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Impact of LHC search results on the W mass prediction in SUSY models

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Electroweak precision observables, such as the W boson mass, are highly sensitive to quantum corrections of New Physics. Thus they provide a powerful tool to test and constrain extensions of the Standard Model. We present results for MW in the MSSM with complex parameters and in the NMSSM, including all known higher order corrections of SM- and SUSY-type. We study the size of the MW contributions from all SUSY particle sectors and investigate the genuine NMSSM effects. We show the impact of LHC SUSY searches on the prediction for MW. In particular the effect on the MW prediction of the Higgs signal at about 126 GeV is analyzed, which in the MSSM can be interpreted both as the light or the heavy CP-even Higgs. We find that for both interpretations the predicted MSSM region for MW is in good agreement with the experimental measurement.

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