Two-Loop Calculations for M_W in the MSSM with FeynArts

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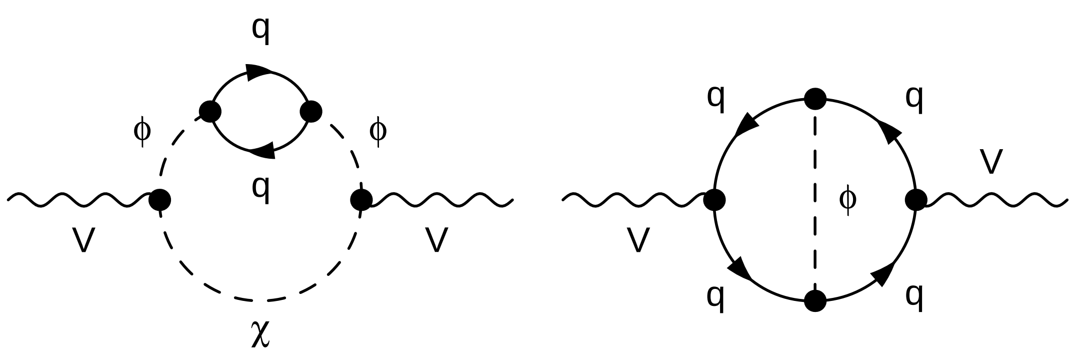
Typical diagrams:



Tools: *FeynArts*: Generation of MSSM diagrams
TwoCalc: Reduction to scalar integrals

Time needed: $\sim$ 1 day on a PentiumII, 500 MHz

Who did what:

– *FeynArts*: T. Hahn (hahn@feynarts.de)
– MSSM model file: T. Hahn, C. Schappacher
– *TwoCalc*: G. Weiglein
– Calculation: S. Heinemeyer, G. Weiglein
(heinemeyer@bnl.gov, Georg.Weiglein@cern.ch)

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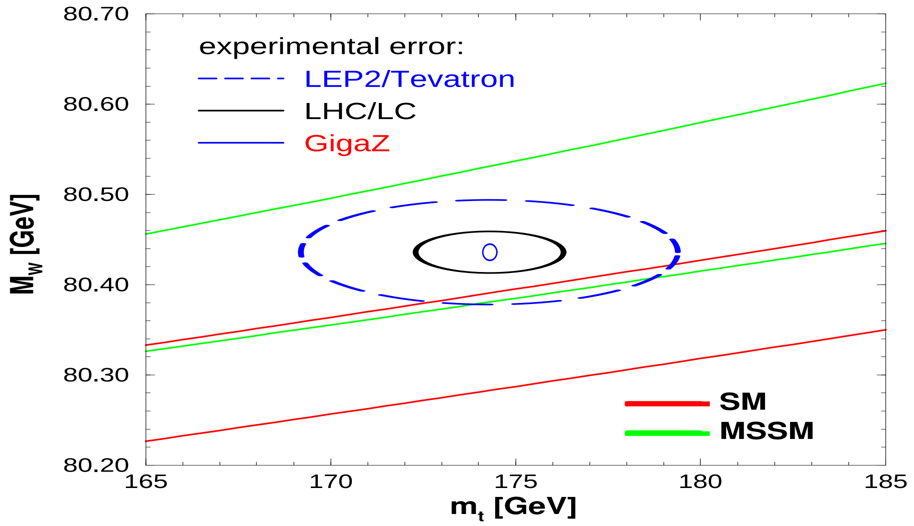
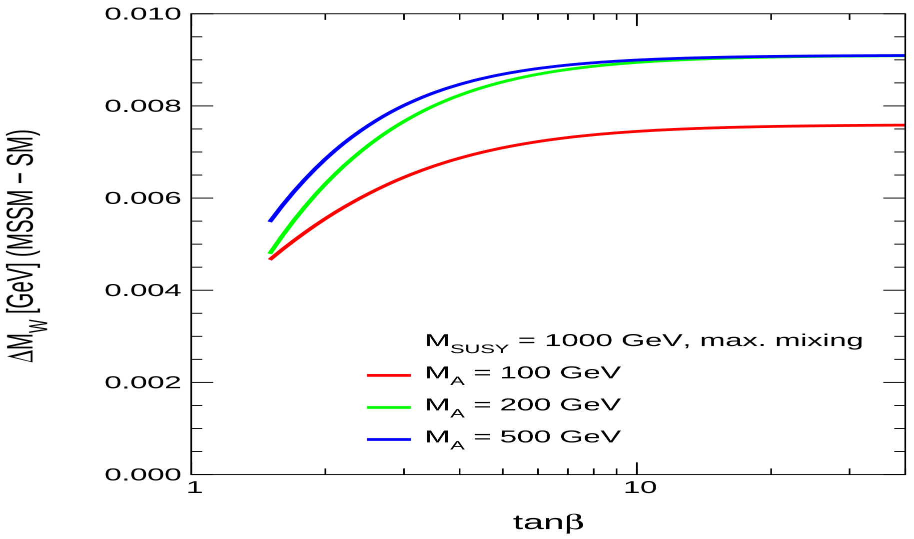
Physics motivation: High theoretical precision for electroweak observables (e.g. M_W).

$\Rightarrow$ distinguish SM $\leftrightarrow$ MSSM



Special problems: Many scales in MSSM

Result: Additional MSSM contribution to M_W:



Future plans: Calculation of sub-leading terms

WWW: `feynhiggs.de`, `feynarts.de`, `hep-processes.de`