



Contribution ID: 184

Type: Talk

[336] Search for CP violation in $t\bar{t}H$ and tH production in multilepton channels

Wednesday 29 June 2022 16:00 (15 minutes)

This analysis presents a measurement of the CP structure of the Yukawa coupling between the H and top quarks at tree level. We studied a data sample with several final state leptons, enriched in $t\bar{t}H$ and tH production, collected by the CMS experiment at the CERN LHC in proton-proton collisions at $\sqrt{s} = 13\text{TeV}$, corresponding to an integrated luminosity of 137fb^{-1} .

To separate the signature of a pure CP-even H interaction from a pure CP-odd one, we use machine learning techniques. Fractionary CP-odd contributions are not observed and hence in agreement with the SM predictions of a CP-even H. Determining $|f_{CP}^{Ht\bar{t}}| = 0.59$ with an interval of (0.24,0.81) at 68% confidence level.

Author: LIECHTI, Sascha Pascal (University of Zurich (CH))

Presenter: LIECHTI, Sascha Pascal (University of Zurich (CH))

Session Classification: Nuclear, Particle- & Astrophysics

Track Classification: Nuclear, Particle- and Astrophysics (TASK)