

## Phenomenology 2019 Symposium



Contribution ID: 773

Type: parallel talk

# Charming top decays with flavor changing Higgs boson and $\tau\tau$ at LHC

Monday 6 May 2019 17:45 (15 minutes)

We study the prospect of discovering a rare  $t \rightarrow ch^0$  decay in the top pair production channel at LHC. We follow a general two Higgs doublet model framework to investigate this signature, with Higgs decaying into  $\tau\tau$  and another top decaying hadronically to a b quark and two light jets. We search for the following final states  $bjj\ell^+\ell^- + \text{MissingEnergy}$  and  $bjj\ell^\pm\tau_h + \text{MissingEnergy}$ , where  $\tau_h$  refers to jets coming from  $\tau$  decay. We present our Monte Carlo analysis using Delphes. We use boosted decision trees for discrimination at current and Future HL-LHC and HE-LHC.

## Summary

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**Session Classification:** Top