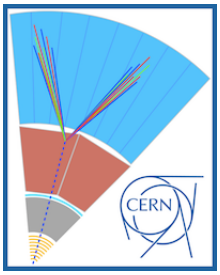

Contribution ID: **50** Type: **not specified**

Search for heavy neutral leptons in decays of W bosons using leptonic and semi-leptonic displaced vertices in $\sqrt{s}$ = 13 TeV pp collisions with the ATLAS detector

Thursday, 5 June 2025 10:10 (17 minutes)

A search is performed for long-lived heavy neutral leptons (HNLs), produced through the decay of a W boson along with a muon or electron. Two channels are explored: a leptonic channel, in which the HNL decays into two leptons and a neutrino, and a semi-leptonic channel, in which the HNL decays into a lepton and a charged pion. The search is performed with $140 fb^{-1}$ of $\sqrt{s} = 13$ TeV proton-proton collision data collected by ATLAS during Run 2 of the Large Hadron Collider. No excess of events is observed; Dirac-like and Majorana-like HNLs with masses below 14.5 GeV and mixing coefficients as small as 10^{-7} are excluded at the 95% confidence level. The results are interpreted under different assumptions on the flavour of the leptons from the HNL decays.

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