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Viability of light-Higgs strongly-coupled scenarios

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We present a one-loop calculation of the oblique S and T parameters within strongly-coupled models of EW symmetry breaking with a Higgs-like boson and analyze the phenomenological implications. Using dispersive representations free of unphysical cut-offs, we obtain S and T at the one-loop level in terms of a few resonance parameters.

On the contrary to a widely spread believe, we demonstrate that strongly coupled EW models with massive resonances are not in conflict with the experimental S and T and the recently discovered Higgs-like particle. Nevertheless, the masses of the new vector and axial-vector resonance are forced to lie in general above the TeV scale and the hWW coupling must be very close to that in the Standard Model. Our conclusions are generic and apply to more specific scenarios such as the minimal $SO(5)/SO(4)$ composite Higgs model.

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