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## A Statistical Analysis of Electrical Faults in the LHC Magnets

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The Large Hadron Collider (LHC) at CERN has been operating and producing physics since September 2008, and has entered after a first long shut down its second, 4-year long physics run. The LHC is to date the largest superconducting installation, counting some 10000 magnets along its 27 km long circumference. A significant operational experience has been accumulated, including the occurrence and consequences of electrical faults at the level of the main magnets, as well as their protection and instrumentation circuits. The purpose of this paper is to provide a first overview of the typical electrical faults and their frequency of occurrence in the first years of operation, and to perform a statistical analysis that can provide typical values for similar future productions.

### Submitters Country

Switzerland

**Authors:** BOTTURA, Luca (CERN); TOCK, Jean-Philippe (CERN); ARJAN VERWEIJ (PROGRAM CHAIRMAN) (CERN); LE NAOUR, Sandrine (CERN); AUCHMANN, Bernhard (CERN); BEDNAREK, Mateusz Jakub (CERN); CALCOEN, Daniel (CERN); CHARIFOULLINE, Zinour (CERN); COELINGH, Gert-Jan (CERN); D'ANGELO, Giorgio (CERN); HAGEN, Per (CERN); MILANESE, Attilio (CERN); MODENA, Michele (CERN); MONTABONNET, Valerie (CERN); Mr PERIN, Antonio (CERN); POJER, Mirko (CERN); RODRIGUEZ MATEOS, Felix (CERN); ROMERA RAMIREZ, Ivan (CERN); SCHEUERLEIN, Christian (CERN); SCHMIDT, Rudiger (CERN); SIEMKO, Andrzej (CERN); SOLFAROLI CAMILLOCCI, Matteo (CERN); STECKERT, Jens (CERN); TODESCO, Ezio (CERN); WIL- LERING, Gerard (CERN); WOLLMANN, Daniel (CERN); ZERLAUTH, Markus (CERN)

**Presenter:** TOCK, Jean-Philippe (CERN)

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