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What could stop us,when and how long? (15' + 10')

Tuesday 29 October 2013 17:00 (25 minutes)

Abstract:
The life of the LHC accelerator magnets, much as any other classical electrical machine, is limited in time. This is especially true because the LHC is subjected to significant radiation and cycled electrical stress. The aim of this talk is to review the life limits of the LHC magnets, and provide an estimate for the failure risks at the time horizon of 2020 and beyond, in the hypothesis that no consolidation action, other than normal maintenance, is taken. We consider in particular the magnets at critical locations and subjected to radiation load, either from luminosity debris (IR quadrupoles, orbit and high order corrector packages, warm separation dipole D1), or beam losses at collimators (warm quadrupoles MQW). We also attempt to draw conclusions from electrical fault statistics and electrical quality assurance measurements and their implications for the life of the electrical circuits.

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Session Classification: Session 2 - Post LS1 scenarios without and with LINAC4