

Abstract Submitted  
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**One Higgs and a Standard Model, No Need for Supersymmetry**

DAVID NETO, Oklahoma State Univ — With the detection of a Higgs like boson at 125 GeV in the summer of 2012, the Standard Model of particle physics was complete. However, there remain theoretical problems with the SM, such as naturalness and the hierarchy problem to name a few. For many years, extensions of the SM such as Supersymmetry, have provided interesting theoretical solutions to many of these problems. In addition to the wealth of beyond the Standard Model physics these theories predict. Yet, with the latest LHC data, there is still no sign of SUSY. With the SM holding up extremely well to the highest energies we have been able to experimentally probe. Here, we examine some of the “theoretical shortcomings” of the SM. We intend to question, based on LHC data, whether there is a need for SUSY, or if the SM, with the so far discovered single Higgs boson, can remain a consistent model of particle physics at yet higher energies.

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