



Contribution ID: 210

Type: Talk

Top Flavor Changing Neutral Higgs Interactions at the LHC

Tuesday 5 July 2016 14:20 (20 minutes)

A general two Higgs doublet model (2HDM) is adopted to study the signature of flavor changing neutral Higgs (FCNH) decay

$\phi^0 \rightarrow t\bar{c} + \bar{t}c$, where

ϕ^0 could be a CP-even scalar (H^0) or a CP-odd pseudoscalar (A^0)

as well as $t \rightarrow ch^0$.

Measurement of the light 125 GeV neutral Higgs boson (h^0) couplings at the Large Hadron Collider (LHC) favor the decoupling limit or the alignment limit of a 2HDM, in which gauge boson and diagonal fermion couplings of h^0 approach Standard Model values.

In such limit, FCNH couplings of h^0 are naturally suppressed by a small mixing parameter $\cos(\beta - \alpha)$, while the off-diagonal couplings of heavier neutral scalars ϕ^0 are sustained by $\sin(\beta - \alpha) \sim 1$.

We study physics background from dominant processes with realistic acceptance cuts and tagging efficiencies. Promising results are found for the LHC running at 13 or 14 TeV collision energies.

Author: Prof. KAO, Chung (University of Oklahoma)

Co-authors: Dr ALTUNKAYNAK, Baris (University of Oklahoma); Mr MCCOY, Brent (University of Oklahoma); Dr KOHDA, Masaya (Chung-Yuan Christian University); Prof. HOU, Wei-Shu (National Taiwan University)

Presenter: Prof. KAO, Chung (University of Oklahoma)

Session Classification: Flavour Physics

Track Classification: Flavour Physics