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The LHC machine status

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The beam commissioning of the LHC in September 2008 was stopped abruptly after only a few days due to a magnet powering incident. An electric arc developed at the location of a poor soldering, releasing a large amount of energy into the magnets and the cryogenic system. The analysis of the incident and the subsequent repair of the affected arc of the LHC revealed a weakness in the protection of the magnet at the level of the interconnection of the magnets. To prevent similar incidents in the future, the LHC and its magnet protection system were subject to an important upgrade and consolidation program. After 14 months of repair, consolidation and recommissioning, beams were finally circulating again in the LHC end of November 2009, marking the beginning of the beam commissioning that lead to first collisions and acceleration to 1.2 TeV within 2 weeks of the startup. This presentation will discuss the issues leading to the incident of September 2008, the upgrade and consolidation program, and finally detail the beam commissioning of the LHC, including an outlook on the LHC run of 2010/2011.

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Classification de Session: The LHC start-up

Classification de thématique: Experiment