

Portoroz 2013: Probing the Standard Model and New Physics at Low and High Energies

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Constraining new physics with the current Higgs data

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Based on two model studies I will discuss how the recent Higgs measurements can be used to constrain new physics effects. The first example concerns colored scalars inherent to theories of matter unification. Using existing Higgs data, nontrivial constraints on scalars with masses of a few hundreds of GeV can be obtained. The second study concerns vector-like fermions mixing with SM quarks. After considering electroweak and flavor constraints together with direct searches for such states, I will present the impact of Higgs data on the unconstrained parameter space of such models.

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