Contribution ID: **148** Type: **Poster presentation (105min)**

Thermal and Mechanical Analysis of the Radiation Shield Design of the HiLumi-LHC Crab Cavity Cryomodule

Thursday, 10 July 2014 10:30 (2h 15m)

A prototype cryomodule to test the crab cavities for the HILumi-LHC is being designed and will be tested on SPS at CERN in 2016. The cryomodule design consists of a unique open access structure facilitating loading of the cavity-assembly from sides. It also provides access to internal components quickly and easily even after installation. Design of the radiation shield and the cooling scheme for introducing thermal intercepts at intermediate temperatures particularly for the high power RF couples is critical to achieve a desired stability at the operating temperature of 2K and also to keep the cooling power within the limits of the cryoplant available in the SPS test area at CERN. A detailed study has been conducted to address the cooling power requirements at intermediate temperatures. This paper describes the results of the thermal and mechanical analysis of the design for the radiation shield and thermal intercepts developed in the process

Primary author: MAY, Andrew (STFC Daresbury Laboratory)

Co-authors: PATTALWAR, Shrikant (STFC Daresbury Laboratory, UK); JONES, Thomas (STFC)

Presenter: PATTALWAR, Shrikant (STFC Daresbury Laboratory, UK)

Session Classification: Thu-Mo-Posters Session 3.2

Track Classification: C-05: Cryostat technology