Joint DESY and University of Hamburg Accelerator Physics Seminar

Wednesday, September 07, 2005

(10:30 in Room 459/30b)

The LHC Transverse Feedback System

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Abstract

The Large Hadron Collider (LHC) being built at CERN requires a strong transverse feedback system to damp injection oscillations and provide stability against coupled bunch oscillations on the injection plateau and during the ramp. The system comprises tetrode power amplifiers installed in the accelerator tunnel directly below the deflecting elements and uses modern FPGA technology for the digital signal processing. The specifications for the system are presented as well as the technical implementation of all elements of the feedback loop. For the signal processing a common hardware is developed at CERN for this transverse feedback system and the 1-Turn longitudinal cavity feedback in the LHC. It is also planned to use this hardware in smaller synchrotrons at CERN, notably the PS accelerator, albeit with some modifications to cope with the large revolution frequency swing.

NOTE THE UNUSUAL DATE AND TIME

D.P.Barber (MPY), J.Rossbach (Univ. HH) and M.Vogt (MPY).

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