



Contribution ID: 595 Contribution code: WED-OR2-103-02

Type: **Invited Oral**

[Invited] AUP first pre-series Cryo-Assembly Design Production and Test Overview

Wednesday, November 17, 2021 8:45 AM (15 minutes)

New high field and large-aperture quadrupole magnets for the low-beta inner triplets (Q1, Q2, Q3) are being built as part of the high-luminosity upgrade of the Large Hadron Collider (HL-LHC). These new quadrupole magnets are based on Nb3Sn superconducting technology. US Accelerator Upgrade Project (US-AUP) is producing the Q1 and Q3 cryo-assemblies; a pair of ~ 5 m long magnet structures installed in a stainless-steel helium vessel (cold mass) and surrounded by cryostat shields, piping, and vacuum vessel is the Q1/Q3 cryo-assembly. This paper gives an overview of the design, production and the results of the horizontal test of the first pre-series Q1/Q3 cryo-assembly.

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Session Classification: WED-OR2-103 HL-LHC Accelerator Magnets I