

CERN – LHC NEWS 2013
WEBSITE: TAKING AT CLOSER LOOK AT LHC
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[Higgs and Englert are awarded Nobel Prize in Physics 2013.](#)

"For the theoretical discovery of a mechanism that contributes to our understanding of the origin of mass of subatomic particles, and which recently was confirmed through the discovery of the predicted fundamental particle, by the ATLAS and CMS experiments at CERN's Large Hadron Collider".

[CERN WEBSITE OCTOBER 2013](#)

CERN honoured by Prince of Asturias award. CERN has today received the 2013 Prince of Asturias Award for Technical and Scientific Research, shared with theorists Peter Higgs and François Englert. This award has been given by the Prince of Asturias Foundation, which seeks to encourage and promote scientific and cultural values. Felipe de Borbón, Prince of Asturias and heir to the throne of Spain, is the Honorary President of this foundation since its creation in 1980.

[PRINCE OF ASTURIAS AWARDS](#)

LHC: growing pains.

Heat expands and cold contracts: it's a simple thermodynamic rule. But when temperatures swing from 300 K to near-absolute zero, this rule can mean a contraction of more than 80 metres across the LHC's 27-km-long cryogenic system. Keeping this growth in check are compensators (a.k.a. bellows), which shrink and stretch in response to thermodynamic changes. Leak tests and X-rays now underway in the tunnel have revealed that these "joints" might be suffering from growing pains...

[CERN BULLETIN, SETEMBER 2013.](#)

CERN opens its doors to the world.

From 27 to 30 September 2013, CERN is putting on a long weekend of events and activities as a way of sharing its research and discoveries with its community and the wider public.

[CERN PRESS RELEASE July 2013](#)

LHC experiment observes new matter-antimatter difference.

The LHCb collaboration at CERN submitted a paper to Physical Review Letters on the first observation of matter-antimatter asymmetry in the decays of the particle known as the B_s^0 . It is only the fourth subatomic particle known to exhibit such behaviour.

[CERN PRESS RELEASES Apr 2013](#)

First three-year LHC running period reaches a conclusion. Geneva 14 February 2013. At 7.24am, the shift crew in the CERN1 Control Centre extracted the beams from the Large Hadron Collider, bringing the machine's first three-year running period to a successful conclusion. The LHC now begins its first long shutdown, LS1. Over the coming months major consolidation and maintenance work will be carried out across the whole of CERN's accelerator chain. The LHC will be readied for higher energy running, and the experiments will undergo essential maintenance. LHC running is scheduled to resume in 2015, with the rest of the CERN complex starting up again in the second half of 2014.

[CERN Updates February 2013.](#)

2013: the world's highest-energy particle accelerator is just getting started. What's next for the Large Hadron Collider? Experiments at the Large Hadron Collider made a major discovery, but the world's highest-energy particle accelerator is just getting started. Experiments at the Large Hadron Collider made a major discovery, but the world's highest-energy particle accelerator is just getting started. Starting in March 2013, the LHC's long shutdown will give scientists, engineers and technicians the opportunity to upgrade the machine to run close to its design energy. Scientists expect to collect data from more than 200 quadrillion particle collisions after the machine switches back on in 2015. At higher energies, they will be able to see even more interesting events.

[Symmetry. February, 2013.](#)

Protons smash lead ions in first collisions of 2013. On January 21st, after a week of tests with beams of protons and lead ions, the LHC team declared "stable beams" as protons collided with lead ions in the first LHC physics beams of 2013. The collisions mark the start of a lead-proton run that is set to continue until February, when the LHC begins its two-year shutdown.

[CERN, January 2013.](#)

The discoveries continue. Twenty-thirteen will be a year of new projects and new data in Particle Physics. The Dark Energy Survey will very soon begin mapping our universe as it seeks to unravel the mystery of dark energy. The NOvA experiment will power up and begin its studies of the strange properties of neutrinos. The Large Underground Xenon experiment will start its search for the quiet signal of dark matter. The Large Hadron Collider will undergo upgrades, enabling it to climb to higher collision energy and produce heavier particles, while analysis continues on the existing LHC dataset. Upgrades are also in the works for the Belle-II SuperB factory. And we expect additional results from a slew of other projects and analyses, answering questions about dark matter and dark energy, neutrino properties, the asymmetry between matter and antimatter, physics beyond the Standard Model, the cosmic phenomena that emit the most energetic form of light, and much, much more.

[SYMMETRY. January 2013.](#)