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CMS Outreach CERN



The Compact Muon Solenoid Experiment

European Organization for Nuclear Research



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This site is obsolete and will disappear in Spring 2012

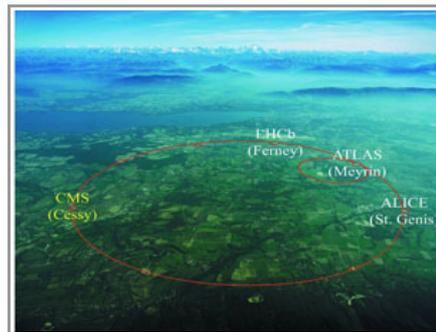
Please use the new CMS Web site:

<http://cern.ch/cms>

CMS Timeline

[Click on a year to see highlights of the past 10 years](#)

The CMS (Compact Muon Solenoid) cavern was excavated completely from scratch at the old Large Electron Positron Collider (LEP) tunnel at Point 5 near Cessy. Detector elements were transported here from all over the world.



Unlike CERN's other experiments, the large-scale assembly and testing at CMS took place in the huge surface hall so that work could continue in parallel on the cavern below.

In fact CMS was built at Cessy for this reason; the geological conditions at Point 5 are less hospitable than at other access points and only CMS, with this method of experiment construction, could ensure it would not be delayed by problems with civil engineering. It also required a smaller cavern than

ATLAS, so had the overall advantage when dealing with more difficult ground.

Excavation indeed turned out to be difficult as due to running water under the surface, engineers needed to freeze the ground using liquid nitrogen before they could dig through it. Once the site and cavern were complete and components assembled, fifteen separate and fully formed slices of the detector were then carefully lowered underground. The heaviest piece weighed 2000 tonnes with just 20 cm space between it and the shaft walls. Since 2006 the surface hall and shaft have seen a stream of spectacular detector elements file underground, and now they entirely fill the cavern.

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