HUNTING THE HIGG-BOSON: IS IT FOUND AT LHC?

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The Standard Model, the theory of particle physics was established 40 years ago and it seems to describe all experimental data very well. All of its elementary particles are identified and studied apart from the Higgs boson. While searching for the Standard Model Higgs boson, the two main experiments of the Large Hadron Collider at CERN, CMS and ATLAS in 2012 observed a new boson with properties close to those of the Higgs boson. After outlining the experimental finding and the latest LHC results we show why we shall need further studies in order to unambiguously determine whether of not the new boson is the Standard Model Higgs boson or something else.

Keywords: Higgs boson, Standard Model, CERN, LHC, CMS