Contribution ID: **6** Type: **not specified**

LHC Experimental beam vacuum during long shutdowns: Upgrades and new challenges

Tuesday, 16 April 2024 11:00 (25 minutes)

Experimental beam vacuum systems located within experimental caverns of ALICE, CMS and LHCb experiments successfully passed major upgrades during the Long Shutdown 2. The layout of the machine at ALICE cavern was upgraded based on physics performance requirements. A new central beryllium chamber compatible with new Inner Tracking System was installed and commissioned during the pandemic year 2020. Experimental vacuum system of the CMS detector underwent the most extensive change since its installation in 2008. The new layout, including central beryllium chamber compatible with Phase 2 tracker as well as 30 meters of custom-built aluminium vacuum chambers supported by optimized structural supporting system was installed commissioned during spring 2021. Experimental vacuum system of the LHCb detector remained the same as during the LHC Run 2, however the most sensitive part of the entire system, the Vertex Locator (VELO) passed an upgrade containing also both beam and detector vacuum systems. Foreseen layout changes during the Long Shutdown 3 involving experimental beam vacuum systems will be also discussed as well as production challenges for both aluminium and beryllium vacuum chambers.

Summary

Primary authors: Mr CALEGARI, Didier; PAGE, Eric (CERN); BREGLIOZZI, Giuseppe (CERN); SESTAK, Josef (CERN); Mr CHAURE, Jerome; Mr SANTOS, Orlando; Mr RASKA, Tomas

Presenter: SESTAK, Josef (CERN)

Session Classification: Session 1