

# **THE CMS EXPERIMENT AT CERN: HIGGS'S BOSON DISCOVERY AND FUTURE PERSPECTIVES**

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The CMS experiment at LHC is running smoothly and with high efficiency at continuously increasing luminosity. With the statistics accumulated so far, the Collaboration has been able to re-discover all the SM processes. In addition, using data samples corresponding to integrated luminosities of up to 5.1 inverse femtobarns at 7 TeV and 5.3 inverse femtobarns at 8 TeV, an excess of events is observed above the expected background at a mass near 125 GeV with a local significance of 5.0 standard deviations, signalling the production of a new particle. The excess is most significant in the two decay modes with the best mass resolution,  $\gamma\gamma$  and  $ZZ$ . The status of the experiment and the results obtained so far, with special emphasis to the discover of this new boson together with future perspectives will be discussed.