

Minutes RF structure meeting on PIMS mechanics 08.05.2008

present: P. Bourquin, R. De Moraes Amaral, G. Favre, F. Gerigk, J-M. Lacroix, G. Vandoni, M. Vretenar, R. Wegner

attached documents: latest 3D drawings (J.-M. Lacroix)

news & facts:

- the funding for the PIMS is now confirmed for this year, which means that the machining of the prototype at CERN can start this year,
- the welding test from the Soltan institute is now several weeks late, Frank asked for clarification,

cold model

- the end-cells of the cold model had to be re-machined because of an error in the simulations. After re-machining in the RF workshops, the field profile was flat and the correct frequency could be easily adjusted. The next measurements will quantify the R/Q values and verify the cell to cell coupling for the different coupling hole shapes.

cooling

- Ricardo calculated a pressure drop of ~160 mbar for one cooling channel, which is 1/4th of a cell. In the simulations it is assumed that the water is distributed in parallel to the different channels of each cell. The flow of 1.4 l/m in each channel should be safe to avoid any corrosion effects at the bends. Gilles requested that the distance between the channels and the beam tube inside of the noses be increased from now 3 mm to a value around 10 mm. Ricardo will assess the impact on the cooling.

copper

- Gilles informed us that the copper pieces from the old LEP cavity are now being cut. Stephano Sgobba confirmed on the phone that after some re-cutting in their workshop they will be ready for shipping by Monday.

vacuum

- Jean-Michel presented an integration and layout with 2 pumps per structure, one on each end cell. The pumping capacity of this solution seems to be very generous. Rolf suggested to use the port on the waveguide coupler for all the pumping, which would very much simplify the integration and the mechanics (no conflict with cooling channels, more space between cavities,...) Giovanna will study this option (Rolf/Frank will provide details on the wave-guide port geometry and on the pumping hole surface).
- each of the pumps, which are in the present set of drawings has a weight of ~80-100 kg

mechanics

- Pierre and Ricardo have started to study the tank rigidity to define the needed thickness for the cylinders and the welding joint. It seems that a thickness of 7 mm, and even less for the welding joint can be enough. Further simulations are necessary taking into account the weight that is attached to the structure (pumps, etc). For the wave-guide Ricardo will assume 300 kg (incl. safety margin)

planning

- the goal is to define a planning for construction in the CERN workshops in 2 weeks time.

next meeting

15 May 2008, 11:00 on vacuum (G. Vandoni, R. Wegner, F. Gerigk, J-M. Lacroix) in Franks office (19-2-027)

22 May 2008, 11:00 for everyone in 6-2-002

minutes by Frank Gerigk

-- FrankGerigk - 08 May 2008

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