

SARAH wiki

SARAH is a Mathematica package for building and analysing SUSY and non-SUSY models. It calculates all vertices, mass matrices, tadpoles equations, one-loop corrections for tadpoles and self-energies, and two-loop RGEs for a given model. SARAH writes model files for [FeynArts](#), [CalcHep/CompHep](#), which can also be used for dark matter studies using [MicrOmegas](#), in the [UFO](#) format which is supported by MadGraph, Herwig++ and Sherpa, as well as for [WHIZARD](#).

SARAH is also the first available spectrum-generator-generator: based on the derived, analytical expression it creates source code for [SPHeno](#). In that way, it is possible to implement new models in SPHeno without the need to write any Fortran code by hand. The output for [Vevacious](#) can be used to check for the global minimum for a given model and parameter point. Running SARAH is considerably fast, it includes already a long list of SUSY and non-SUSY models, and the implementation of new models is efficient and straightforward.

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Calculations performed by SARAH

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Possible outputs of SARAH

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