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A Chiral Composite Model for the 750 GeV Diphoton Resonance

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The 750 GeV diphoton resonance could be a heavy pion of a new strong dynamics sector with a confinement scale $\mathcal{O}(1 \text{ TeV})$. New fermions, vector-like under the strong dynamics group, are chiral under a new $U(1)'$ gauge symmetry such that their masses are related to the $U(1)'$ -breaking scale or the confinement scale. Our model predicts a phenomenologically rich spectrum near the TeV scale, including a testable decay channel of the 750 GeV resonance into a photon plus Z' boson, which naturally has a large leptonic branching ratio.

Summary

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