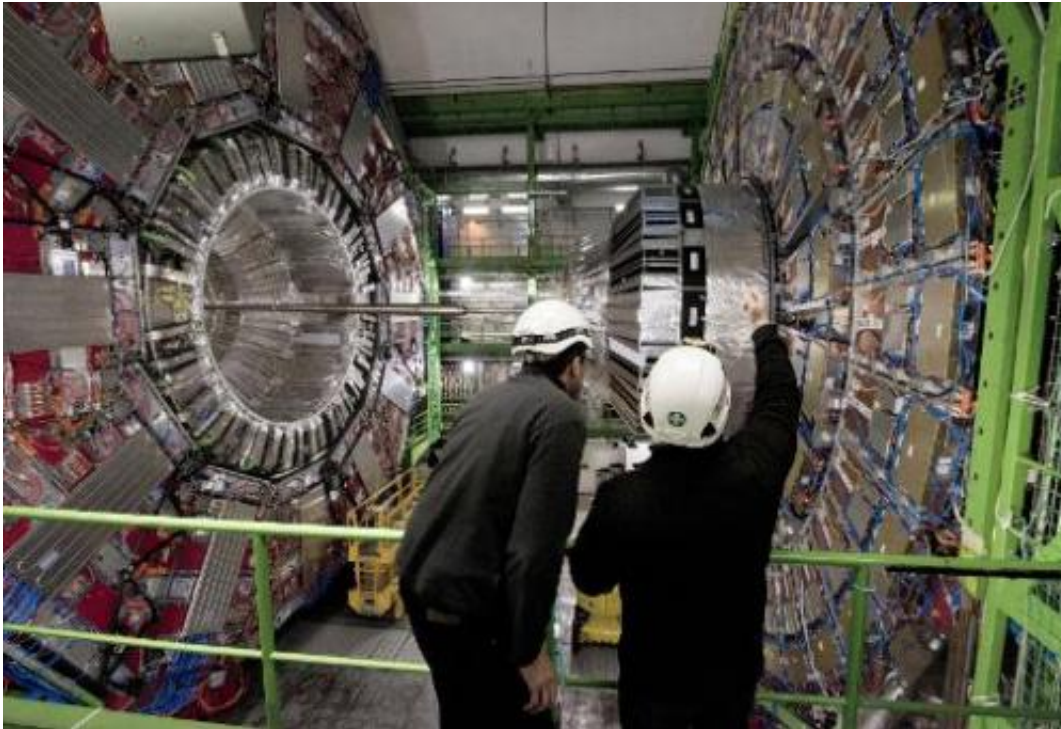


Short circuit delays particle hunter machine restart

March 25 2015



Workers seen on February 10, 2015 in front of the CMS (Compact Muon Solenoid) Cavern at the European Organisation for Nuclear Research (CERN) in Meyrin, near Geneva, Switzerland

A short-circuit at the world's largest proton smasher has indefinitely delayed the particle-hunting machine's planned restart, the European Organisation for Nuclear Research (CERN) said on Wednesday.

The error occurred last Saturday in one of the Large Hadron Collider's (LHC) magnet circuits, the laboratory said in a statement.

"It is a well understood issue, but one that could take time to resolve," it said.

The LHC is a 27-kilometre (17-mile) ring-shaped tunnel, in which two beams of protons are sent in opposite directions.

Powerful magnets bend the beams so that they collide at points around the track where four laboratories have clusters of sensors.

Some of the protons smash together, creating sub-atomic rubble that may hold clues to novel particles, from which physicists hope to learn more about the fundamental building blocks of all matter, and the forces that control them.

In 2012, scientists at CERN, one of the world's top research centres on [particle physics](#), announced they had discovered the Higgs boson, until then only theorised as the mass-giver to all matter—a feat crowned with the 2013 Nobel Prize in physics.

The LHC has since undergone a two-year upgrade that nearly doubled its muscle.

The lab's super-powered hunt for particles that may change our understanding of the universe, was due to resume any day now.

Beams containing billions of [protons](#) travelling at 99.9-percent the speed of light, were to have begun recirculating in late March, while collisions had been planned for end-May or early June.

But post short-circuit repairs may take weeks, said CERN, a giant lab

straddling the Swiss-French border near Geneva.

"In the grand scheme of things, a few weeks' delay in humankind's quest to understand our universe is little more than the blink of an eye," CERN director Rolf Heuer said.

Scientists hope the new run of the LHC will shed light on theoretical concepts like dark matter and dark energy, and possible extra dimension.

© 2015 AFP

Citation: Short circuit delays particle hunter machine restart (2015, March 25) retrieved 9 April 2024 from <https://phys.org/news/2015-03-short-circuit-particle-hunter-machine.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--