



irfu



## **P2 MM Project**

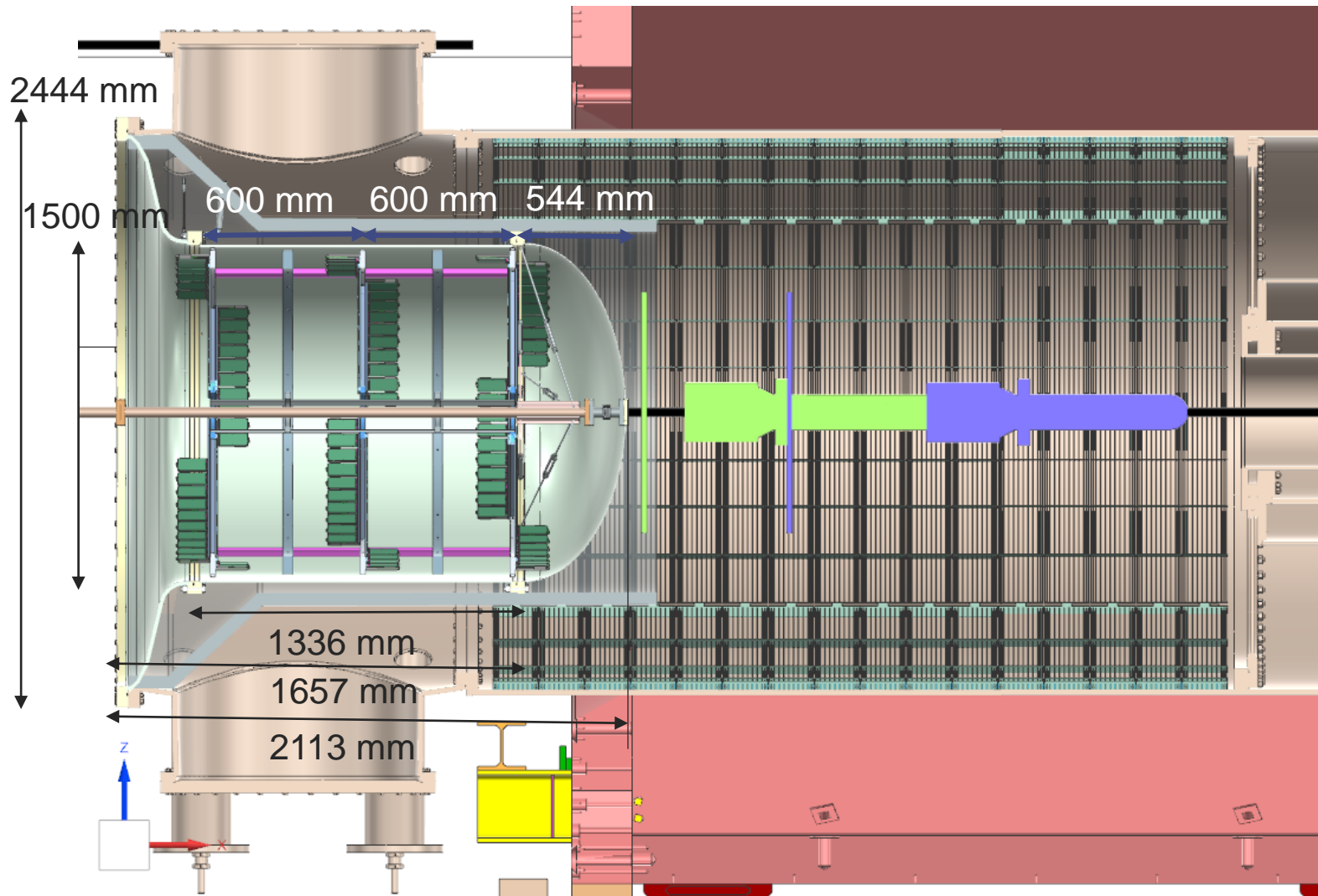
Design – Simulations - Integrations

17-09-24

*Thomas LEBRUN – Sandrine CAZAUX*

