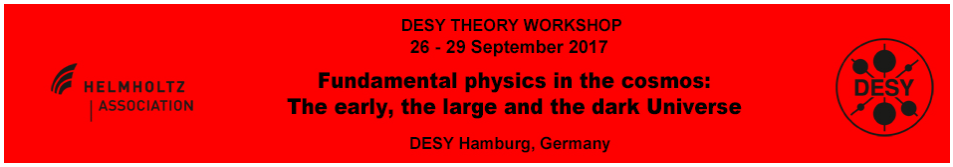

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Precise Higgs mass calculations in supersymmetry

Wednesday 27 September 2017 14:17 (17 minutes)

In several supersymmetric (SUSY) models the Higgs mass is predicted to be smaller than the Z boson mass. Therefore, in order for a SUSY model to predict the correct Higgs mass of 125 GeV, large loop corrections are required. Such large loop corrections are achieved in scenarios with large stop masses and/or a large stop mixing. However, the large loop corrections lead to a slow convergence of the perturbation series and therefore to a large truncation error.

In this talk I present different approaches to calculate the lightest CP-even Higgs mass in the MSSM and compare their precision. Afterwards, FlexibleEFTHiggs is presented, a general method to resum large logarithmic corrections and at the same time include all non-logarithmic 1-loop terms. FlexibleEFTHiggs therefore provides a precise Higgs mass prediction for both small and large SUSY masses.

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