

Minutes

EN Meeting for HL-LHC CRAB CAVITIES

Monday, 8th February 2016

Room 376/1-020

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

Attendees: Federico Carra, Elisa Cantergiani, Lucas Renaglia, Kurt Artoos, Giovanna Vandoni, Ofelia Capatina, Eugenie Gallay, Luca Dassa, Teddy Capelli, Norbert Kuder, Paula Freijedo Menendez, Joanna Sylwia Swieszek, Carlo Zanoni, Laurene Giordanino, Alexandre Amorim Carvalho, Konrad Eiler, Pierre Minginette, Rama Calaga, Mateusz Sosin, Niklas Templeton (STFC)

Cavities:

Elisa gave a presentation on Electro Hydraulic Forming. Explanation on the method and comparison with Spinning and simple hydraulic forming. The main provider is BMAX. EHF results in a thinner damage layer.

The Nb from Ningxia has been received and the first shaping test with Nb has been performed.

Helium Tank:

The helium tank prototype is leak tight. There have been some issues with a helicoflex, which in any case will not be used in the final tank. There are small ($1e-9$ mbar*l/s) leaks through the connectors feedthrough. However, they do not hinder the next testing steps.

Carlo Zanoni presented a review of the load story for the cavity. One main point is that there may be substantial (other than conceptual) difference between simulation and strength assessment. Question is addressed on which material properties to use, as these change during fabrication. Load cases are shown in a table; they include thermal gradient during cooldown. One residual open point is also the whole tuning procedure, and, as consequence, how simulate or assess them.

Rama asked for a summary of all calculation done, to be applied also for RFD and not only for DQW. Carlo highlighted that RFD follows the same procedure and actually takes advantage of the discussions on the DQW. Norbert complained about problems with stability of the cluster on which calculations are run.

Cold Magnetic Shield:

Carlo showed the analysis of the data provided on the cold shields. The measurements have been compared with simulations and look good. The reduction factor provided is about 65 (top value, near the beam ports it's less). Ofelia asked to double check the effect at warm and cold doesn't change too much [follow-up: checked, the simulations provide similar results due to absence of full saturation of the shield].

Nik said they plan to make more accurate measurements once the shields are at their facilities.

Thermal Shield:

Nik and Teddy showed a further update of the integration of the thermal shield. The helium bi-phase tank has been lowered and now allows a flat shield top plate. To be verified with respect to the HOM cool down.

SM18:

Pierre presented the toolings for the area in front of the clean room. In need of intervention on the LHC module, there's enough space. Storage space also identified.

Discussion with Eric and Alick: Eric takes over the assembly of the HOM and FPC on the cavity string in clean room.

AOB:

Specification for Cryomodule to be started soon. Everybody is asked to proactively foresee the deadline in terms of procurement and fabrication.

Additional Actions:

- Complete the load history summary with a parallel with the RFD → Carlo, Luca, Norbert

Next meeting: Monday the 15th of February 2016 in room 376/1-020 **at 10:30**.

Minutes taken by Carlo