



SPL cryomodule specification:

Preliminary summary

V.Parma, TE-MSD



issues

- Keep possibility for testing cryomodule in a beam line. Where could it be tested?
- Magnetic shielding
 - 1st shield cryo-perm: active cooling? What T? Dedicated circuit? Active solution of Spiral 2 cryomodule seems interesting
 - 2nd shield @ RT
- “fast” cool down requirement (Q disease): 100 K/h as a goal though not a specific requirement yet (vertical tests will tell us)
- No active cooling of inter-cavity bellows, but T measurement
- HL measurements.
 - Pressure gauge measurement rather than T helium, but having T cavity measured is useful (cryo), but no need for precision (could be in insulation vacuum)
 - Flow-meter could be useful
- T of thermal shield should be close to 50 K. This needs a dedicated line in SM18 or an artifact, to increase T to 50K. Δp is limited. To be checked with thermalshield geometry.
- Make a specific table of T for the test bench in SM18
- Heat Loads table: discussed and confirmed
- Clarify warm-up means (boil-off of helium, followed by vac.degradation?)
- Space allocation in bunker for cryogenic connection activity
- Connection to cryo distribution line: Confirmed:
 - Welded solution for connection to the cryo distribution line
 - Flexibility on connection to allow tilt change (0-2%)



Other issues from CNRS

- Magnetic shielding. Additional points:
 - Definition of the interfaces:
 - Tank and cavity support
 - Instrumentation
 - Making a magnetic field map of SMI8 bunker.
 - Evaluate the needs of maintenance actions on/in the cryomodule... (for design of windows)
 - Frequency
 - Type of maintenance
 - On the experimental site
 - In an intervention zone (= assembly zone)
- Yes, need access windows to access tuners (motor), HOM (there are 2), RF vac. Transitions ...frequency of intervention not discussed



Issues

- Instrumentation. Quite an exhaustive list presented by system responsible:
 - *Priority and Redundancy to be further discussed*
- Alignment budgets: cavity figures considered tight, but overall figures OK. Reconsider sharing?
- Alignment monitoring (WPM or similar) is a must to confirm the new supporting concept
- RF coupler “2-in 1” concept. Suggested dedicated mock-up for testing the mechanics and of vacuum integrity (RF gasket). Yes!



Other issues

- Cryogenic scheme. SPL slope-specific.
- Cryogenic valves/filling scheme is redundant, yes, but wanted. Aim is to test and eventually simplify.
- Dark current measurements



**Thanks to all participants
(especially speakers!) for the
fruitful meeting**