

Scalars 2023

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Scalar Triplet Explanation of the 95 GeV di-Photon Excess

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Content :

I discuss the $SU(2)$ triplet extension of the Standard Model as the origin of the 95 GeV di-photon excess. We show that for a small mixing angle with the Standard Model Higgs, the neutral component of the triplet has a sizable branching ratio to $\gamma\gamma$. Consequently, we make several precise predictions: 1) a positive shift in the mass of the W-boson, 2) associated production of photons alongside tau leptons and jets, 3) the presence of a charged Higgs boson giving a stau-like signal, and 4) a broad spectrum of the transverse momentum of the di-photon pair.

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