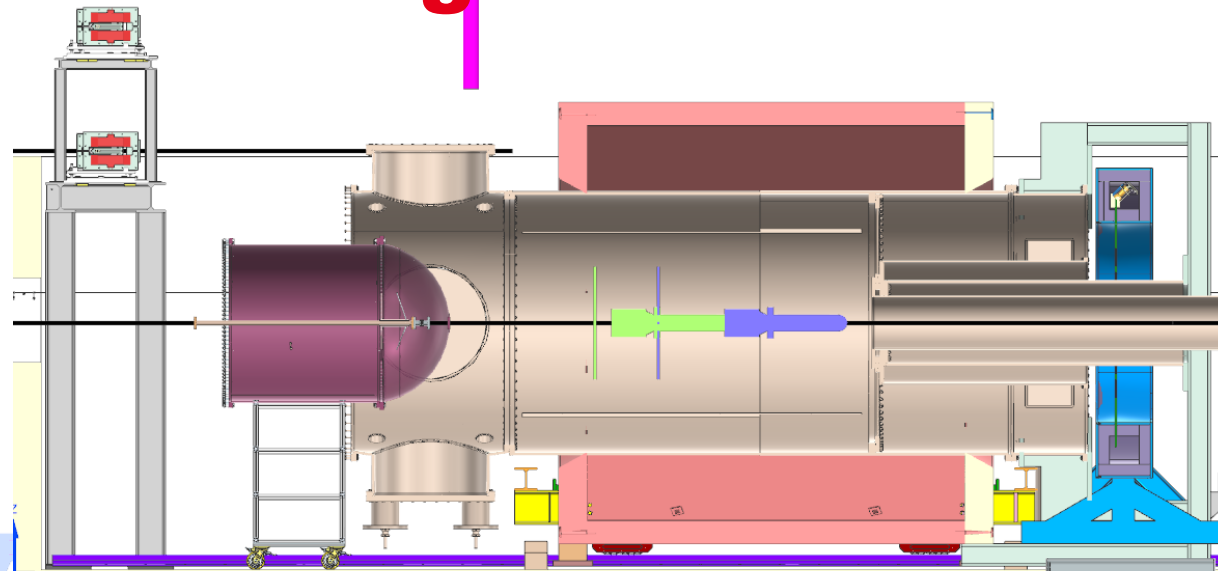


# Target positions

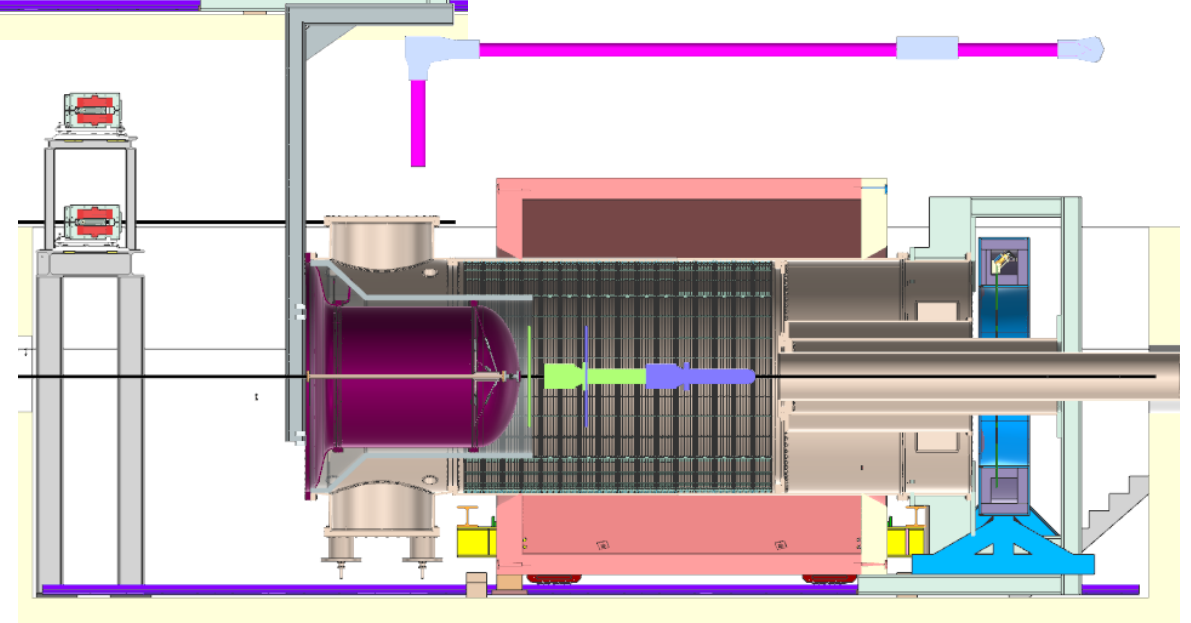
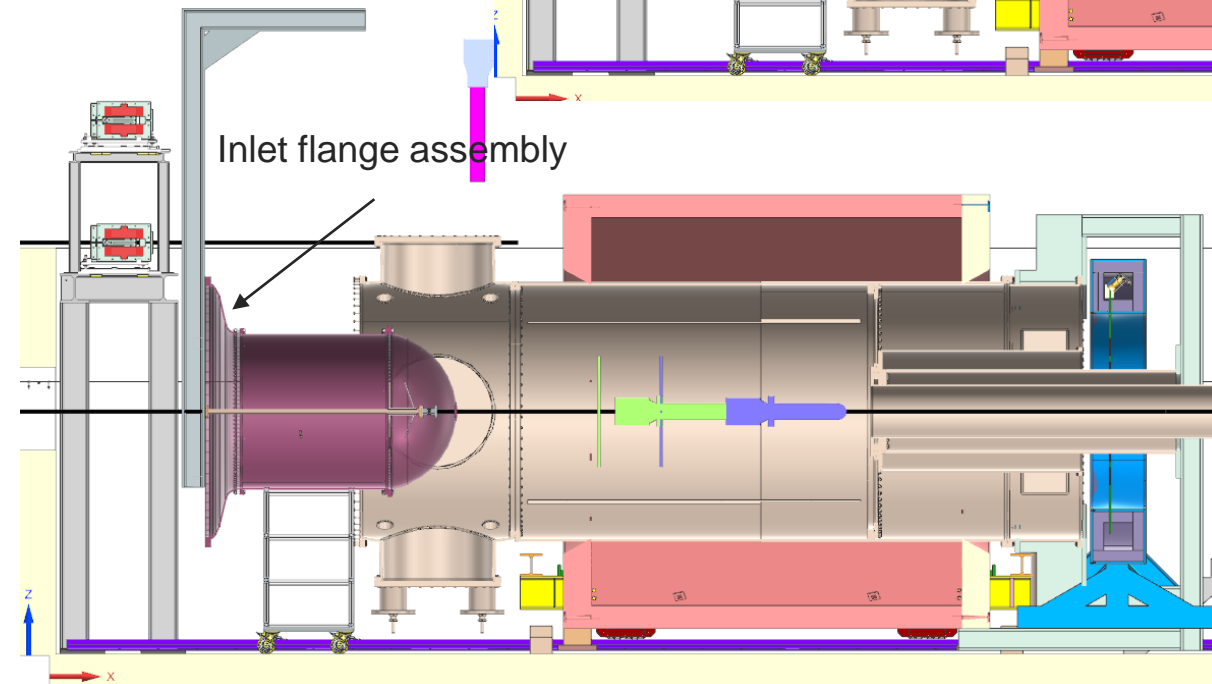


