SRF2025 TOKYO

22ND INTERNATIONAL CONFERENCE ON RF SUPERCONDUCTIVITY

September 21-26, 2025

Contribution ID: **320** Contribution code: **THP82** Type: **Poster Presentation**

LCLS-II HE cryomodule test results after an uncontrolled vacuum event

Thursday 25 September 2025 14:30 (3 hours)

During the preparation for the installation of the LCLS-II HE cryomodules, one previously qualified cryomodule experienced an uncontrolled vacuum event. The cavity string vacuum unexpectedly increased to 2 × 10^ (-3) Torr. Simulation showed the vacuum incident may have introduced 0.1 μm sized particulates into the cavity RF volume. Careful analysis of the particulates' path and migration indicated that the particle migration was negligible except for finer particles smaller than 0.1 μm. A repeat test of the cryomodule verified the initial analysis. The cryomodule's performance was intact. All cavities experienced no detectable x-ray as in its previous test. Particles of the smaller size may not cause harm to the cryomodule at the admin limit of the HE cavity gradients. This article describes the vacuum event, analysis, and cryomodule test results before and after the event.

I have read and accept the Privacy Policy Statement

Yes

Footnotes

Funding Agency

The work was supported by DOE contract 89243024CSC000002 for FNAL and DE-AC02-76SF00515 for SLAC

Author: CRAVATTA, Andrew (Fermi National Accelerator Laboratory)

Co-authors: WU, Genfa (Fermi National Accelerator Laboratory); WHITE, Dominique (SLAC National Accelerator Laboratory); Mr ARKAN, Tug (SLAC National Accelerator Laboratory); MANISCALCO, James (SLAC National Accelerator Laboratory)

Presenter: WU, Genfa (Fermi National Accelerator Laboratory)

Session Classification: Thursday Poster Session

Track Classification: MC4: SRF Technologies