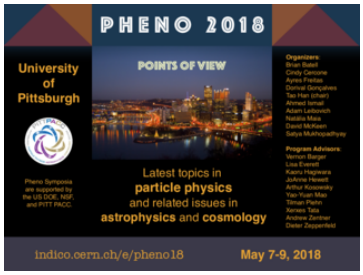

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Flavor Changing Heavy Higgs Interactions with Leptons at Hadron Colliders

Tuesday 8 May 2018 18:15 (15 minutes)

We adopt a general two Higgs doublet model (2HDM) to study the signature
of flavor changing neutral Higgs (FCNH) decays into leptons at the CERN
Large Hadron Collider (LHC) as well as future hadron colliders.
$pp \to \phi^0 \to \tau^{\mp}\mu^{\pm} + X$, where ϕ^0 could be a CP-even scalar [h^0 (lighter), H^0 (heavier)] or a CP-odd pseudoscalar (A^0).The LHC measurements of the light Higgs boson (h^0) favor the alignment limit of a 2HDM, in which the couplings of h^0 approach Standard Model values.In this limit, FCNH couplings of the light Higgs boson h^0 are naturally suppressed by a small mixing parameter $\cos(\beta - \alpha)$, while the FCNH couplings of heavier neutral Higgs bosons H^0, A^0
are sustained by $\sin(\beta - \alpha) \sim 1$. We evaluate the production rate of physics background from dominant processes ($\tau^+\tau^-, WW, ZZ, Wq, Wg, t\bar{t}$) with realistic acceptance cuts and tagging efficiencies. Promising results are found for the LHC at 13 or 14 TeV collision energies.
In addition, we study the discovery poential of future pp colliders
with 27 TeV and 100 TeV.

Summary

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