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STRING test facility at CERN for HL-LHC

Monday 31 March 2025 14:00 (30 minutes)

Oral presentation (20 min) + Q&A (10 min)

The High-Luminosity Large Hadron Collider (HL-LHC) Inner Triplet (IT) STRING aims to faithfully replicate, within a surface building, the collective behavior of various systems in the new HL-LHC IT zone. These systems include superconducting magnets, magnet protection, cryogenics for both the magnets and the superconducting link, powering, vacuum, alignment, magnet interconnections, and the superconducting link itself.

The construction of this test bed, designed to be completed years ahead of the actual equipment installation in the LHC tunnel, is now well advanced. Initiated in 2016, the project has taken significant shape: most of the hardware is in place, and parts of the control and software systems are already operational. By the end of 2025, we expect the entire STRING to be cooled to 1.9 K, marking the readiness for the String Validation Program.

In this talk, we will provide an update on the installation status, describe the major components, outline the test program, and discuss the next steps.

Presenter: BAJKO, Marta (cern)