# Scalars 2017

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# The Supersymmetric Georgi-Machacek model

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**Content** :

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 contains a significantly more complex scalar spectrum. We dub this limit of the SCTM the Supersymmetric GM (SGM) model. We derive a mapping between the SGM and GM models using it to show supersymmetry implies constraints on the Higgs potential in the conventional GM model. 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.

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