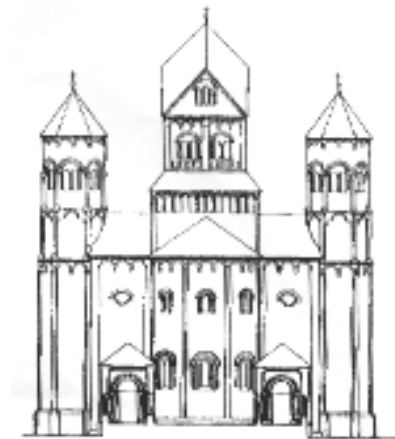


# Detector technologies for LHC experiments

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## Abstract

The Large Hadron Collider (LHC) at CERN will provide proton-proton collisions at a centre-of-mass energy of 14 TeV with a design luminosity of  $10^{34} \text{cm}^{-2} \text{s}^{-1}$ . The exploitation of the rich physics potential is illustrated using the expected performance of the two general-purpose detectors ATLAS and CMS.

The lecture introduces the physics motivation for experiments at the LHC energy. The design parameters and expected performance of the LHC machine are then discussed, followed by the design objectives for the detectors. The technical solutions are presented for each detector system (calorimetry, muon system, inner tracker, trigger). For each system the requirements, the technology choices and the achieved and expected performance are discussed.

Lectures given at

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Copies of the transparencies are available in reduced format (black-and-white) from the secretariats of ATLAS and CMS (1999-093 Talk). A full-size colour version is available for consultation.

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