

Abstract :

In summer 2012 the CMS and ATLAS experiments at the Large Hadron Collider (LHC) found a new particle which could be the long sought Higgs boson. This boson was already predicted to exist in 1964, and is thought to be responsible for making the Universe work the way we know it today. Scientists have been searching for this particle without success for the last few decades, at ever more powerful accelerators. Such a Higgs-like particle was finally found last year.

In this lecture we will show a brief history of the discovery of the particle, highlight the importance of this discovery, and discuss the very latest results from the LHC, using mostly the CMS data as an example. In particular, new results obtained this year with the full 2011-2012 collisions data set show that this new particle has indeed all the properties that we can measure, for it to be called a Higgs boson. This Higgs boson is a brand new elementary particle, unlike any other elementary particle we have discovered so far.