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Coil Manufacture, Assembly and Magnetic Calibration Facility for Warm and Cold Magnetic Measurements of LHC Superconducting Magnets.

The manufacture and magnetic measurement activity of the superconducting magnets for
LHC has now achieved its peak. Precise magnetic measurements of various types must be performed on hundreds of dipole and quadrupole magnets on the warm and cold test stands at CERN but also during the manufacturing process in the member states' industry as a quality control. A wide range of requirements must be covered by the measuring systems such as harmonic field measurements, quadrupole axis and gradient measurements, optical and geometrical checks combined with magnetic measurements, static A.C. measurements and also quench location or propagation.

Nearly all currently used instruments and measuring heads have been manufactured, assembled and calibrated in a dedicated laboratory at CERN, in particular all systems using rotating coil techniques. This presentation gives an overview of CERN's coil manufacture and measuring head assembly and maintenance facility as well
as of the activities in the magnetic calibration laboratory where initial measurements and periodic maintenance checks are performed.

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