



Contribution ID: 463

Type: Parallel talk

## Flavor Changing Neutral Higgs Bosons Meet the Top and the Tau at Hadron Colliders

Friday, July 12, 2019 3:30 PM (15 minutes)

A general two Higgs doublet model is employed to study flavor changing neutral Higgs (FCNH) interactions in pp collisions.

We investigate the discovery potential of

(a) a flavor changing neutral Higgs boson decays into leptons,

$pp \rightarrow \phi^0 \rightarrow \tau^\mp \mu^\pm + X$  from gluon fusion, and

(b) production of a flavor changing neutral Higgs boson associated with a top quark  $pp \rightarrow t\phi^0 + X$ , where  $\phi^0$  could be a CP-even scalar ( $h^0, H^0$ ) or a CP-odd pseudoscalar ( $A^0$ ).

The light Higgs boson  $h^0$  is found to resemble closely the standard Higgs boson at the Large Hadron Collider (LHC). In the alignment limit of  $\cos(\beta - \alpha) \simeq 0$ , for  $h^0-H^0$  mixing, FCNH couplings of  $h^0$  are naturally suppressed, but such couplings of the heavier  $H^0, A^0$  are sustained by  $\sin(\beta - \alpha) \simeq 1$ .

We evaluate physics backgrounds from dominant processes with realistic acceptance cuts and tagging efficiencies.

We find promising results for the LHC with  $\sqrt{s} = 14$  TeV, and future pp colliders with  $\sqrt{s} = 27$  TeV and 100 TeV

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**Session Classification:** Higgs Physics

**Track Classification:** Higgs Physics