Canadian Association of Physicists
Association canadienne des physiciens et physiciennes

Contribution ID: **267** Type: **Poster Competition (Graduate Student) / Compétition affiches (Étudiant(e) 2e ou 3e cycle)**

(G*) POS-J88 – Searching for charged Higgs bosons in W+photon final state

Wednesday 9 June 2021 14:01 (2 minutes)

The Higgs boson was observed at the Large Hadron Collider (LHC) at CERN in 2012. Its existence confirms the Higgs field which explains how some particles have mass while others do not. Since 2012, an important task has been to search for the neutral Higgs boson's charged siblings. In the Standard Model (SM), the Higgs boson is a massive neutral particle observed at a mass near 125 GeV. The Georgi-Machacek (GM) model extends the SM to have a fiveplet Higgs sector with singly and doubly charged Higgs particles. Our search of the charged Higgs boson uses the 2015-2018 Run-2 data from the LHC as well as simulated samples to model the processes. Machine learning algorithms are used on simulated samples to achieve optimal signal selection. The status of the current analysis will be presented.

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Session Classification: W-POS-J #80-107 Poster session (PPD) / Session d'affiches (PPD)

Track Classification: Particle Physics / Physique des particules (PPD)