LHC science begins

Photo courtesy of David Harris, SLAC

On March 30, 2010, the Large Hadron Collider at CERN saw its first high-energy proton collisions. The event excited the entire community of particle physicists who had worked under intense public scrutiny through a startup process that included many bumps along the way, typical of all collider startups.

The LHC has had more public attention than almost any large science project in decades. Much of that attention hasn't been focused on the science or facts of the project and so there are still quite a few misconceptions about the LHC floating about.

I happened to be in Florence, Italy, the day after the startup and was reading a newspaper that previewed a story about the LHC on the front page with the line "Siamo vicini alla particella di Dio", or "We are close to the God particle." This statement represents both the success and the failure of the public discussion about the LHC. It is on the front pages of newspapers internationally, but the messages are not quite accurate.

The March 30 collisions marked just the beginning of the Large Hadron Collider's high-energy science run, as we discuss in our feature "Are we there yet?" on page 10. The LHC will need to take a few years of data to make many of its potential discoveries conclusively. There is no chance that discovery of the "God particle," as the Higgs boson is also known, is "close" by the standards of news media that have news cycles measured in days, at most.

But, if the Higgs is there to find, and the Tevatron Collider at Fermilab doesn't turn it up first, the LHC will almost certainly discover it within a few years.

The LHC is not the only accelerator in the business, just the one getting the most attention. The vast majority of particle accelerators in the world have industrial and commercial applications. Demand for accelerators is growing in medicine, industry, and science. Yet employers are having trouble finding enough trained accelerator scientists, engineers, and technicians to meet their needs. On page 16, we look at this situation and how the accelerator community is trying to tackle the problem.

From the successful startup of the LHC to the rapid development of new accelerator technologies and industrial applications, accelerator science is an exciting field right now.

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