Target mask : -1000 and -1600 mm  
Target : +500 and -700 mm

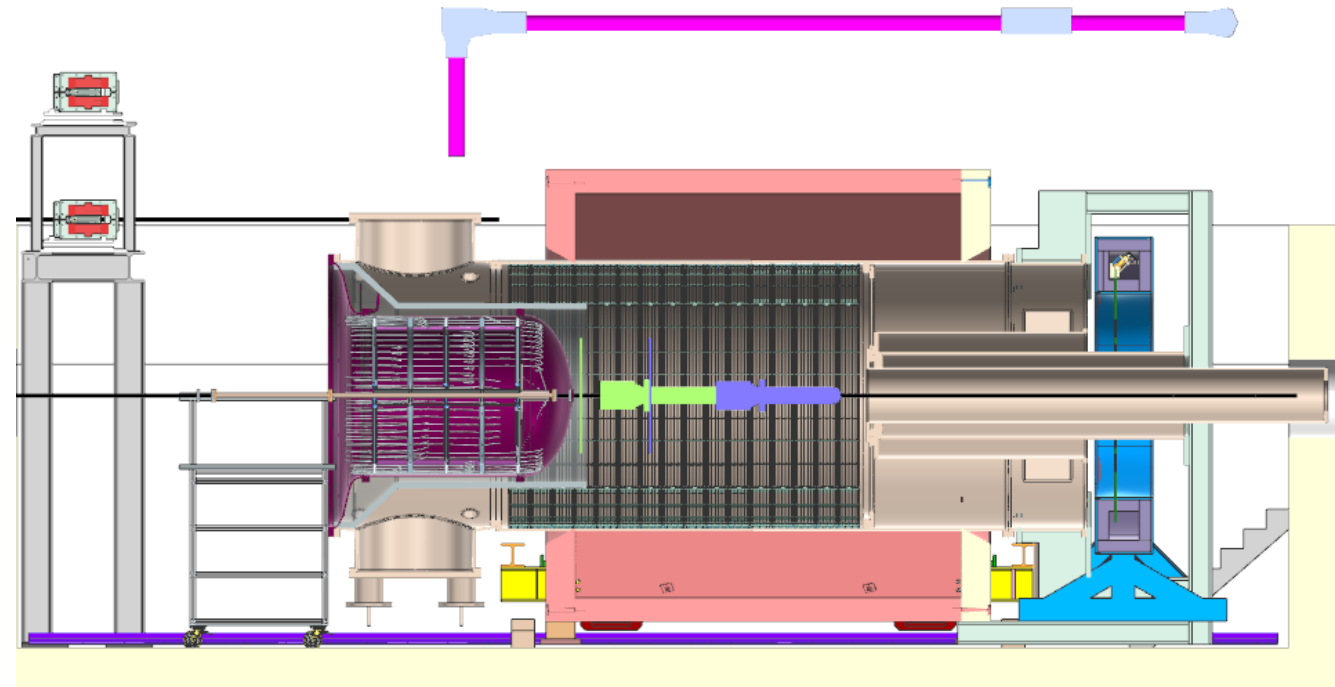
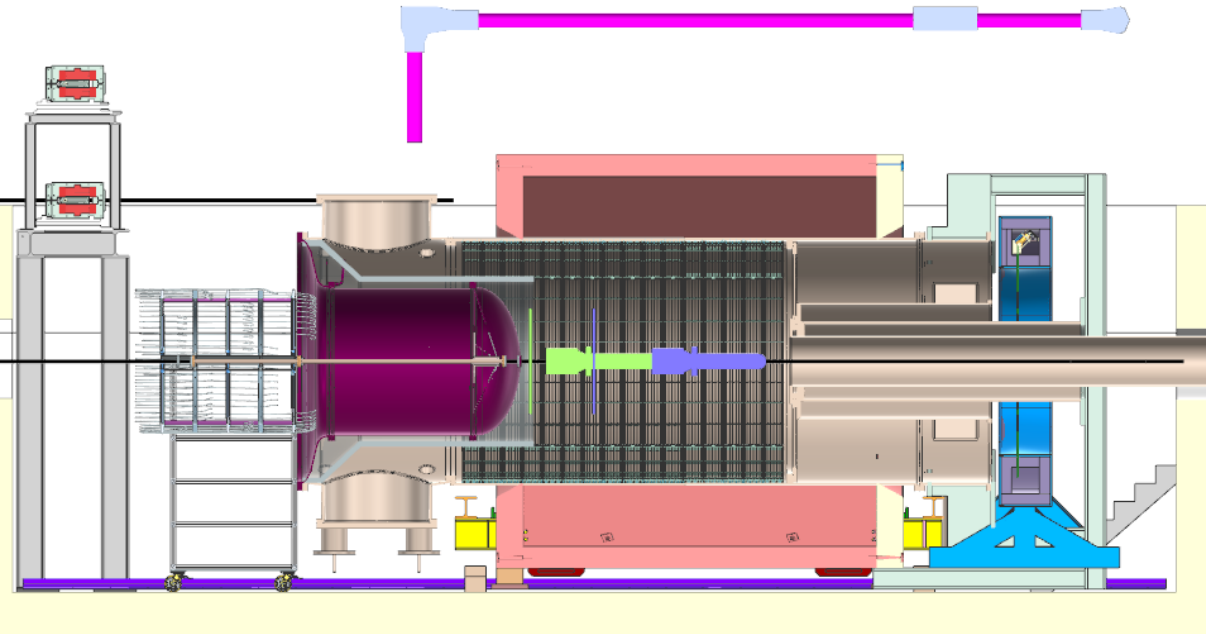
# « Chapeau » Integration



