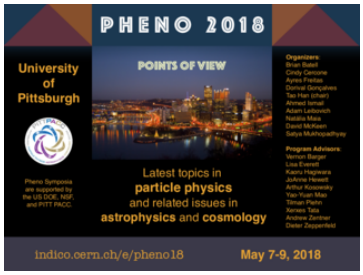

Contribution ID: **447** Type: **parallel talk**

The Supersymmetric Georgi-Machacek Model

Tuesday 8 May 2018 17:00 (15 minutes)

We show that the well known Georgi-Machacek (GM) model can be realized as a limit of the recently constructed Supersymmetric Custodial Higgs Triplet Model (SCTM) which in general con- tains a significantly more complex scalar spectrum. We dub this limit of the SCTM, which gives a weakly coupled origin for the GM model at the electroweak scale, the Supersymmetric GM (SGM) model. We derive a mapping between the SGM and GM models using it to show how a supersym- metric origin implies constraints on the Higgs potential in conventional GM model constructions which would generically not be present. We then perform a simplified phenomenological study of diphoton and ZZ signals for a pair of benchmark scenarios to illustrate under what circumstances the GM model can mimic the SGM model and when they should be easily distinguishable.

Summary

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