

A Strategy for Controlling the LHC Magnet Currents,

I. BARNETT,

G. FERNQVIST,

D. HUNDZINGER, J.C. PERREARD, J.G. PETT,
CERN, Geneva -

The LHC will require an unprecedented precision of a few ppm in the control of the current in the major magnetic circuits. As a result of the optimisation of the machine design, the machine will be powered in eight sectors with separate power converters. This scheme, along with other operational constraints, has led to a re-evaluation of the methods needed to ensure adequate performance. An overview of the strategy envisaged to meet this new challenge is presented, along with details of digital control and correction methods, new techniques for analog-digital conversion and improvements in DC current transducers above 10 kA.