

## **A particle consistent with the Higgs Boson observed with the ATLAS detector at the large hadron collider**

Atlas Collaboration. (2012). A particle consistent with the Higgs boson observed with the ATLAS detector at the Large Hadron Collider. *Science*, 338(6114), 1576-1582. <10.1126/science.1232005> Accessed 22 Jul 2021.

### **Abstract**

Nearly 50 years ago, theoretical physicists proposed that a field permeates the universe and gives energy to the vacuum. This field was required to explain why some, but not all, fundamental particles have mass. Numerous precision measurements during recent decades have provided indirect support for the existence of this field, but one crucial prediction of this theory has remained unconfirmed despite 30 years of experimental searches: the existence of a massive particle, the standard model Higgs boson. The ATLAS experiment at the Large Hadron Collider at CERN has now observed the production of a new particle with a mass of 126 giga-electron volts and decay signatures consistent with those expected for the Higgs particle. This result is strong support for the standard model of particle physics, including the presence of this vacuum field. The existence and properties of the newly discovered particle may also have consequences beyond the standard model itself.