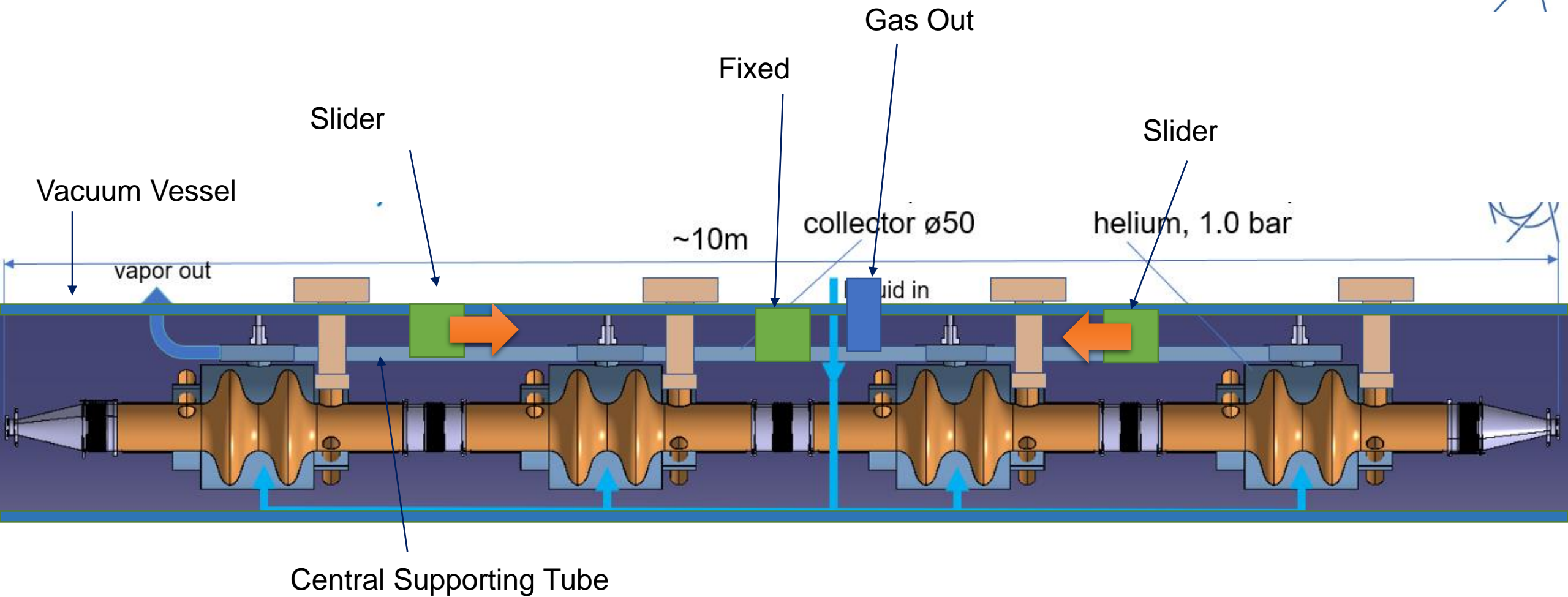
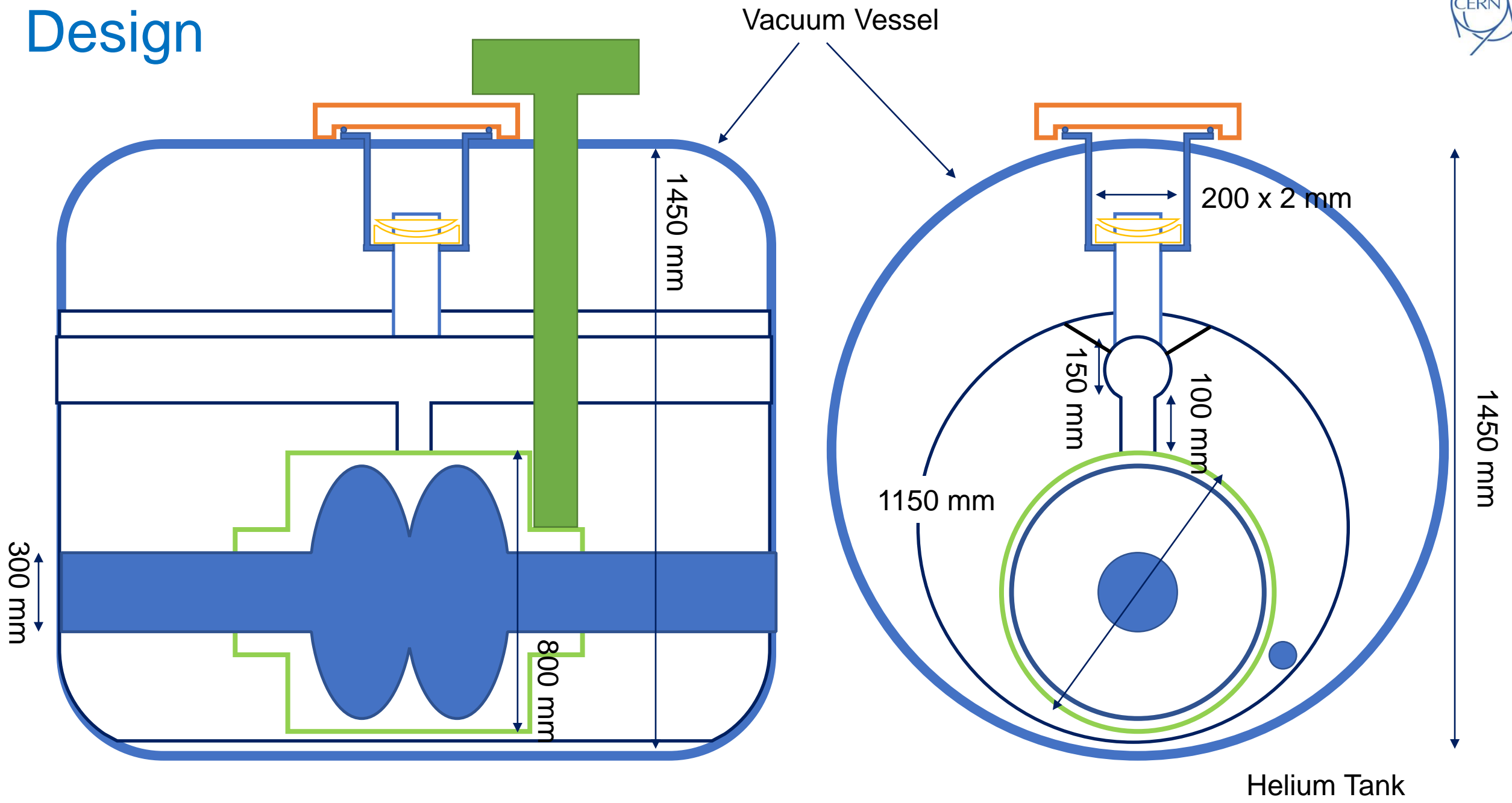


