

Singlet-like Higgs bosons: models and phenomenology

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The presence of extra scalar singlets is a feature of several motivated extensions of the Standard Model, and the mixing of such a singlet with the Higgs boson is allowed to be quite large by current experiments. I will consider both direct and indirect searches, and quantify the current constraints as well as the prospects for future hadron and lepton machines. The results are first presented in a general scalar singlet extension of the Standard Model, taking advantage of the very small number of parameters relevant for the phenomenology. Finally, I will specify the same analysis to a few most natural models, i.e. the Next-to-Minimal Supersymmetric Standard Model and Twin Higgs.

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