

Fourth MODE Workshop on Differentiable Programming for Experiment Design



Contribution ID: 26

Type: **not specified**

Study of top quark pair-production in association with higgs boson and photon at 13.6 and 14 TeV.

The research involves extensive calculations and simulations to predict the cross-sections and kinematic distributions of the $t\bar{t}H\gamma$ final state, using advanced computational tools such as MadGraph and PYTHIA. The thesis also includes an analysis of detector-level simulations using DELPHES to assess the feasibility of observing this rare process at the Large Hadron Collider (LHC). A detailed comparison of the results at both energy levels is provided. Additionally, the thesis discusses the implications of these findings for the couplings and interactions involving the top quark, Higgs boson, and photon, providing insights into the electroweak sector and contributing to the broader efforts in particle physics to verify and extend the SM framework.

Author: Mr AHMAD, Kamran (National Centre for Physics (PK))

Presenter: Mr AHMAD, Kamran (National Centre for Physics (PK))

Session Classification: Poster session

Track Classification: Poster session