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Testing models of new physics with HiggsSignals

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We present the public computer tool HiggsSignals, which performs a statistical compatibility test of arbitrary Higgs sectors against Higgs boson signal rate and mass measurements at hadron colliders. We discuss how the program can be used to derive constraints on the Higgs sector of new physics models, using all currently available Higgs signal measurements from ATLAS, CMS, and the Tevatron experiments. This will be demonstrated for examples of the Minimal Supersymmetric Standard Model (MSSM) as well as for a model-independent scale factor parametrization of the Higgs couplings. Finally, we discuss the prospects for the Higgs coupling determination with future data from the LHC and the ILC.

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