COMMISSIONING OF THE LHC COLLIMATION SYSTEM

S. Redaelli, R.W. Assmann, C.B. Bracco, M. Jonker, G. Robert-Demolaize, Th. Weiler, CERN, Geneva

Abstract

The collimation system of the Large Hadron Collider (LHC) will rely on 90 collmators for beam cleaning and machine protection. The full system includes betatron and momentum cleaning collimators, beam absorbers, local protection elements, injection protection devices and transfer line collimators. These collimators must all be coherently adjusted with tight tolerances to small gaps around the beam, at distances from the beam centre that range from 4.5 to 10 betatron beam sigmas. In particular, the relative rectraction of elements placed in different locations along the 27~km LHC ring must be respected to ensure the required overall cleaning and protection performance. In this paper, the proposed scenarios for commissioning and operating this complex system are discussed. The achievements at SPS with a collimator prototype are also outlined.

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