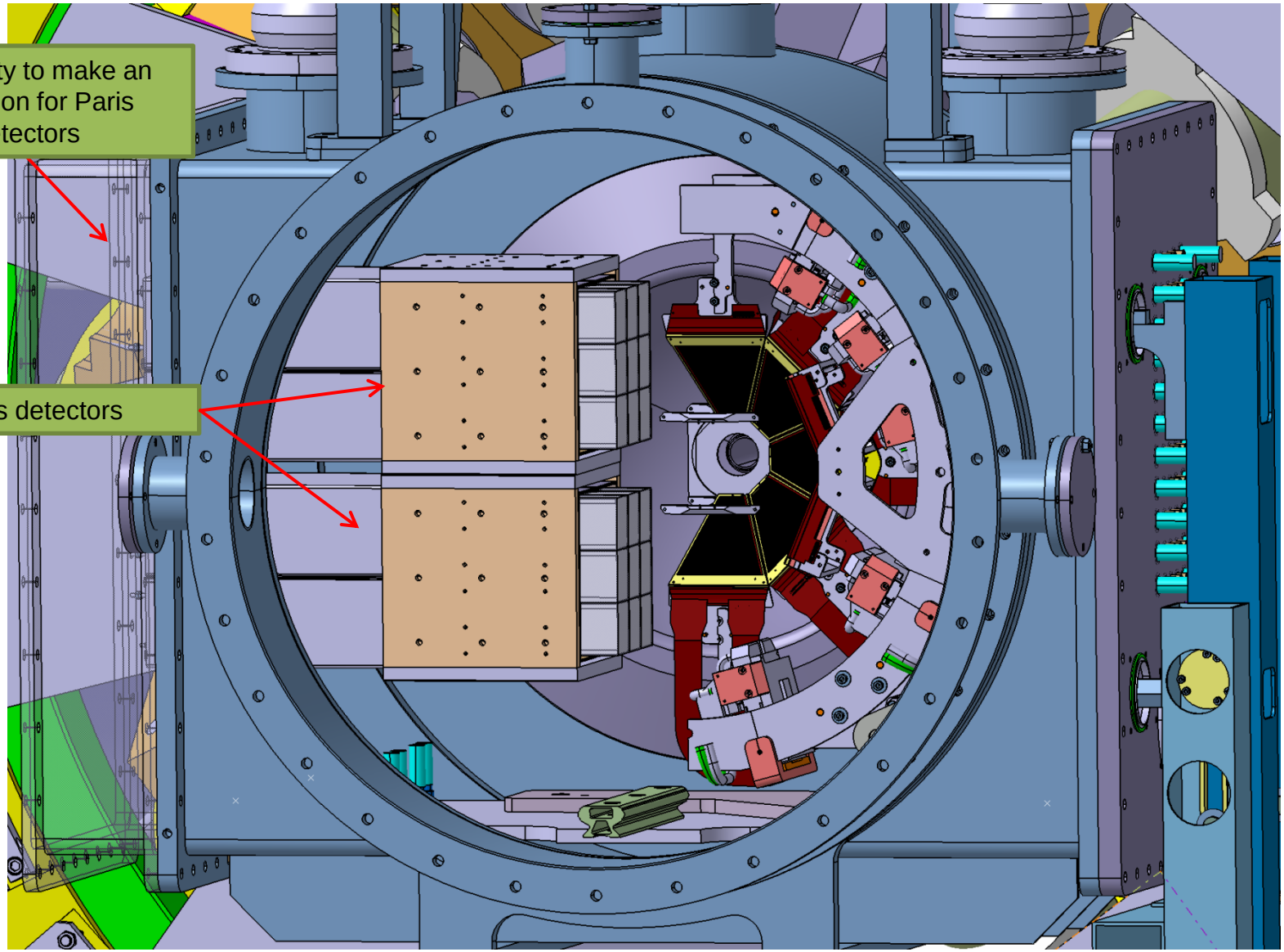


D: Distance slits/ target = 588mm
Opening: +/- 4,86°
If MUST extension D=738mm
Opening :+/- 3,87°
(For memory E569S experiment D was 669mm with +/- 4,27°)

