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# C2Or2A-01: Operation experience with a 1.8 K refrigeration unit during the 2024 LHC physics run at CERN

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More than 6'000 hours of nominal cryogenic conditions were provided for the LHC (Large Hadron Collider) physics run during 2024, allowing to reach a record integrated luminosity of 124 inverse femtobarns. The cryogenic system availability during this year was of 96.5% (target 95% to 98%). Out of the total downtime, 80% came from a series of events that led to five trips of the same 1.8 K refrigeration unit. To ensure that a high level of availability is kept as the equipment ages and the luminosity of the machine increases, all failure cases as well as its effects have been thoroughly analyzed. The results together with new consolidation measures aiming at further increasing the reliability and availability to physics are presented.

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