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Coordinates: 46°14′N 06°03′E

Large Hadron Collider

The **Large Hadron Collider** (**LHC**) is the world's largest and highest-energy particle collider and the largest machine in the world.[1][2] It was built by the European Organization for Nuclear Research (CERN) between 1998 and 2008 in collaboration with over 10,000 scientists and hundreds of universities and laboratories, as well as more than 100 countries.[3] It lies in a tunnel 27 kilometres (17 mi) in circumference and as deep as 175 metres (574 ft) beneath the France–Switzerland border near Geneva.

The first collisions were achieved in 2010 at an energy of 3.5 teraelectronvolts (TeV) per beam, about four times the previous world record.[4][5] After upgrades it reached 6.5 TeV per beam (13 TeV total collision energy, the present world record).[6][7][8][9] At the end of 2018, it entered a two-year shutdown period for further upgrades.

The collider has four crossing points, around which are positioned seven detectors, each designed for certain kinds of research. The LHC primarily collides proton beams, but it can also use beams of heavy ions: lead–lead collisions and proton–lead collisions are typically done for one month per year. The aim of the LHC's detectors is to allow physicists to test the predictions of different theories of particle physics, including measuring the properties of the Higgs boson[10] and searching for the large family of new particles predicted by supersymmetric theories,[11] as well as other unsolved questions of physics.

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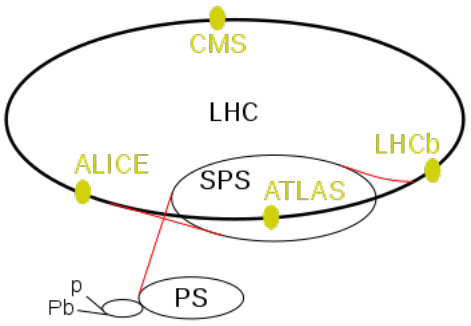

LHC experiments	
ATLAS	A Toroidal LHC Apparatus
CMS	Compact Muon Solenoid
LHCb	LHC-beauty
ALICE	A Large Ion Collider Experiment
TOTEM	Total Cross Section, Elastic Scattering and Diffraction Dissociation
LHCf	LHC-forward
MoEDAL	Monopole and Exotics Detector At the LHC
FASER	ForwArd Search ExpeRiment
LHC preaccelerators	
p and Pb	Linear accelerators for protons (Linac 4) and lead (Linac 3)
(not marked)	Proton Synchrotron Booster
PS	Proton Synchrotron