Other mounting possibility
2)Mounting with Paris detectors

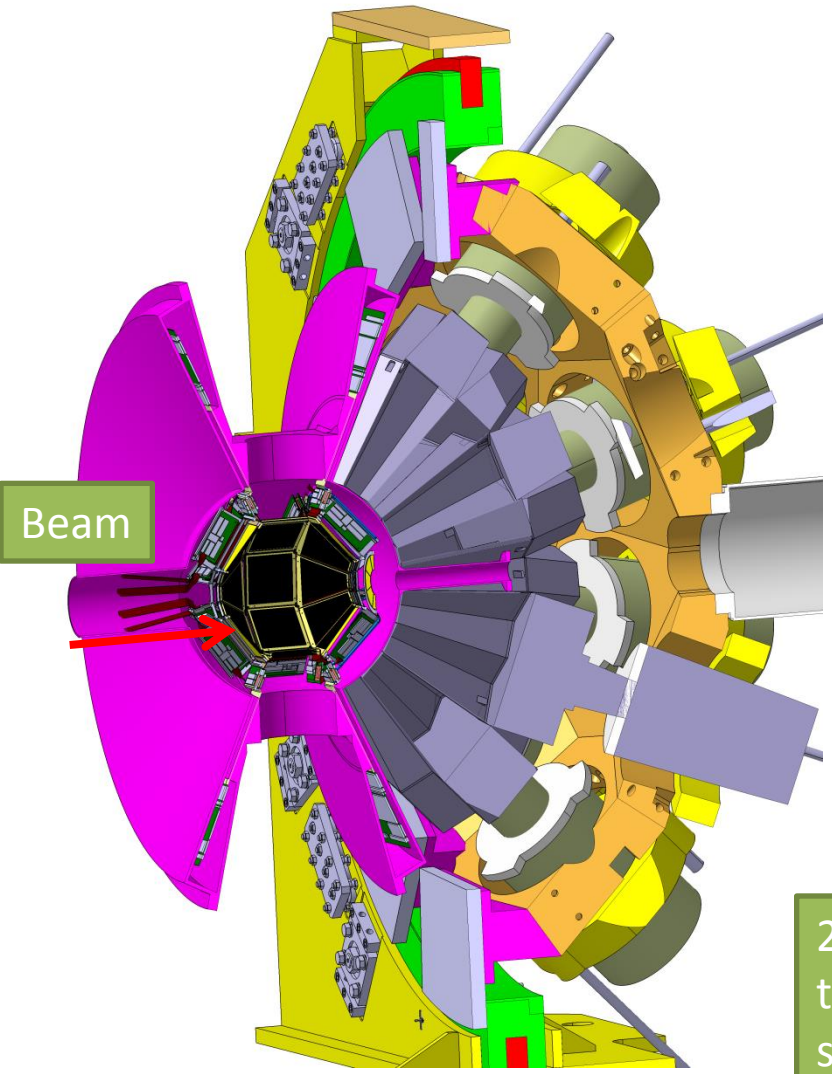
Possibility to make an extension for Paris detectors

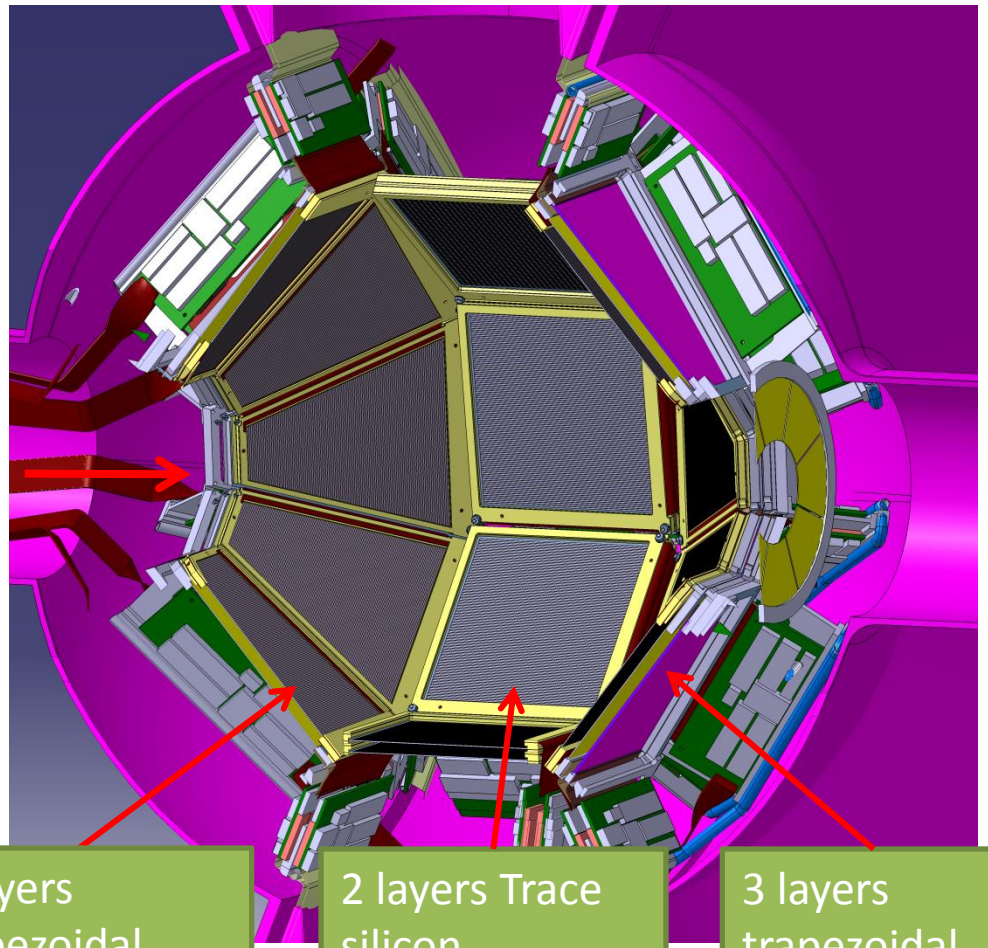
Paris detectors



And if we look further…

...GASPARD





2 layers trapezoidal silicon on Backward side

2 layers Trace silicon

3 layers trapezoidal silicon on forward side

GASPARD cooling system