

Minutes

EN Meeting for HL-LHC CRAB CAVITIES

Monday, 29th February 2016

Room 376/1-020

Scope: regular meeting for the Crab cavities development in the scope of HiLumi LHC (WP4)

Attendees: Kurt Artoos, Ofelia Capatina, Eugenie Gallay, Teddy Capelli, Norbert Kuder, Paula Freijedo Menendez, Joanna Sylwia Swieszek, Carlo Zanoni, Laurene Giordanino, Alexandre Amorim Carvalho, Konrad Eiler, Giovanna Vandoni, Lucas Renaglia, Luca Dassa

Helium Tank:

Carlo showed a couple of images and videos from the cool-down test. The results will be showed during the next meeting. He also summarized 2 calculations:

- 1) Nb interface between cavity and pre-tuner, with non-linear material model. The plastic strain is very limited. An assessment compliant with the standards will be performed.
- 2) Simplified estimation of loads due to thermal gradient during cool down (for the real tank a difference of 40 K between top and bottom plates is applied). The stress that results is limited both in value and localization. However, Ofelia suggested taking a lower temperature for the core of the cavity. The cavity is a thin object and will tend to cool down more quickly than the tank.
- 3)

Shield:

The issue with the Catia licence for Nik has not been fully solved yet. In order to follow-up the evolution, a discussion with Nik and Tom will be organized.

Giovanna reminded that the measurements of the magnetic field in SPS will be performed on the 3rd and 4th of May.

Cryomodule:

Lucas and Teddy showed 3 possible solutions for the integration of the tube around the FPC and the plate that closes the vacuum vessel around it. One important point to be considered is the feasibility of dismounting this part in case of issues. One other care needed is the cleanliness of bellow. Lastly, access to the heaters may be hard. For that, Giovanna suggested installing some spares, which will be connected only in case of need.

SPS movable table:

Kurt reported that the discussion on the SPS movable table has fully started. One specific issue is due to the HOM loads, which may be quite big and may give issues in terms of visibility of the alignment targets. Also, the need of thick (i.e. rigid) cables, will make the task harder.

Also, the discussion of the transport of the systems to/with the movable table is on-going. It is very likely that placing the systems in position will determine a small impulse on them. We should be able to bring everything there coming from the transport zone, without the need of dismounting other systems. Ofelia, restated that, in general, we should go for the safest solution possible (i.e. just 2 positions, IN/OUT).

Also, the jacks need to be discussed and designed completely.

More news will come in the future.

Additional Actions:

- Analyze results of thermal test → Eugenie, Carlo, Norbert
- Local elasto-plastic assessment of Nb pretuner interface → Carlo, Luca, Norbert
- Organize update meeting with Nik and Tom → Carlo
- Follow up magnetic field measurements → Giovanna
- Check impulse on cryomodule when placed in SPS by the transport service → TBD
- Launch full design of supporting jacks → Kurt, Teddy

Next meeting: Monday the 7th of March 2016 in room 376/1-020 **at 10:30**.

Minutes taken by Carlo