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HL-LHC Challenges

Wednesday 20 November 2024 18:00 (1 hour)

The contribution recalls the HL-LHC design parameter and upgrade goals. The main remaining challenges and potential performance limitations that became visible with the re-start of the third operational run of the LHC after the second long shutdown (LS2) are recalled. This includes the beam performance in the injector complex following the LHC Injector upgrade, the e-cloud build-up and related heat load in the LHC arcs, the effect of dust particles in the vacuum chambers and radiation effects to electronics on machine availability as well as the status of magnet training for the LHC dipoles. The goals and planning of the IT String as one of the important intermediate milestones of the HL-LHC upgrade are presented along with the status of the global project planning and the current performance ramp-up scenario following the deployment of the project in LS3.

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