Contribution ID: **59** Type: **not specified**

Search for Majorana neutrinos in same-sign WW scattering events with the ATLAS experiment.

Wednesday 13 December 2023 09:45 (15 minutes)

Among the open questions of particle physics is the origin of neutrino masses. These masses can be explained by the "Seesaw mechanism," which introduces Majorana neutrinos with masses on the TeV scale. This talk presents a search for such Majorana neutrinos produced in same-sign WW scattering. The analysis uses 140 fb^{-}1 of pp collison data collected between 2015 and 2018 by the ATLAS detector at the Large Hadron Collider. The analysis targets final states with with exactly two same-sign muons and at least two hadronic jets with a large separation in rapidity. The main backgrounds are the Standard Model same-sign WW scattering and WZ production. No significant excess over the Standard Model expectation is observed. The measurement results are interpreted in the phenomenological Type I Seesaw model and the Weinberg operator model.

Primary author: NEUNDORF, Jonas (None)

Co-author: PETERS, Krisztian (ATLAS (ATLAS Beyond Standard Model))

Presenter: NEUNDORF, Jonas (None)

Session Classification: Searches Parallel

Track Classification: Parallels: Searches