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Light Higgs Scenario in BMSSM and LEP Precision Data

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Content :

In this talk we consider very light Higgs fields in BMSSM(Beyond MSSM). The spectrum below TeV scale is the same as the MSSM but the Higgs potential is modified and is well described in terms of effective dimension five and six operators. A correction from the BMSSM operators allows us to consider new parameter space of Higgs sector which is not allowed in the MSSM. It can be regarded as a constrained version of general 2 Higgs doublet model (2HDM) as long as Higgs sector is concerned. We focus on the possibility that CP odd Higgs (A) mass is about 7 or 8 GeV and charged Higgs mass is comparable to W mass. At the same time one of the CP even Higgs (h) is light enough such that h and A production at the Z pole is kinematically allowed. The tension between forward backward asymmetry of bottom quark Ab_FB measured at LEP and the Standard Model prediction can be ameliorated if bottom quark pair produced from light CP even Higgs is taken into account.

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