Possibility to mounting the « chapeau » before the magnets or something else?



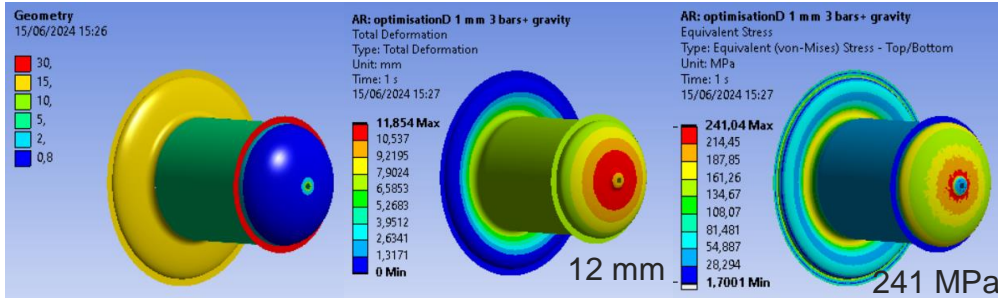
# « MM » Integration



# « Chapeau » Design

## Elliptical

3 bars (4 bars int., 1 bars ext.)



6082 T6 OK weld

Rp0,2 280 MPa

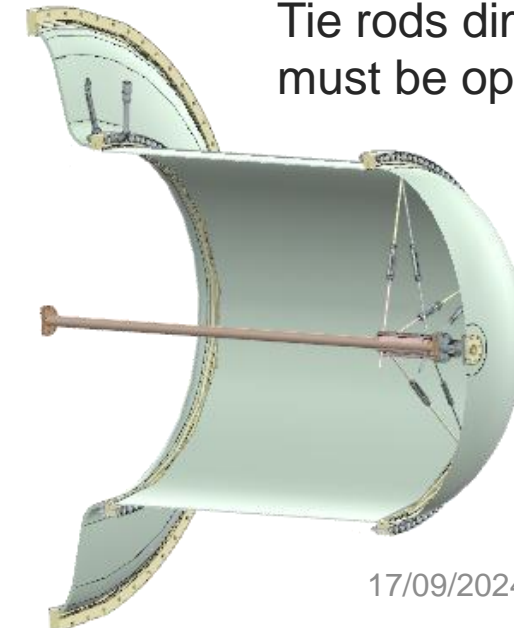
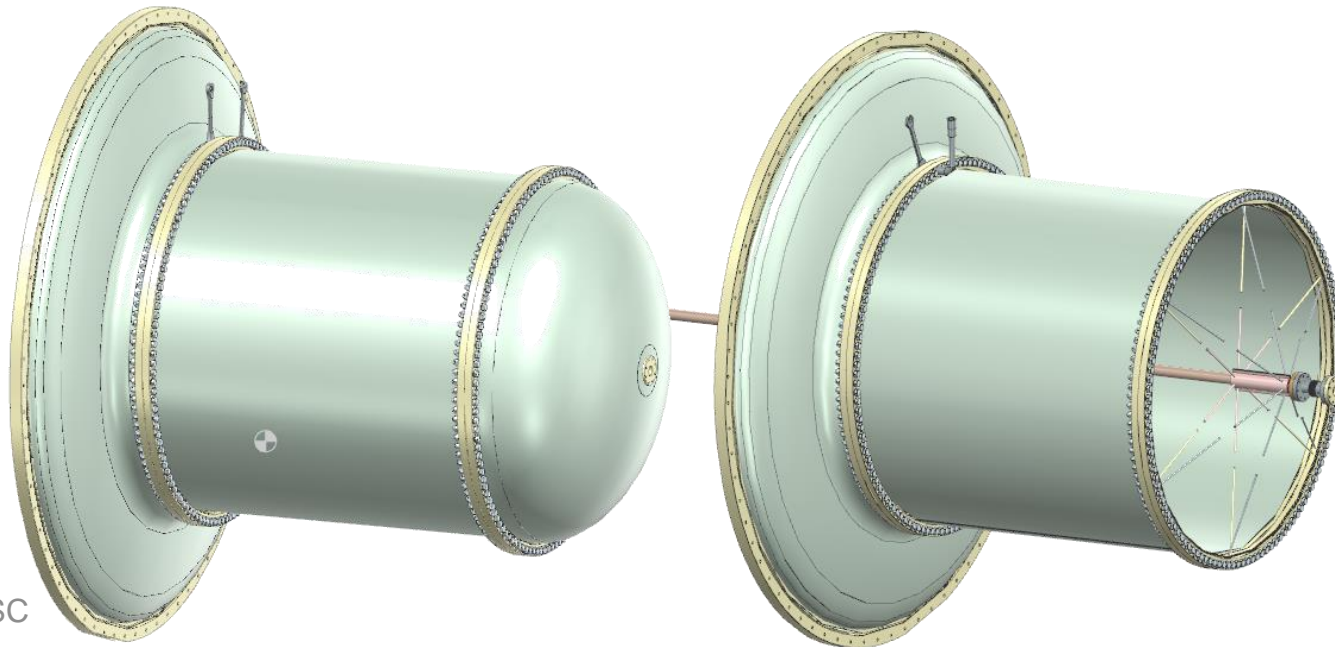
R315 Mpa

