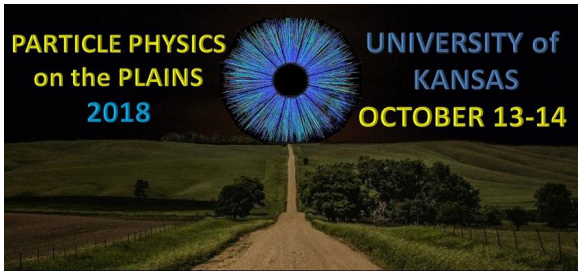

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Flavor Changing Heavy Higgs Interactions with Leptons at Hadron Colliders

Saturday 13 October 2018 15:50 (20 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
collision energies $\sqrt{s} = 13$ TeV and 14 TeV.
%
In addition, we study the discovery poential of future pp colliders
with $\sqrt{s} = 27$ TeV and 100 TeV.

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