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The compatibility of the LHC data with new bosons

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With the discovery of a Higgs boson at the Large Hadron Collider (LHC) new window of exploration of fundamental interactions is now available. The study of the couplings of this Higgs boson to other particles and the search for new bosons have become a focus. Based on features of the data collected by experiments at the LHC during Run 1 the hypothesis of a new boson was formulated and the compatibility with the data was estimated. In this hypothesis the new boson would have a mass around 270 GeV and would decay in to the Higgs boson and another scalar, referred to as S, among other decays. This results in a number of predictions that will be summarized. The compatibility of the hypothesis with new data reported by the experiments will also be discussed.

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