0,8 = 241 MPa

0,7 = 278 MPa

0,65 mm = 300 MPa

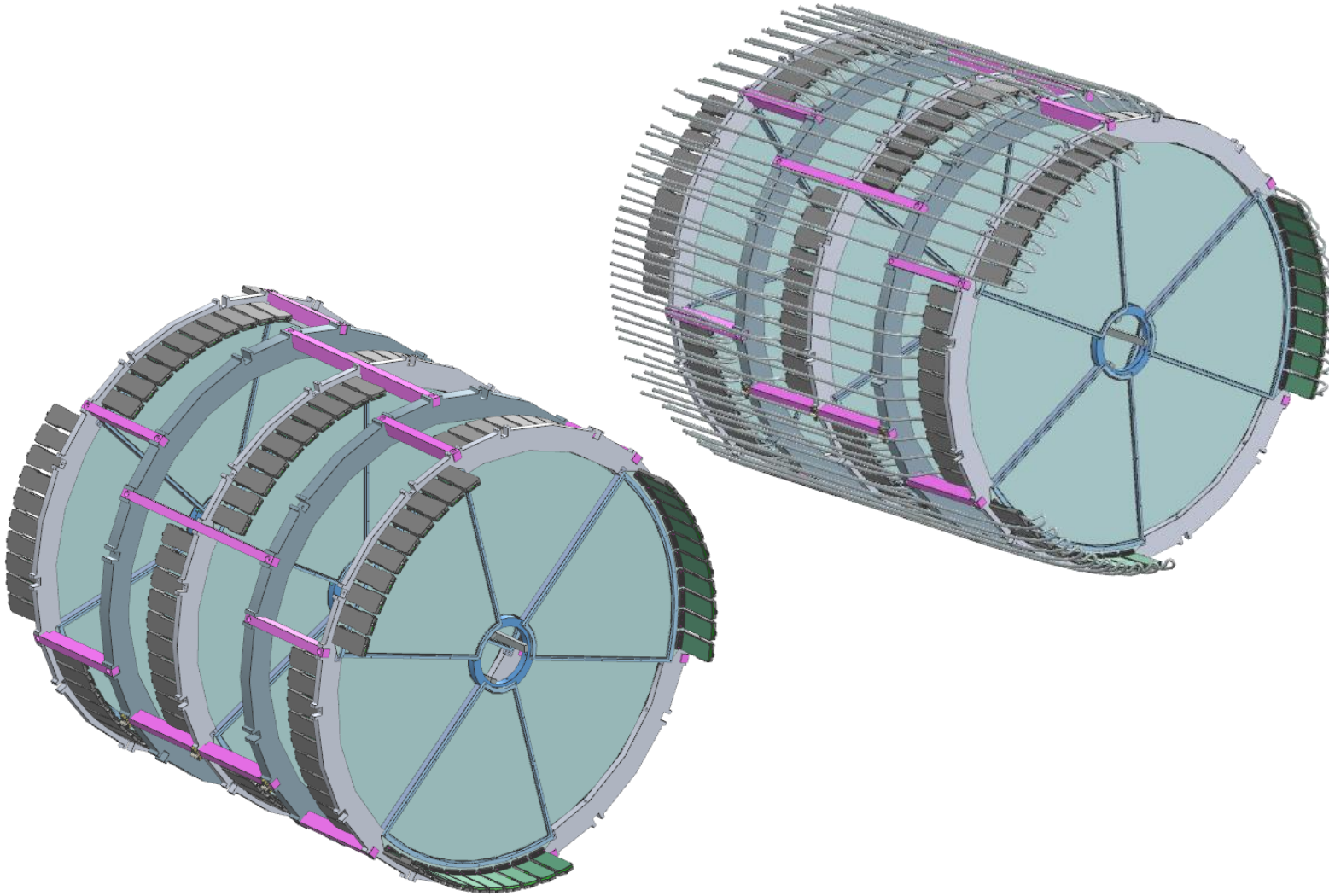
124 screws Ta6v M16 x 90  
per flange



Tie rods dimensions  
must be optimised



# MM structure Design

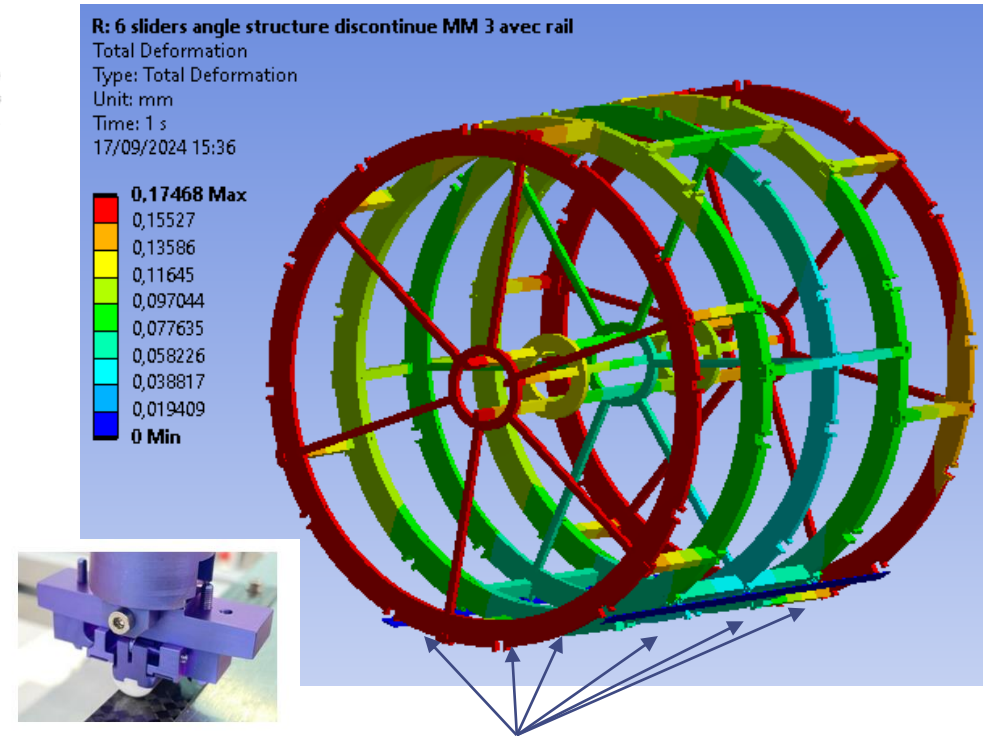
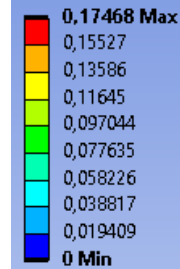


MM structure allows shift position of the MM

## Optimization simulation

R: 6 sliders angle structure discontinue MM 3 avec rail

Total Deformation  
Type: Total Deformation  
Unit: mm  
Time: 1 s  
17/09/2024 15:36

