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Interpreting features of the LHC data with a second complex doublet and a singlet

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Based on a number of features of the LHC data in Run I, that have re-emerged in Run II, the HEP group at Wits formulated a hypothesis. This hypothesis entails the existence of a heavy boson with a mass around twice the mass of the SM Higgs boson and a single scalar with a mass around 150 GeV. Data reported recently displays discrepancies with the SM that are consistent with the decay of a boson of a mass around 600 GeV that decays into the above mentioned bosons. We interpret these effects in the context of a second scalar complex doublet and a singlet. The parameters of the model that fit the data are extracted.

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