

Protection of LHC Superconducting Corrector and Insertion Magnets, F. RODRIGUEZ-MATEOS, R. SCHMIDT,

CERN, Geneva - For the proton-proton collider LHC the protection of all superconducting magnets in case of a quench has to be considered already in the design phase. The protection of main dipole and quadrupole magnets, based on cold diodes and quench heaters, is reported elsewhere. In this paper the protection of other magnets is discussed. In the arcs some of the magnets are connected in series: sextupole magnets to correct the lattice chromaticity, small sextupole and decapole magnets to correct systematic field errors of the dipoles and octupole magnets. The magnets in the arcs to correct horizontal and vertical closed orbit excursions are powered individually. In the insertions other superconducting magnets will be used: quadrupole magnets for the low-beta insertions, orbit corrector magnets etc. Some magnets will be constructed with sufficient copper stabilization to safely absorb the energy. For other magnets different methods of protection after the detection of a quench in the circuit are envisaged.