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5D MSSM at Two loop

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The evolution equations of all supersymmetric and soft-terms are derived for the two-loop renormalisation group equations (RGEs) in a five-dimensional MSSM compactified on a S_1/Z_2 to yield the standard four space-time dimensions. Different possibilities can be discussed, however, we shall consider the limiting case of superfields where the Standard Model matter fields are restricted to the brane. We will compare our two-loop results to the results found at one-loop level. In this model the power law running in five dimensions and a compactification scale in the $10 - 10^3$ TeV range has significant effects on the running. We also show that gluino mass may drive a large enough A_t to reproduce the measured Higgs mass of 125 GeV and have a light stop superpartner below ~ 1 TeV, as preferred by the fine tuning argument for the Higgs mass.

Apply to be considered for a student ; award (Yes / No)?

No

Level for award;(Hons, MSc, PhD, N/A)?

N/A

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