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Searching for a new leptophilic vector boson Z' with four-muon final state in the ATLAS detector[1] ZHE YANG, University of Michigan — The talk presents a search for a new leptophilic vector boson Z' decaying into the four-muon final state using the data collected in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector in the year 2015-2018. A moderate excess of 4 events with a + pair is the experimental signature for this study. The gauge boson Z' is predicted by the highly motivated gauged LL model, which is the simplest extension of the Standard Model (SM). The model addresses the observed g-2 of the muon anomalous magnetic dipole moment and the B physics anomalies. At the same time, the model probes physics and cosmology outstanding questions related to the dark matter and neutrino mass.

[1]HEPTools for ATLAS experiment

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