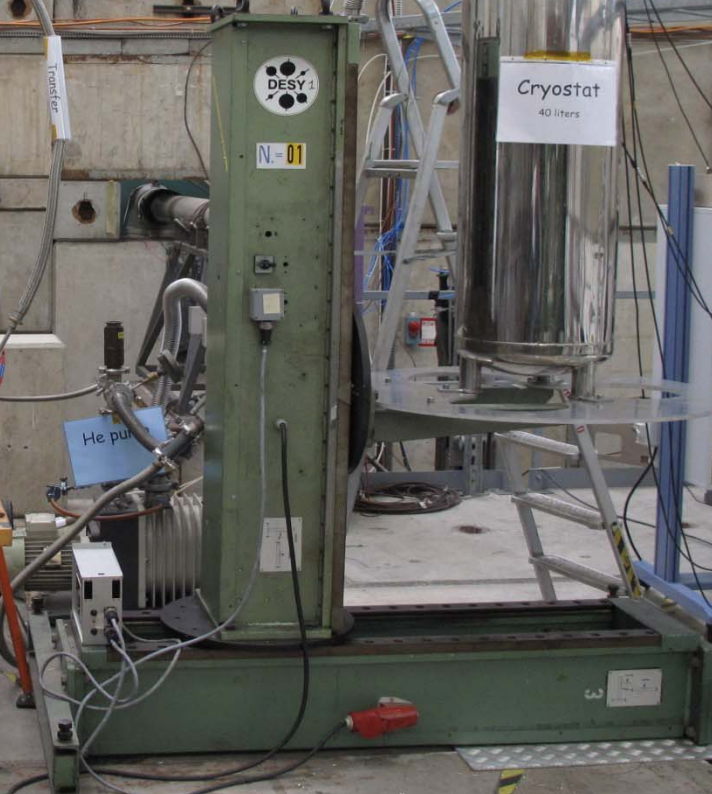


# Cryogenic setup of the last radiation tests

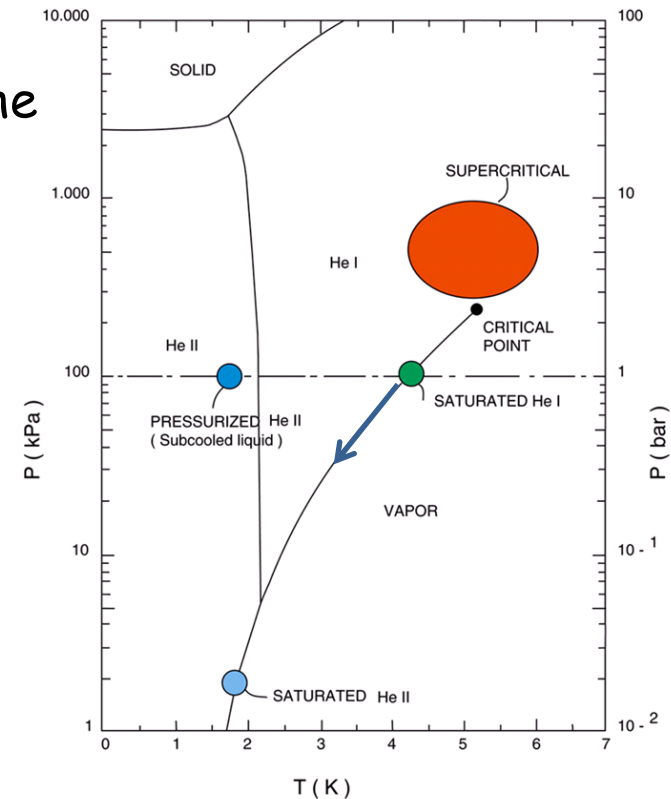


- @ LHC

- Future detectors will be placed close to the beam
- Immersed in liquid helium used to cool the magnets
- Superfluid helium He II is sub-cooled or pressurized (heat exchanger) @ 1.8K and 1 bara
- Superfluid:  $\eta_s=0$ ;  $\eta_n=\min$ ;  $h_{\text{evap}}$  high; lowest  $\Delta T$  for a given heat flux

- @ Test setup

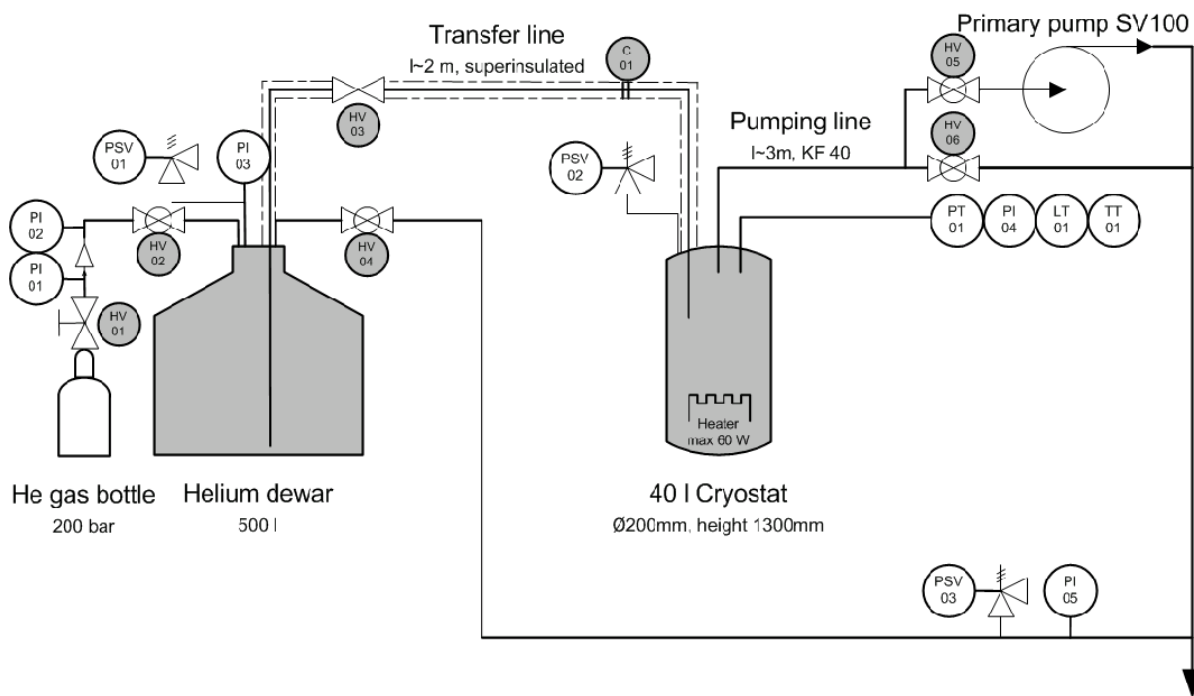
- Detectors immersed in saturated He
- Between 4.2 K @ 1 bara and 1.6 K @ 7 mbara (pumping the warm He atoms  $\rightarrow$  cool down along the saturation line)



CERN AC - CR106 - 13/03/96



# P&I diagram



\* Primary pump Alcatel, P=1.5 kW, 15 A, 3-phase AC, ~80 kg

Recuperation line  
towards cryolab

