Contribution ID: **53** Type: **Presentation**

Overview of important design parameters and technologies. Status of LHC machine

Tuesday 24 May 2005 09:10 (40 minutes)

For the LHC to provide particle physics with proton-proton collisions at the centre of mass energy of 14 TeV with a luminosity of 10^34 cm-2s-1, the machine will operate with high-field dipole magnets using NbTi superconductors cooled to below the lambda point of helium. In order to reach design performance, the LHC requires both, the use of existing technologies pushed to the limits as well as the application of novel technologies. The construction follows a decade of intensive R&D and technical validation of major collider sub-systems. The lecture will focus on the required LHC performance, and on the implications on the technologies. The consequences of the unprecedented quantity of energy stored in both magnets and beams will be discussed. A brief outlook to operation will be given.

Author: Dr SCHMIDT, R.

Presenter: Dr SCHMIDT, R.

Session Classification: session 1