

Mechanical issues SPL cavities/cryomodules: Objectives

V.Parma

Objectives (1)

- **Choice of materials for the SPL helium vessels and ancillary components:**
 - Helium vessel (Ti vs. St. steel)
 - Flanges
 - Joints
 - Bellows
 - Magnetic shielding
 - Interface to cryogenic piping (flanged? Bi-metallic transitions?)
 - RF absorbing coatings
- **Design considerations towards a technical specification for the helium vessel:**
 - Tunability, mechanical stiffness
 - Manufacturing and assembly of cavity in helium vessel
 - Magnetic shielding
- **Rationale for choices:**
 - Technical requirements
 - Availability of technology (or needed R&D)
 - Material compliance with safety regulations (pressure vessels)
 - Cost (base materials, manufacturing, assembly, ancillaries...)

Objectives (2)

How to proceed?

Where are we with SPL?

- Cavities general parameters
- Cryo-module general parameters

Existing experience and on-going work:

- Projects/studies: FLASH (TTF), XFEL, Project X, CEBAF, SNS...
- R&D programs: Eucard
- Collaboration agreement with France (K1597/DG):
 - As part of Accord Technique No.2 (SPL):
 - CEA: “design and procurement of 2 helium vessels for cavities $\beta=1$ ”

Converge, today, towards choices for SPL:

- Agree on choices whenever possible
- Recommend lines of action towards choices