



Contribution ID: 711

Type: **Poster Presentation**

C2Po2A-05 [21]: Design, procurement, installation and commissioning of the cryogenic infrastructure for a new superconducting RF test facility with beam at CERN.

Tuesday, July 23, 2019 1:30 PM (2 hours)

The High-Luminosity LHC project –HL-LHC aiming at peak luminosity above $5.0 \cdot 10^{34}$ cm⁻².s⁻¹ consists in replacing the matching sections on both sides of the ATLAS and CMS experiments. To complement new focusing quadrupoles, this upgrade considers using the so-called superconducting crab cavities, never operated so far with protons and therefore requiring qualification with beam. To this aim, a new cryogenic infrastructure for a superconducting RF test facility was initiated and recently installed at CERN SPS accelerator in 2018. From the early studies of heat load and design principles to the successful tests passed during late 2018, this paper describes the main cryogenic requirements for such a test facility, its design challenges, procurement, installation and commissioning up to stable operation of the crab cavities module in superfluid helium at 2 K.

Primary author: DELPRAT, Laurent (CERN)

Co-authors: BRODZINSKI, Krzysztof (CERN); Mr CLAUDET, Serge (CERN); DERKING, Jan Hendrik (CERN)

Presenter: DELPRAT, Laurent (CERN)

Session Classification: C2Po2A - Test Facilities