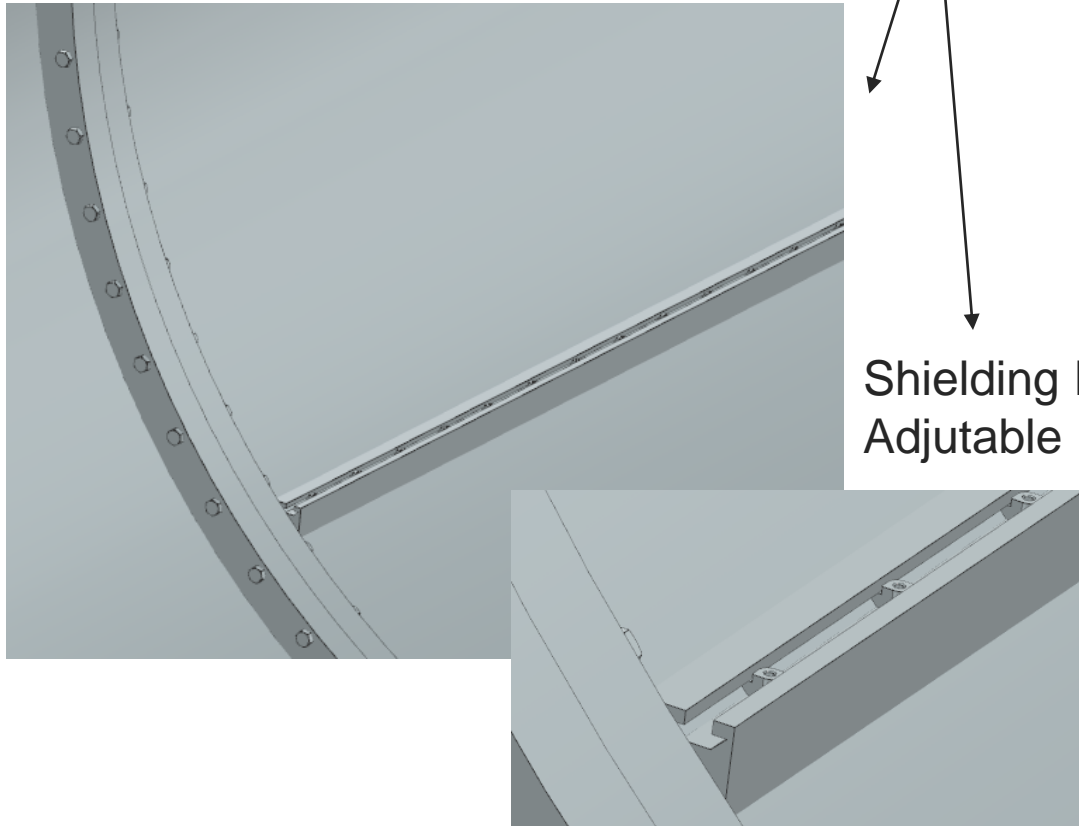


6 sliders on rails « free » and « guide »

