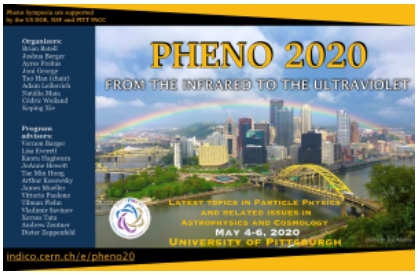

Contribution ID: **1013** Type: **Parallel Talk**

Updated constraints on the Georgi-Machacek model

Monday 4 May 2020 17:15 (15 minutes)

The Georgi-Machacek (GM) model extends the Standard Model Higgs sector with weak isospin triplets in such a way as to preserve the ρ parameter at tree level. We evaluate the experimental constraints on the GM model from direct searches for new Higgs bosons and from measurements of the 125 GeV Higgs. A large number of constraints are implemented by interfacing the public codes HiggsBounds and HiggsSignals with the GM model calculator GMCALC.

We find that large regions of parameter space are allowed by the current data. Furthermore, we evaluate the allowed couplings of the 125 GeV Higgs after applying all experimental constraints, noting that the most stringent constraints arise from direct searches for new Higgs bosons, rather than from 125 GeV Higgs signal strengths. We also identify novel constraints on the model from new Higgs decays $H_3^0 \to Zh$ and $H \to hh$. These are promising channels for future searches.

Summary

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Session Classification: Higgs I

Track Classification: Higgs