

# Search for $W'$ in Lepton+Missing $E_T$ Final State With Early Data at ATLAS

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## Abstract

Extensions of the SM gauge symmetries imply the existence of new heavy charged gauge boson generically denoted as  $W'$ . Assuming its SM-like couplings to fermions, we evaluate ATLAS discovery potential of such a boson in lepton (electron and muon) plus Missing  $E_T$  final state. The whole study is based on full detector simulation data which include trigger performance and realistic detector calibration. Relevant systematic uncertainties are discussed. The study is focused at early stages of data taking.