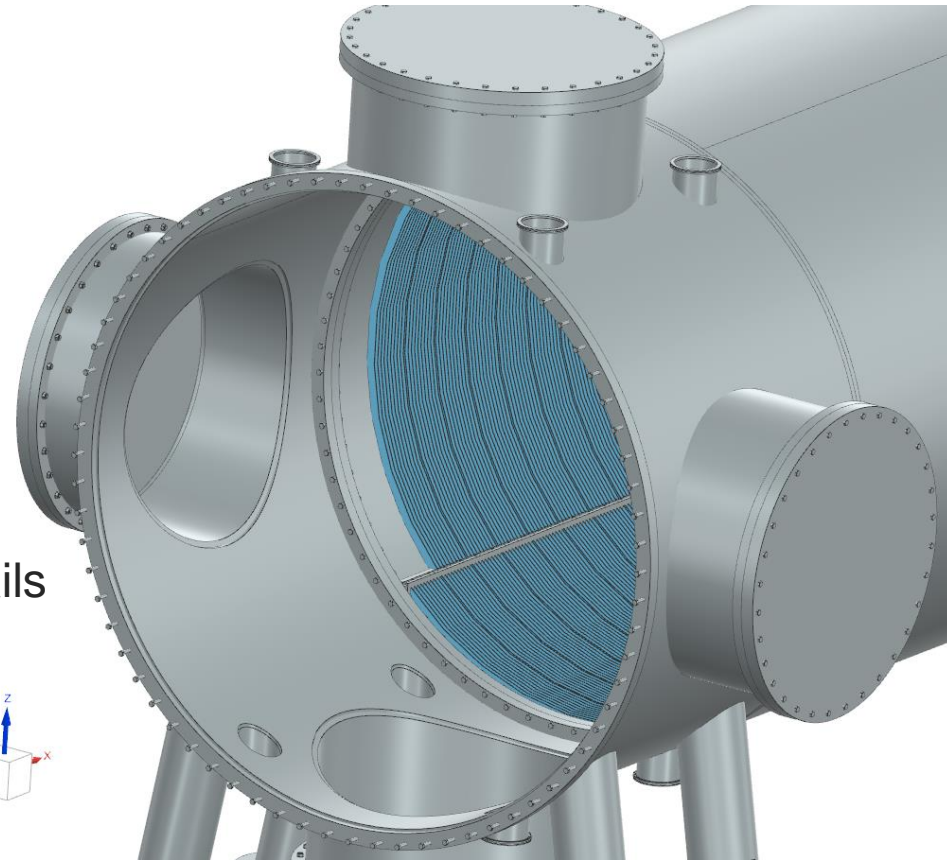
# Shielding



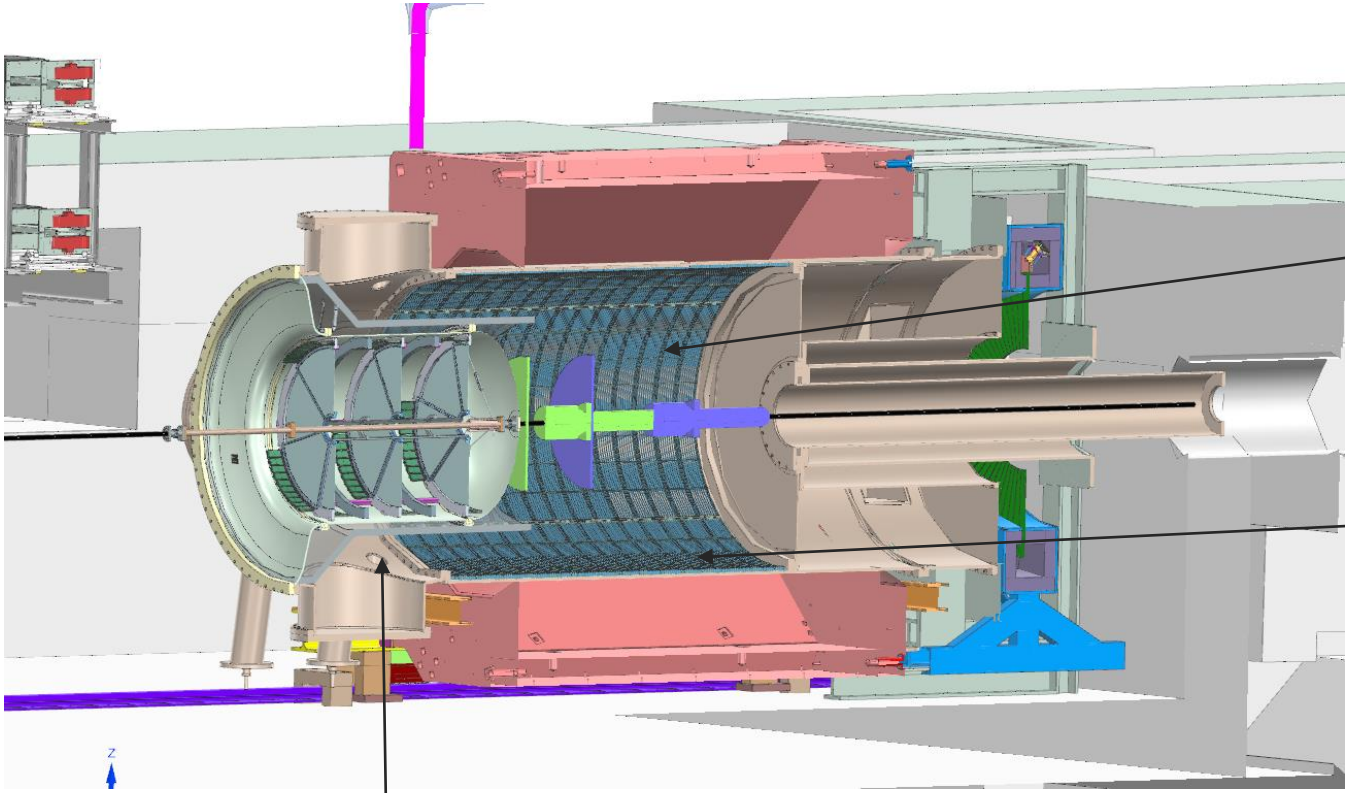
New 3D - Design vacuum chamber



Shielding Rails  
Adjustable



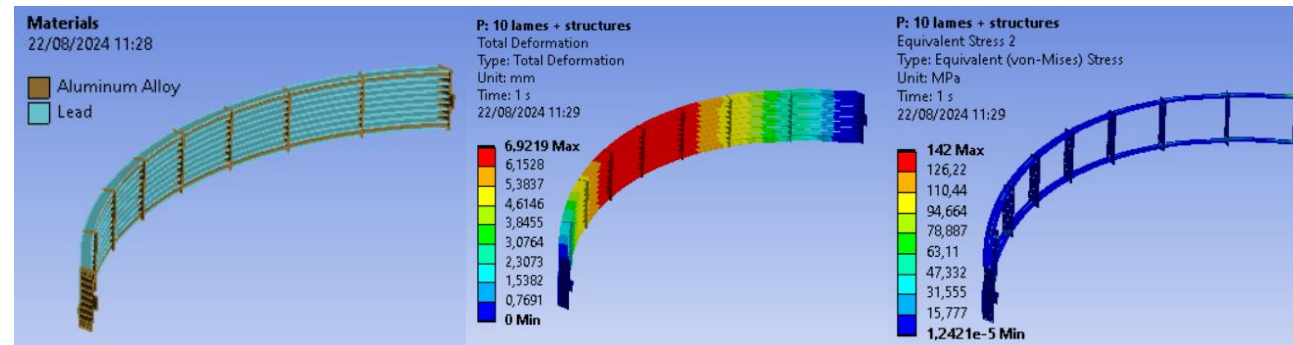
# Shielding



Shielding 2 mm thickness  
Space between shielding 20 mm  
composition of the shielding rings  
being optimised

how will the shielding interface with the  
target and target mask supports ?

Shielding in this part ?



10 shields with alu.  
structure : 12 kg

Screw-nut system to adjust the structure on the  
vacuum chamber rails



# Conclusion

- Is « Chapeau » design is OK for you?
- We don't have much space-margin for the « Chapeau » integration :  

Is there a possibility to mounting the « chapeau » before the magnets or something else?
- Is the exclusion zone compatible with the hydrogen target services?
- How will the shielding interface with the target and target mask supports? (a lot of things depend on this)
- .step file/CAD sharing?