

## FlexibleDecay: An automated calculator of scalar decay widths

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We present FlexibleDecay, a tool to calculate decays of scalars in an arbitrary BSM model. The tool aims for high precision particularly in the case of Higgs boson decays. In the case of scalar and pseudoscalar Higgs boson decays the known higher order SM QED, QCD and EW effects are taken into account where possible. The program works in a modified  $\overline{\text{MS}}$  scheme that exhibits a decoupling property with respect to heavy BSM physics, with BSM parameters themselves treated in the  $\overline{\text{MS}}$ / $\overline{\text{DR}}$ -scheme allowing for an easy connection to high scale tests for, e.g., perturbativity and vacuum stability, and the many observable calculations readily available in  $\overline{\text{MS}}$ / $\overline{\text{DR}}$  programs. Pure BSM effects are taken into account at the leading order, including all one-loop contributions to loop-induced processes. The program is implemented as an extension to FlexibleSUSY, which determines the mass spectrum for arbitrary BSM models, and does not require any extra configuration from the user.

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