

Dynamic Aperture Studies for the LHC,
F. SCHMIDT et al., CERN - The limitations of the dynamic aperture due to field errors of the superconducting magnets is a notorious problem for the LHC. Given the large amount of independent studies performed by a sizeable research team it becomes necessary to define a common tracking strategy. The emphasis is placed on an elaborate on- and off-line processing of the tracking data making use of all tools presently available. To manage the very time-consuming investigations our approach is two-fold: firstly we are maximising the computing power running optimised code on state of the art equipment which is continuously upgraded and secondly we speed up the studies by using reliable and automated early indicators for long-term losses. The procedure is exemplified with a series of tracking runs for the LHC version 4.1. A summary is given on single particle tracking results which are of general interest for the design of large nonlinear hadron colliders.