

**Title:**

Computation of Parasitic Fields in the LHC

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**Abstract:**

The Large Hadron Collider (LHC), now under construction at CERN, will rely on about 1600 main superconducting dipole and quadrupole magnets and over 7400 superconducting corrector magnets distributed around the eight sectors of the machine. Each type of magnets is powered by dedicated superconducting busbars running along each sector and passing through the iron yokes of the main dipole and quadrupole magnets. In the numerous magnet interconnects, the busbars are not magnetically shielded from the beam pipes and produce parasitic fields that can affect beam optics. We review the 3D models which have been built with the ROXIE software package to evaluate these parasitic fields and we discuss the computation results and their potential impacts on machine performance.