



Cryogenics Operations 2018

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LHC Cryogenics availability and helium inventory management during Run 2 (2015-2018)

The year 2018 is the last operational year of Run 2 period, which has seen increased beam-induced heat loads due to increased beam energy from 4 TeV to 6.5 TeV. Despite constraints of the operational conditions, extensive experience gained through the whole run period allowed to maintain a high level of availability as well as reducing helium losses. The key operation performance indicators of the LHC cryogenic system for Run 2 will be presented, emphasizing on the global cryogenic availability to physics. Aspects regarding hardware reliability will be discussed, focusing on the impact of the LHC cryogenic system configurations adopted for Run 2.

From the helium management point of view, several actions have been undertaken ensuring a close follow-up of the inventory and reducing significantly the losses. The presentation will cover the LHC helium storage management including the overview of Run 1 to Run 2 statistics. Finally, in the view of Long Shutdown 2 (LS2) preparation, the externalized helium storage strategy allowing flexibility for maintenance and consolidations works will be addressed.

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