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Searches for Diboson Production in the Lepton + MET + Jets Final State in ATLAS

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The study of diboson production at high energy colliders tests the electroweak sector of the standard model (SM) and provides a sensitive probe of new physics beyond the SM. An important example is the production of a Higgs boson with mass greater than 140 GeV/c^2 which decays primarily to W boson pairs. The diboson decay channel where one W boson decays to leptons and the other vector boson decays to quarks leading to high energy jets is particularly interesting due to its large branching fraction as compared to all-leptoninc channels but is also challenging due to large backgrounds, particularly from W+jets.

We present searches for diboson production in the lepton + MET+ jets final state using \sqrt(s)=7 TeV collision data collected by the ATLAS detector during the 2011 run. Particular emphasis is placed on searches for (1) the SM Higgs boson with mass above the W pair production threshold and (2) SM WW+WZ production.

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