FCC-ee Cavity Cryostat Design

Technical Training: Cryostat Engineering for SC devices
CERN, 7-9 November 2022



Design



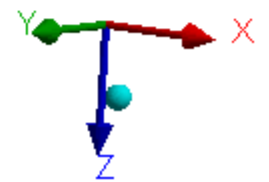
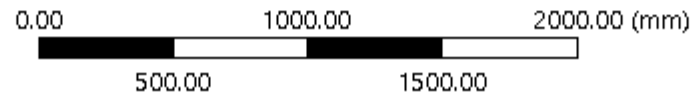
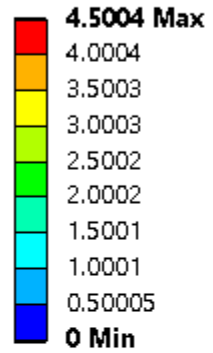
Thermal Analysis

- Support
 - $P_{\text{tot}}=3.2 \text{ W} \times 3$
 - Series of the resistance
- Radiation Vacuum Vessel
 - $P_{\text{tot}}=19.1 \text{ kW}$ ($45.5 \text{ m}^2 \times 420 \text{ W/m}^2$) NO Th. Shield and MLI
 - Need for a thermal shield and MLI
 - Stainless Steel Vacuum Vessel: Polished surface $\rightarrow P_{\text{tot}}=24 \text{ W}$
- Coupler
 - $P_{\text{tot}}=350 \text{ W}$
 - Need to active cooling and thermal Intercept

Vacuum vessel deformation

A: Static Structural

Total Deformation
Type: Total Deformation
Unit: mm
Time: 1
09/11/2022 11:24



Reinforcements needed for buckling

